



## ASX Announcement

27 June 2016

# Test Work Achieves Concentrate above 68% Fe

Magnetite Mines Limited (ASX:MGT) (**Company**) is pleased to announce an update on test work for bulk concentrate production at the Razorback Deposit from the Mawson Iron Project in South Australia. The work was successful in producing concentrate above 68% Fe. The concentrate is now being sent to Chinese and Taiwanese Steel Mills for assessment, and to China Iron and Steel Research Institute (CISRI) for pelletising test work.

The material utilised for this study was collected from RC coarse residue samples retained from previously reported resource drilling programs. The material was composited and homogenised from known mineralised lithologies from the Razorback and Iron Peak deposits to create an approx. 3,200 kg representative bulk sample (see Table 1 below and Figure 1 and table 2 in Appendix 1 for sampling details). This test work was completed in two stages:

1. Sighter test work – 20 kg sample subset split from the bulk sample, in order to define processing parameters for the larger bulk sample
2. Bulk Sample – approx. 3,200 kg sample

Results for the test work are as follows:

**Table 1. Mawson Iron Project Bulk Concentrate Grades**

Sample	Mass (kg)	Mass Recovery	Rougher Rejection %	Concentrate Assay Grades*				
				Fe %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	P %	S %
Sighter	20	16.2	54.3	68.0	4.22	0.43	0.01	trace
Bulk	3,218.3	14.6	56.5	68.8	3.33	0.35	0.01	trace

\*Assay grades based on XRF analysis

The test work was completed at Bureau Veritas in Perth, Western Australia. The study utilised a conventional magnetite beneficiation flow sheet consisting of:

1. Coarse grinding;
2. Rougher low intensity magnetic separation (LIMS), achieving 56% rejection;
3. Fine grinding to 38 micron (P80);
4. 3 Stage cleaner LIMS, achieving 66% Fe concentrate; and
5. Final Clean-Up with gravity separation, using Wilfley Wet Tables.

These results confirm and extend previous work completed during PFS Optimisation studies in 2013, when concentrate at grades in the range of 67-68% Fe were produced.

The variation in mass recovery and Fe grade between the sighter test and bulk test is related to differences in the configuration of the Wilfley Tables given the differences in size of the samples. Wilfley Tables are a standard lab-scale test of concept to determine the suitability of gravity-related mineral separation. However, it is more optimal to apply spirals or hydroseparation to the final clean up stage within a mine-scale flowsheet, and the company is currently examining these methods through further test work. In addition, material from this current work is being examined by both optical and Scanning Electron Microscope (SEM) to assist in optimizing further test work.

Executive Chairman Mr. Gordon Toll said, "These results demonstrate conclusively that the Mawson Iron Project can produce a high quality, high grade product for the global steel market. As previously reported this work represents the first stage of our metallurgical comminution optimisation to be completed in readiness for Definitive Feasibility Studies. The comparison between sighter and bulk results well illustrates the possibilities for product iron grade versus silica content. The low phosphorous levels will obviously be of great interest to steel makers."

The next series of metallurgical testing will use adit material and diamond drill core, including looking at various ore types, and will further refine parameters such as rougher grind size and magnetite liberation grind size. We will also produce concentrates for sinter testing at CISRI.

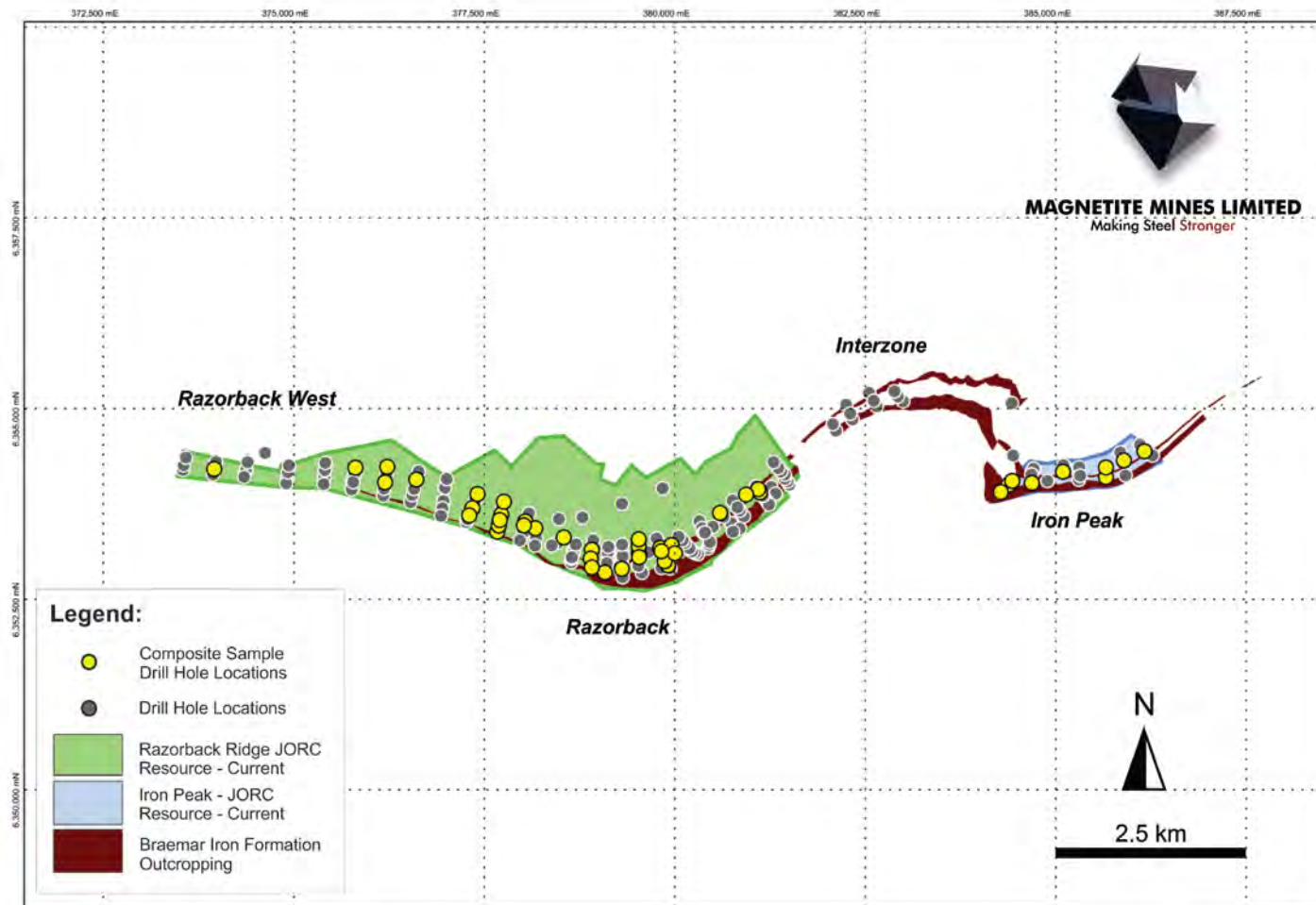
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Appendix 1 – Sample Details

Figure 1 – Bulk Concentrate Sample Locations at Razorback Deposit \*



\*Co-ordinates in GDA 94, Zone 54

Appendix 1 - Table 1 – RC drill hole co-ordinates and sample intervals for bulk sample

Hole ID	Easting*	Northing*	Hole Depth (m)	From (m)	To (m)
RRRC0006	379913	6352970	151	76	110
RRRC0007	379866.3	6353021	190	98	120
RRRC0007	379866.3	6353021	190	158	164
RRRC0007	379866.3	6353021	190	160	172
RRRC0010	379807.1	6353197	79	40	54
RRRC0022	381118.2	6353924	178	104	130
RRRC0023	381094.1	6353967	184	130	160
RRRC0031	380594.6	6353658	208	62	74
RRRC0036	379082.8	6352876	106	70	94
RRRC0050	379528	6353125	186	114	132
RRRC0050	379528	6353125	186	166	186
RRRC0052	379302.6	6352923	100	64	100
RRRC0061	379525.6	6353222	222	74	90
RRRC0062	379530.8	6353077	178	96	144
RRRC0091	377669.9	6353409	120	34	50
RRRC0091	377669.9	6353409	120	64	78
RRRC0092	377690	6353490	222	20	30
RRRC0092	377690	6353490	222	110	130
RRRC0093	377721	6353635	294	70	104
RRRC0093	377721	6353635	294	214	224
RRRC0093	377721	6353635	294	260	294
RRRC0098	379524.4	6353311	282	50	86
RRRC0098	379524.4	6353311	282	112	136
RRRC0098	379524.4	6353311	282	226	238
RRRC0098	379524.4	6353311	282	248	274
RRRC0099	378909	6353173	228	34	52
RRRC0099	378909	6353173	228	158	180
RRRC0099	378909	6353173	228	186	228
RRRC0100	378543.3	6353336	216	162	202
RRRC0203	379958.2	6353235	186	112	156
RRRC0203	379958.2	6353235	186	166	184
RRRC0204	379999.9	6353128	144	72	74
RRRC0206	378896	6353059	162	40	50
RRRC0206	378896	6353059	162	102	114
RRRC0206	378896	6353059	162	138	160
RRRC0208	380934	6353895	210	162	188
RRRC0210	377341.8	6353719	300	264	284
RRRC0211	377703	6353563	270	70	92
RRRC0211	377703	6353563	270	212	252

Hole ID	Easting*	Northing*	Hole Depth (m)	From (m)	To (m)
RRRC0212	378038	6353544	252	64	92
RRRC0212	378038	6353544	252	132	160
RRRC0212	378038	6353544	252	216	242
RRRC0213	378169.4	6353456	204	28	48
RRRC0213	378169.4	6353456	204	80	102
RRRC0213	378169.4	6353456	204	166	198
RRRC0217	379823.1	6353156	214	116	140
RRRC0217	379823.1	6353156	214	190	206
RRRC0218	378019.4	6353492	196	90	114
RRRC0223	377302.5	6353624	160	104	120
RRRC0226	378909.4	6352943	106	86	104
RRRC0251	376607.8	6354094	216	88	110
RRRC0251	376607.8	6354094	216	164	206
RRRC0253	376195	6354058	210	182	204
RRRC0262	373954.3	6354232	150	36	50
RRRC0262	373954.3	6354232	150	58	110
RRRC0270	375805.7	6354251	294	142	166
RRRC0270	375805.7	6354251	294	242	280
RRRC0271	376226.8	6354261	300	154	200
RRRC0271	376226.8	6354261	300	260	284
RRRC0272	377409.2	6353905	300	188	274
RRRC0273	377756	6353804	300	138	230
RRRC0078	384374.3	6354021	136	90	120
RRRC0085	384427	6354076	166	142	160
RRRC0275	384684.1	6354049	174	44	54
RRRC0275	384684.1	6354049	174	86	148
RRRC0276	385092.4	6354195	282	40	66
RRRC0276	385092.4	6354195	282	124	142
RRRC0276	385092.4	6354195	282	176	230
RRRC0278	385658	6354128	198	74	92
RRRC0278	385658	6354128	198	132	152
RRRC0280	385657.7	6354252	168	78	90
RRRC0281	385893.5	6354343	288	86	108
RRRC0281	385893.5	6354343	288	176	196
RRRC0281	385893.5	6354343	288	230	268
RRRC0283	386161.2	6354465	300	78	102
RRRC0283	386161.2	6354465	300	170	190
RRRC0283	386161.2	6354465	300	214	258
RRRC0285	384277.8	6353930	180	54	68
RRRC0285	384277.8	6353930	180	92	154

\*Co-ordinates in GDA 94, Zone 54