

SEPTEMBER 2015 QUARTERLY ACTIVITIES REPORT

ASX ANNOUNCEMENT

29 OCTOBER 2015

Mantle Mining Corporation Limited (ASX: MNM or the Company) is pleased to provide the following update on its activities for the quarter ended 30 September 2015.

Morning Star Gold Acquisition:

On 14 August Mantle announced that it had agreed to acquire Morning Star Gold NL (ASX: MCO):

- MCO reported a (2008) Resource of 910,000 oz Au, including 726,000 oz Au at 11.2 g/t Au (see Table 7),
- Numerous historic mines including Morning Star which has been dewatered and refurbished to 10 level,
- A new 80,000 t/yr processing and paste backfill plant and all required infrastructure already constructed,
- Consideration of \$3.75 million in tranches plus a 1% gross sales royalty for the first 5 years of production.

Norton Gold Mine Development:

On 8 July 2015 Mantle released the results of a positive internal scoping study:

- Mine designs of 30 m deep pits to produce 25,000 tpa at 6.5 g/t gold head grade over a 2.5 year mine life,
- Processing circuit to deliver 90% recovery into concentrate with subsequent 90% recovery into gold dore bars,
- Financial projections included total capital plus operating costs of \$7.1 million with 10 340 oz Au sold at \$1 500 / oz Au,
- Justification to proceed with All In Sustaining Costs (AISC) of \$775 / oz Au, NPV (8%) \$4.7 million and 6 month payback.

On 14 September Mantle announced that it had located additional high grade gold:

- Gold assay results of up to 50.5 g/t Au from veins in trenches,
- Provided increased confidence in Nine Grams and Stockworks as shallow mining targets,
- Focuses exploration and resource drilling targets at Frampton and Chandler,
- Delivers potential for improvement in Norton project life and economics.

Granite Castle Gold Exploration Project:

On 16 September Mantle announced the discovery of anomalous gold around a Carboniferous rhyolite plug:

• Gold assays an order of magnitude higher than typical background values,

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- Located within the same large batholith that hosts the Granite Castle gold deposit at its margin,
- Warrants follow-up geological reconnaissance, structural mapping, outcrop sampling and ground magnetics,
- Revised Mineral Development Licence application lodged for Granite Castle prospect.

Corporate Activity:

On 23 September Mantle announced a non binding MOU had been executed with Gekko Systems Pty Ltd

- Gekko is a global leader in the provision of gold and coal mineral processing solutions,
- Mantle and Gekko agreed to evaluate design, construction and possible operation of onsite processing facilities,
- Gekko will evaluate the potential to build, own and/or operate new regionally based intensive cyanidation facilities,
- Gekko is assisting Mantle with the evaluation and optimisation of gold processing at Norton and Morning Star.

Capital Raising Initiatives:

Earlier in the year, the Company accepted a total of \$150,000 in subscription monies from entities associated with Directors, Mr Martin Blakeman and Ian Kraemer (including \$75,000 which was received during the September 2015 quarter) ("Director Placement"). The terms of the Director Placement were identical to those offered to a Sophisticated Investor in January 2015, other than that the Directors' subscriptions were subject to shareholder approval in accordance with the ASX Listing Rules and pending such approval, the subscription monies would remain as unsecured, interest-free loans. Subsequent to the end of the quarter, on 19 October 2015 Shareholders approved the issue of 12,499,500 Shares and 9,375,000 MNMOB Options to those directors pursuant to the Director Placement.

On 7 September 2015, the Company announced that it had issued 5,651,232 fully paid ordinary shares to directors and employees of the Company in lieu of cash remuneration payable for the period 1 January 2015 to 30 June 2015 under the Company's approved Director and Employee Fee Plan.

On 11 September 2015 the Company announced the offer of a pro-rata non-renounceable priority entitlement issue of up to 78,973,425 new options, on the basis of 1 new option for every 1 expired option held by qualifying option holders at an issue price of 0.2 cents per new option, to raise up to approximately \$157,947 ("Priority Offer"). The Priority Offer was approved by Shareholders at the general meeting held on 19 October 2015 and subsequently closed on 21 October 2015.

On 28 September 2015 the Company announced that it had issued 20,833,333 ordinary fully paid shares and 15,625,000 options under a placement of \$250,000 to an existing shareholder who is both a sophisticated investor and long-term supporter of the Company.

Subsequent to the end of the quarter, the Company has today entered into an agreement with the underwriter of the aforementioned Priority Offer for the issue of a secured, interest-free convertible note with a face value of \$185,000. The Convertible Note is convertible at the election of the noteholder at any time during the 12 month term with the conversion price being the lower of 1.5c or the issue price of the Company's next capital raising, together with one free- attaching option (being the new stream of recently issued priority offer options) for every share issued upon conversion.

The Company takes this opportunity to thank its share and option holders, as well as the underwriter of its recent Priority Offer (which is an entity associated with its Joint Company Secretary), for their support of the Company through this exciting period of development

Competent Persons Statement:

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Mark Maxwell and Mr Stuart Moore, both Employees of Mantle Mining Corporation Ltd. Mr Maxwell and Mr Moore are both Members of the Australasian Institute of Mining and Metallurgy and both have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Maxwell (for Coal) and Mr Moore (for Minerals) consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

For further information please contact:

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Figure 1: Mantle's Project Locations.

Table 1: Mantle's Tenement Schedule.

Tenement	Project	Name	Grant Date	Expiry Date	Area	Interest (%)
ML 80035 ¹	Norton	Norton	04/04/1996	30/04/2017	22 Ha	90
EPM 14388	Charters Towers	Charters Towers	24/02/2005	23/02/2020	7 sub blocks	100
EPM 14179	Granite Castle	Range Creek	25/11/2004	24/11/2017	6 sub blocks	100
EPM 15527	Granite Castle	Oaky Creek	30/11/2007	29/11/2015	27 sub blocks	100
MDL 493	Granite Castle	Range Creek	application		1,935 Ha	100
EL 5294 ²	Bacchus Marsh	Bacchus Marsh	23/03/2011	22/03/2016	154 graticules	50
EL 5210	Latrobe Valley	Yalungah	03/06/2009	02/06/2019	25 graticules	100
EL 5336	Latrobe Valley	Jeeralang	30/04/2015	29/04/2020	368 graticules	100
EL 5337	Latrobe Valley	Thorpdale	20/04/2011	19/04/2016	79 graticules	100
EL 5338	Latrobe Valley	Baromi	30/04/2015	29/04/2018	3 graticules	100
EL 5428	Latrobe Valley	Mirboo	01/06/2015	31/05/2020	21 graticules	100
EL 5429	Latrobe Valley	Callignee	01/06/2015	31/05/2020	29 graticules	100

¹ Remaining 10% interest under application to transfer to Joint Venture partner Avanti Mining and Contracting Pty Ltd.

^{2.} Remaining 50% interest held by Joint Venture partner Exergen Pty Ltd.

Mantle's Mineral Resources

Class	Tonnes	Au (g/t)	Au (oz)	Ag (g/t)	Ag (oz)
Indicated	107,000	6.2	21,100	15	50,300
Inferred	141,000	3.9	17,700	12	52,600
Total	248,000	4.9	38,800	13	103,000

Table 2: Norton Mineral Resource, above 2 g/t Au cut-off.

The information in Table 2 is extracted from the report entitled "Norton Gold Mine Resource Estimate" created on 15 May 2015 and is available to view on www.mantlemining.com.

Table 3: Granite Castle Mineral Resource, above 1 g/t Au cut-off.

Class	Tonnes	Au (g/t)	Au (oz)	Ag (g/t)	Ag (oz)
Measured	111,000	4.3	15,500	58	205,800
Indicated	250,000	3.6	28,800	71	567,900
Inferred	403,000	2.5	32,900	56	727,200
Total	765,000	3.1	77,200	61	1,500,900

The information in Table 3 is extracted from the report entitled "Improved Confidence Levels for Granite Castle Resource" created on 28 May 2008 and is available to view on www.mantlemining.com.

Table 4: Charters Towers (Great Britain) Mineral Resource, above 1 g/t Au cut-off.

Class	Tonnes	Au (g/t)	Au (oz)	Ag (g/t)	Ag (oz)
Inferred	1,535,000	2.2	109,000		
Total	1,535,000	2.2	109,000		

The information in Table 4 is extracted from the report entitled "Disclosure Document" created on 2 October 2006 and is available to view on www.mantlemining.com.

In relation to Tables 2, 3, and 4, the Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

Class	Tonnes (Billion)	TM (%)	Ash (% db)	VM (% db)	FC (% db)	TS (% db)	GDSE (MJ/kg)
Inferred	1.6	52.9	10.4	47.2	42.4	3.4	24.5
Total	1.6	52.9	10.4	47.2	42.4	3.4	24.5

Table 5: Bacchus Marsh Mineral Resource, below 30% Ash cut-off.

The information in Table 5 is extracted from the report entitled "Mantle Reports Maiden JORC Resource" created on 15 August 2012 and is available to view on <u>www.mantlemining.com</u>. During the quarter, the small EL 5323 was voluntarily relinquished due to high competing land use values and a lack of work done. EL5323 contained an immaterial portion of the pre-existing Resource area and the Company is working with the original Resource consultant to re-estimate the remaining Resource in order to bring the Resource into compliance with the 2012 edition of the JORC Code.

Table 6: Latrobe Valley (Yarragon) Inferred Mineral Resource.

Region	Grid Mean Thickness (m)	Area (km2)	Density (g/cc)	Tonnage (Mt)		
Yarragon A seam	7.73	5.51	1.25	53		
Yarragon B seam north	11.33	3.39	1.25	48		
Yarragon B seam	17.06	8.84	1.25	188		
south						
Total				289		

The information in Table 6 is extracted from the report entitled "Mantle Acquires 289M Tonne JORC Inferred Coal Resource" created on 23 August 2013 and is available to view on <u>www.mantlemining.com</u>. As part of the renewal process in a prior quarter, Mantle relinquished a portion of the Resource area. The Company is working with the original Resource consultant to re-estimate the remaining Resource in order to bring the Resource into compliance with the 2012 edition of the JORC Code.

The Morning Star gold mine is located near the town of Woods Point approximately 120 km northeast of Melbourne (Figure 2).



The mine is located within a large regional tenement holding containing a number of historically high-grade gold mining operations within easy transport distance to the treatment plant. In addition to historic mining in the upper levels, the mine was operated by Gold Mines of Australia (WMC Ltd) between 1934 and 1959 (predominately in the deeper levels) and is reported to have produced 883,000 oz Au at an average grade of 26.6 g/t Au over its lifetime. It closed in 1960 due to the very low gold prices of the time and was allowed to flood (Figures 3 and 4).



Figure 4: Regional gold mines with historic production (A1 and Cohens held by others).

The mine exploits narrow quartz vein deposits hosted in a diorite dyke that is 700m long by 120m wide. The quartz veins are stacked and range up to 2m thick. Historic workings continue underground for 815m below the surface, to 25 level, and the dyke remains open at depth (Figures 5 and 6). Numerous other dyke hosted mines exist on the MCO tenements.



MCO acquired the assets in 1992 and spent substantial amounts exploring and developing the tenements. A new headframe and winder have been installed and the mine has been pumped out and the shaft refurbished to 10 level. Development drives have been rehabilitated in the upper levels to access new production areas. A large gap zone remains between the upper levels that were historically mined, and the lower levels that were mined by WMC. MCO reported a Mineral Resource for the Morning Star mine in 2008 (Table 7).

Deposit	Ν	Measured		Indicated		Inferred			Total			
	Tonnes	Grade	Au	Tonnes	Grade	Au	Tonnes	Grade	Au	Tonnes	Grade	Au
	(Kt)	(g/t)	(Koz)	(Kt)	(g/t)	(Koz)	(Kt)	(g/t)	(Koz)	(Kt)	(g/t)	(Koz)
Morning Star	22	20.9	15	259	15.6	130	1734	10.4	582	2015	11.2	726
Underground												
Morning Star	736	2.0	47	793	2.2	56	1079	2.3	80	2608	2.2	184
Surface												

Table 7: Morning Star gold mine Mineral Resource

The information in this report is extracted from the report entitled "910,000 Ounces Gold JORC Resource" created on 30 July 2008 and is available to view at <u>www.asx.com.au</u> under ASX code MCO. The Mineral Resource estimate is not Mantle's estimate and Mantle has not done sufficient work to report the estimate in accordance with the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). Mantle is not aware of anything to suggest that the assumptions underpinning the estimate have materially changed and will commence work to validate the Mineral Resource and disclose it in accordance with the 2012 edition of the JORC Code. Investors should treat the estimate with caution until validated.

MCO initially targeted production from remnant stopes above 10 level. Generally, development targets are located only short distances from the refurbished shaft. Donaldson's Reef, on 2 level, is only 100 m from the shaft, and Kenny's Reef, on 9 level, has already been accessed to enable bulk sampling for metallurgical purposes (Figure 7).



Figure 7: Potential production targets in upper areas of the mine.

A new beneficiation plant has been installed and a paste backfill plant built. Supporting infrastructure includes a high-speed winder, a water treatment plant, surface and underground power supplies and various site offices, workshops and a miner's camp. Expenditure on these projects since 2009 is reported to have been close to \$20 million (Picture 1).



Picture 1: Morning Star process plant and mine offices.

The gold at Morning Star is traditionally free milling allowing for production of a high grade concentrate from simple gravity processing and the plant is located central to other historically and currently operating gold mines that suffer from a lack of such infrastructure. MCO's Rose of Denmark, All Nations, and Wallaby mines in particular hold substantial potential as additional production sources (Pictures 2 and 3).

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Picture 2: First gold pour from Morning Star (2011).

Picture 3: Coarse gold from Rose of Denmark mine



The Norton Gold Mine:

The Norton Gold Mine is located less than 100 km south of the port city of Gladstone, Queensland (Figure 8).



Figure 8: Norton Gold Mine project location.

ML 80035 covers the majority of the historically known gold veins within the Norton gold field. An independent JORC (2012) Mineral Resource estimate was calculated for the Norton Gold Mine to a maximum depth of 150m below surface (Table 8).

Class	Tonnes	Gold (g/t)	Gold (oz)	Silver (g/t)	Silver (oz)
Indicated	107,000	6.2	21,100	15	50,300
Inferred	141,000	3.9	17,700	12	52,600
Total	248,000	4.9	38,800	13	103,000

 Table 8: Norton Mineral Resource, above 2 g/t Au cut-off.

The Mineral Resources included in this announcement were first reported in a report titled "Norton Gold Mine Mineral Resource Estimate" on 15 May 2015 and is available to view on www.mantlemining.com. The company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of

estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

At Norton, gold and silver are contained in high grade, sub-vertical shears, which outcrop at or near the surface. The licence area contains eight significant shear systems, four of which have been previously mined (Figure 9). An internal scoping study was completed forecasting a robust project delivering favourable returns. Mining is proposed to maximum depths of 30 m, similar to the existing 25 m depth at Never Never (Figures 9, 10 and 11).





180	Fram	pton Ch	andler	Little Wonder	Nine Grams	Never N	ever
160			reviously mined	*****		, Current Topograph	iy .
140					Existing Waste	Dump	
120		•				Previ Mi	ously ned
100		Snlav			1 - C	Original lopography	
80		Zones					
60	0006		9100	9200		0300	9400
	730		730	730		730	730

Key Scoping Study inputs, assumptions and outcomes are shown in Table 9.

	Parameter	Assumption or Output
Resource	% in Indicated category	76%
	% in Inferred category	24%
Mine design	Initial mine life	2.5 years
	Mining rate	25 000 tpa ROM
	ROM head grade	6.5 g/t
Gold Recovery	Onsite concentrate	90%
	Toll Treatment	90%
Revenue	Gold recovered	10 340 oz
	Gold price	\$1 500 /oz
Justification	All in sustaining cost (AISC)	\$775 /oz
	NPV (8% discount rate)	\$4.7 million

Table 9: Norton Gold Mine Scoping Study key aspects.

The information discussed in this report that relates to the internal scoping study is extracted from the report entitled "Positive Norton Gold Mine Scoping Study" created on 8 July 2015 and available to view on <u>www.mantlemining.com</u>.

The Scoping Study is based on low-level technical and economic assessments, and is insufficient to support estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised. There is a low level of geological confidence associated with inferred mineral resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised.

The best gold grades in the Frampton and Never Never workings are associated with zones of silicification and quartz that can pinch and swell laterally and vertically within the host structures. The mineralised veins at Norton are known to sub-crop between surface and 5m deep (in bedrock). To define additional potentially economic mineralisation, a trenching program was undertaken. The program was aimed at progressing the understanding of potential grades, subsurface geometry and structural setting of some of the major mineralised veins that are not currently included in the Resource estimate.

Trenching is limited to 1.5 m deep for safety purposes so if bedrock is not encountered by 1.5 m depth this does not necessarily mean that mineralised veins do not exist. Trenches are cut with an excavator 0.6 m wide and between 5 and 30 m long and once uncovered, the veins were sampled by chipping channels along the wall with chisels and crack hammers. Chipping is sometimes done across a broad interval, but often it was targeted where the veins were easily discernible (Pictures 4 and 5).

Picture 4: Typical trench.

Picture 5: Trench sampling.



The results are very encouraging as they show the presence of gold mineralisation in structures where not previously confirmed. The results of the trenching program support the potential for improvement in the Norton project life and economics and provide focus for targeted exploration and resource drilling. Trench locations and the best (greater than 1 g/t per metre basis) trench results are shown in Table 10 along with rock chip grades on Figures 12 and 13.

Trench	From (m)	To (m)	Interval (m)	Au_ppm	Au x m g/t	Ag_ppm	As_ppm
TR15-03	12.5	14	1.5	0.68	1.02	4.8	5390
TR15-03	20.1	20.4	0.3	13.7	4.11	20.8	14400
TR15-03	25.8	25.9	0.1	28.6	2.86	35.6	4620
TR15-03	28	30	2.0	0.97	1.94	1.5	904
TR15-06	3	3.6	0.6	4.45	2.67	4.6	5350
TR15-06	3.4	3.55	0.2	18.15	3.63	28.9	12950
TR15-08	3.6	4.6	1.0	35.6	35.6	163	3450
TR15-11	15	16	1.0	7.59	7.59	35.2	41100
TR15-11	17.9	18	0.1	46	4.6	82.5	15050
TR15-12	0.6	0.7	0.1	50.5	5.05	44.6	29300
TR15-12	1.1	1.9	0.8	3.47	2.78	7.1	12350
TR15-12	1.9	3	1.1	1.62	1.78	1.9	710
TR15-13	11.8	13	1.2	1.65	1.98	4.6	5460
TR15-15	6.2	6.7	0.5	8.13	4.07	10.5	22500
TR15-16	1.6	1.7	0.1	13.7	1.37	22.8	53300
TR15-16	2.7	3	0.3	3.43	1.03	7.2	13700

 Table 10: Norton trenching significant results (>1m g/t)

Figure 12: Trench locations.



Figure 13: Sample grades.

Granite Castle is located 260km west of Townsville and 120km north of Hughenden (Figure 14).



EPM 14179 contains the Granite Castle Mineral Resource, which is contained in a 600m long portion of a near vertically plunging shear. The shear remains open to the east, the west and at depth and the area contains a large swarm of gold-silver mineralised shears exposed at surface semi parallel to the Granite Castle shear (Figures 15, 16 and Table 11).



Figure 15: Tenements on surface geology.

Figure 16: Mineralised shears.

Figure 14: Granite Castle project location.

Table 11: Granite Castle Mineral Resource, above 1 g/t Au cut-off.								
Class	Tonnes	Gold (g/t)	Gold (oz)	Silver (g/t)	Silver (oz)			
Measured	111,000	4.3	15,500	58	205,800			
Indicated	250,000	3.6	28,800	71	567,900			
Inferred	403,000	2.5	32,900	56	727,200			
Total	765,000	3.1	77,200	61	1,500,900			

The information in Table 2 is extracted from the report entitled "Improved Confidence Levels for Granite Castle Resource" created on 28 May 2008 and is available to view on www.mantlemining.com. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The geologic model of the Granite Castle Mineral Resource is relatively simple with the majority extending from surface, subvertically to 150 m depth. Strong IP anomalies were identified on both the Granite Castle and Coronation shears and subsequent drilling confirmed shear-hosted gold mineralisation below these outcrops. It is apparent there is excellent potential to deliver a major expansion of the existing resource by drilling on multiple mineralised shears at shallow depths (Figures 17 and 18).



Figure 17: Granite Castle Resource Geologic model.

Figure 18: IP section with schematic of Granite Castle and Coronation shears.



At Granite Castle, gold is deposited along a series of WNW trending shear zones. Prior drilling programs at the Coronation shear have highlighted that gold is more strongly concentrated near changes in strike of the shear. Close inspection of the areas around shear zone intersections carrying high grades recognised a second set of conjugate shears cutting across the main mineralised shears.

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An important interpretation of these observations is that gold is more strongly concentrated along and around shear zone intersections, where changes in volume and shear strain have influenced fluid flow. As a result, new detailed mapping was undertaken in order to further understand these structural controls (Figure 19).



Figure 19: Structural context of gold mineralisation at Coronation.

Mantle recently undertook a drainage sampling program around a felsic intrusive plug highlighted by recent regional interpretive work. The area has been given the name Oaky and the drainage values returned show a broad area of +1ppb gold anomalism in the southern one-third of the survey area. 1ppb Au values appear to be significant in the context of a regional background of below 0.5ppb Au, and values greater than 10ppb are of definite interest (Figure 20 and Table 12).





Sample	Gold (ppb) ST43	Gold (ppb) ME-MS41	Arsenic (ppm)
112202	5	12.2	0.95
112205	0.4	1	1.27
112214	25	6.8	1.75
112216	0.9	1.8	0.78
112220	0.4	1.1	0.84

Table 12: Best stream sediment sampling results (highlighted on Figure 19).

Field follow-up has yet to be completed to determine the source of this gold anomalism however there are several potential sources. Positive results from follow-up work would be expected to suggest that the entire 12 kilometre length of a major E-W structure within Mantle's tenements shall warrant closer assessment.

A review of Mantle's application for MDL 493 over the Granite Castle Prospect area has resulted in the lodgement of an amended application for a larger tenement area that now covers the entire area of EPM14179. The enlarged MDL application area now covers all of the currently recognised mineralised structures within EPM14179 that have potential to contain additional gold resources (Figure 21).



