



Montero revises high-grade REE resource in the Twiga Zone to 0.47 million tonnes averaging 5.2% LREO5 at the Wigu Hill Rare Earth Project in Tanzania

Toronto, Ontario (August 06, 2013): Montero Mining and Exploration Ltd. (TSX.V: MON) ("Montero") has revised a portion of its initial NI 43-101 compliant Inferred Mineral Resource estimate of 3.3M tonnes at 2.6% LREO5 (Light Rare Earth Oxides) for the Tembo and Twiga Zones (See News Release dated September 12, 2011) on its Wigu Hill Rare Earth Element ("REE") Project. The updated resource estimate is only for the Twiga Zone and is based on data from the initial 15 core boreholes (1,560m) used in the initial resource estimate and new data from infill drilling of 17 boreholes at 25m intervals (986m) completed in 2012. The new data used in the revised Twiga Zone overall resource has outlined a higher grade REE deposit for this zone.

The newly defined high grade REE resource at the Twiga Zone is located on the south-eastern ridge of the Wigu Hill carbonatite complex. **A total Inferred Mineral Resource of 1.9 million tonnes at a grade of 2.7% LREO5 has been estimated from the preliminary and infill drilling of 32 boreholes (2,546m) for the Twiga Zone to a depth of 50m. A sensitivity analysis at a cut-off grade of 3% LREO5 has shown that the Inferred Mineral Resource contains a higher-grade portion consisting of 0.47 million tonnes averaging 5.2% LREO5.** The independent estimate was prepared by AMEC Earth & Environmental Services (UK) Limited (AMEC).

Dr Tony Harwood, President and Chief Executive Officer of Montero commented, "The revised REE resource estimate for the Twiga Zone has defined a higher grade portion consisting of 0.47 million tonnes averaging 5.2% LREO5 to a depth of 50m from surface. The Twiga Zone sits at the base of Wigu Hill close to current infrastructure and roads and could potentially represent an initial starter open pit. Montero is studying this zone with a view to direct shipping of mineral concentrate product for REE refining."

Overview

The carbonatite dikes on the Twiga Zone at Wigu Hill are intruded into fenitized and carbonate altered, well foliated gneisses and amphibolites of the Paleo Proterozoic Usagaran Mountain belt 20km west-south-west of Dar es Salaam. The carbonatites are mainly fresh and coarsely crystalline, consisting of dolomite, lesser calcite and varying amounts of ankerite and are mineralized with bastnaesite, synchisite and minor amounts of monazite. Carbonate alteration and fenitization close to the dikes is intense and weakens with increasing distance away from the intrusives.

The carbonatites have intruded along a conjugate set of fractures within the gneisses. Two principal dike directions have been identified at Twiga, 050° (NE) and 220° (SW). The mineralized carbonatite dikes at the Twiga Zone occur in an area about 340m x 200m in extent. Although some outcropping dikes are evident, the extent and thickness of the intrusives at surface was delineated by trenching. The most continuous dike direction is referred to as the "NE" dike striking at 050° over a distance of over 200m and dipping to the NW at 35° to 50°. The other predominant dike direction is referred as the "SW" dikes that dip steeply to the NE at between 70° to 88°. The widths of the carbonatite dikes vary from a few centimetres to 10m and the continuity of individual dikes is difficult to trace both along strike and in depth.

This review of the rare earth resources at the Twiga Zone was designed specifically to outline the potential for a smaller, higher grade REE resource within the larger deposit. The drillhole and trench database used for the 2011 estimate was updated to incorporate the results for holes TW015 to TW030, and combining an extra 181 assayed samples representing 273.5 m of cored intercepts to support this estimate. This has enabled the Twiga Zone overall resource to be updated independently of the adjacent Tembo Zone.

Full details of the Inferred Mineral Resource estimate for Twiga totaling 1.9Mt grading 2.7% LREO5 is provided in Table 1 (REE grades) and Table 2 (REO grades).

Table 1: Twiga Inferred Mineral Resource estimate – REE grades (Cut-off grade 1% LREO5)

		Principal resource grades (c.90% of contained REE value)					
Domain	Tonnage Mt	LREE5 %	La %	Ce %	Pr %	Nd %	Sm %
1 Twiga NE	1.23	2.00	0.78	0.95	0.07	0.18	0.01
2 Twiga SW	0.70	2.63	1.03	1.25	0.10	0.24	0.01
TOTAL	1.93	2.23	0.87	1.06	0.08	0.20	0.01
		By-product resource grades (greater uncertainty to economic value)					
Domain	Eu ppm	Gd ppm	Tb ppm	Dy ppm	Ho ppm	Er ppm	Tm ppm
1 Twiga NE	26	38	4.1	13	1.7	3.0	0.3
2 Twiga SW	30	41	4.3	13	1.7	3.2	0.4
TOTAL	27	39	4.2	13	1.7	3.1	0.3
		By-product resource grades (greater uncertainty to economic value)				Deleterious elements	
Domain	Yb ppm	Lu ppm	Y ppm	TREE15 %	SrO %	Th ppm	U ppm
1 Twiga NE	1.7	0.3	37	2.01	0.8	83	1.1
2 Twiga SW	1.9	0.3	38	2.64	1.1	67	0.9
TOTAL	1.8	0.3	38	2.24	0.9	78	1.0
Notes:							
<ol style="list-style-type: none"> The effective date for the 2013 estimate is 8 February 2013. The Qualified Person responsible for this resource estimate is Edmund Sides, EurGeol, PGeo. A selective mining unit (SMU) size of 3m by 3m by 3m was assumed when creating the block model. Reported grades are based on consideration of the grades of mineralised material and weakly to non-mineralised wallrock material estimated to fall inside each SMU. The reported Mineral Resource estimates are based on a grade cut-off grade of 1.0% LREO5 (sum of estimated grades of La₂O₃, CeO₂, Pr₆O₁₁, Nd₂O₃ and Sm₂O₃). A minimum value of 0.1 for the estimated carbonatite indicator was also applied (i.e. only blocks considered to contain >10% mineralised material are included in the reported resource totals). The assessment of prospects for economic extraction is based on the estimated grades for the four main light REEs (La, Ce, Pr and Nd) which represented about 90% of the contained value of REEs at the date of estimation. There is greater uncertainty associated with the estimated grades for the other elements reported above due to the low grades of the heavier REEs and the limited quality control information available with which to assess the accuracy of these analyses. Grades for these elements are reported in order to facilitate comparison with other REE deposits. The Mineral Resources for the Twiga deposit have been constrained by an optimised pit shell defined obtained using the following assumptions; slope angles of 50°; a mining recovery of 100% and mining dilution of 0% (already incorporated in the SMUs); a mining cost of USD2.85/t; process operating costs of USD12.0/t; G&A costs of USD 3.0/t material to be processed, with 90% recovery of REOs to a 45% LREO5 bastnaesite concentrate; and a concentrate price of USD10/kg. 							

Table 2: Twiga Inferred Mineral Resource estimate – REO grades (Cut-off grade 1% LREO5)

		Principal resource grades (c.90% of contained REE value)					
Domain	Tonnage Mt	LREO5 %	La ₂ O ₃ %	CeO ₂ %	Pr ₆ O ₁₁ %	Nd ₂ O ₃ %	Sm ₂ O ₃ %
1 Twiga NE	1.23	2.40	0.92	1.17	0.09	0.21	0.01
2 Twiga SW	0.70	3.15	1.21	1.54	0.12	0.27	0.02
TOTAL	1.93	2.67	1.02	1.30	0.10	0.23	0.01
		By-product resource grades (greater uncertainty to economic value)					
Domain	Eu ₂ O ₃ ppm	Gd ₂ O ₃ ppm	Tb ₄ O ₇ ppm	Dy ₂ O ₃ ppm	Ho ₂ O ₃ ppm	Er ₂ O ₃ ppm	Tm ₂ O ₃ ppm
1 Twiga NE	30	44	4.8	15	1.9	3.4	0.3
2 Twiga SW	35	47	5.1	15	1.9	3.7	0.5
TOTAL	31	45	4.9	15	1.9	3.5	0.3
		Additional resource grades (greater uncertainty to economic value)				Deleterious elements	
Domain	Yb ₂ O ₃ ppm	Lu ₂ O ₃ ppm	Y ₂ O ₃ ppm	TREO15 %	SrO %	ThO ₂ ppm	U ₂ O ₃ ppm
1 Twiga NE	1.9	0.3	47.0	2.42	0.8	95	1.3
2 Twiga SW	2.2	0.3	48	3.17	1.1	76	1.1
TOTAL	2.0	0.3	48	2.69	0.9	88	1.2
Notes:							
1 The effective date for the 2013 estimate is 8 February 2013. The Qualified Person responsible for this resource estimate is Edmund Sides, EurGeol, PGeo.							
2 A selective mining unit (SMU) size of 3m by 3m by 3m was assumed when creating the block model.							
3 Reported grades are based on consideration of the grades of mineralised material and weakly to non-mineralised wallrock material estimated to fall inside each SMU.							
4 The reported Mineral Resource estimates are based on a grade cut-off grade of 1.0% LREO5 (sum of estimated grades of La ₂ O ₃ , CeO ₂ , Pr ₆ O ₁₁ , Nd ₂ O ₃ and Sm ₂ O ₃). A minimum value of 0.1 for the estimated carbonatite indicator was also applied (i.e. only blocks considered to contain >10% mineralised material are included in the reported resource totals).							
5 The assessment of prospects for economic extraction is based on the estimated grades for the four main light REEs (La, Ce, Pr and Nd) which represented about 90% of the contained value of REEs at the date of estimation. There is greater uncertainty associated with the estimated grades for the other elements reported above due to the low grades of the heavier REEs and the limited quality control information available with which to assess the accuracy of these analyses. Grades for these elements are reported in order to facilitate comparison with other REE deposits.							
6 The Mineral Resources for the Twiga deposit have been constrained by an optimised pit shell defined obtained using the following assumptions; slope angles of 50°; a mining recovery of 100% and mining dilution of 0% (already incorporated in the SMUs); a mining cost of USD2.85/t; process operating costs of USD12.0/t; G&A costs of USD 3.0/t material to be processed, with 90% recovery of REOs to a 45% LREO5 bastnaesite concentrate; and a concentrate price of USD10/kg.							

A higher-grade, near-surface portion of the Twiga Mineral Resource straddling the “EW” dikes is of particular interest. Based on the updated Mineral Resource estimate for Twiga Zone, AMEC has reassessed the potential of this portion of the Mineral Resource in the following manner:

- Several alternative optimum pit shells were generated using different processing and recovery factors so as to identify ‘high-value’ pits centred on the highest grade near surface mineralisation.
- An initial assessment of the results obtained was carried out in order to identify the appropriate cut-off grade to apply in order to delineate approximately 500,000 tonnes of near surface, higher grade material within the mineral resource. A cut-off grade of 3.0% LREO5 was selected on this basis.

- The selected pit shell was then plotted on sections and plans and summaries of the high grade portion falling inside the selected pit were generated for the Inferred Mineral Resource, and also for the mineralised portion of each block (undiluted estimate of material potentially amenable to pre-concentration).
- Following a review of the initial results it was noted that a portion of the optimum pit went to depths of more than 50 m around drill hole TW014 where there is a zone of mineralisation based on limited information. In order to reduce the uncertainty associated with the estimation of this zone, and to meet likely constraints on the maximum depth for an initial trial open-pit, a revised summary was generated which excluded all blocks which are more than 50 m below surface. Such blocks were identified by checking their location with respect to a wireframe surface generated by projecting the topography vertically downwards by 50 m.

The results obtained in this investigation are presented in Table 2 and indicate that a cut-off grade of 3.0% LREO5 defines a subset of the Inferred Mineral Resource amounting to 0.47 million tonnes averaging 4.4% LREE5 (equivalent to 5.2% LREO5). This is equivalent to an estimated contained rare earth oxide content of approximately 24,400 t LREO5.

Table 3: Twiga SW Sensitivity sub-set of Inferred Mineral Resource
(based on highest value mineralisation using a cut-off grade of 3.0% LREO5, within 50m of surface)

		Principal resource grades (c.90% of contained REE value)					
Domain	Tonnage Mt	LREO5 %	La ₂ O ₃ %	CeO ₂ %	Pr ₆ O ₁₁ %	Nd ₂ O ₃ %	Sm ₂ O ₃ %
1 Twiga NE	0.24	4.65	1.80	2.26	0.17	0.40	0.024
2 Twiga SW	0.22	5.87	2.26	2.87	0.21	0.50	0.030
TOTAL	0.47	5.24	2.02	2.56	0.19	0.45	0.026
		By-product resource grades (greater uncertainty of economic value)					
Domain	Eu ₂ O ₃ ppm	Gd ₂ O ₃ ppm	Tb ₄ O ₇ ppm	Dy ₂ O ₃ ppm	Ho ₂ O ₃ ppm	Er ₂ O ₃ ppm	Tm ₂ O ₃ ppm
1 Twiga NE	52	73	8.0	23	2.9	4.7	0.5
2 Twiga SW	60	81	8.5	23	3.0	5.3	0.6
TOTAL	56	76	8.2	15	2.9	4.9	0.5
		By-product resource grades (greater uncertainty of economic value)				Deleterious elements	
Domain	Yb ₂ O ₃ ppm	Lu ₂ O ₃ ppm	Y ₂ O ₃ ppm	TREO15 %	SrO %	ThO ₂ ppm	U ₂ O ₃ ppm
1 Twiga NE	2.4	0.3	66	4.68	1.4	139	1.5
2 Twiga SW	2.7	0.5	70	5.90	1.4	110	1.4
TOTAL	2.5	0.3	67	5.26	1.4	125	1.5

Using the block estimates of the mineralized indicator variable and the separate block grade estimates for mineralized and unmineralized material, it is estimated that the maximum amount of the Inferred Mineral Resource that would be amenable to pre-concentration is 0.28 million tonnes averaging 7.1% LREE5 (equivalent to 8.5% LREO5). AMEC notes that this is an indicative total based on the resource estimate and represents the maximum upgrading that could be achieved with perfect segregation of mineralized and waste material. Under actual operational conditions it is likely that the practical amount that could be recovered would fall somewhere between these two estimates (subject to the Mineral Resource estimate proving to be a reliable prediction of the actual amounts and grades of the in situ mineralization).

AMEC considers that this high-grade sub-set of the mineral resource forms an appropriate target for assessment during the next stage of the project. More detailed work on open pit design and extraction scheduling is not warranted until more information is available on the likely costs and recoveries for alternative processing options.

In addition to updating the grade estimates for the five light REEs (Ce, La, Nd, Pr and Sm) AMEC also estimated grades for the additional nine heavy REEs and Yttrium, as well as uranium, thorium and strontium. There is greater uncertainty associated with the estimated grades for the HREEs and strontium due to the limited quality control information available with which to assess the accuracy of these analyses as well as the low grades of the HREEs. Grades for these elements are reported in order to facilitate comparison with other REE deposits. Further analytical work is required in order to assess the accuracy of the analyses for these elements.

The assessment of prospects for economic extraction of the reported Mineral Resource for Twiga is based on the estimated grades for the four light REEs (La, Ce, Pr and Nd) which represented about 90% of the contained value of REEs at the date of estimation. In terms of contained value the next most important elements are considered to be Eu, Dy and Gd based on the values reported above; these are likely to be recovered to a mixed REO concentrate and could potentially realize some value. Strontium is also present in varying amounts within the mineralized carbonatites in close association with the rare earth element mineralization; the potential added value of extracting SrO as an additional by-product will be assessed in future metallurgical testwork.

Resource classification

To support an assessment of reasonable prospects for economic extraction, AMEC used a pit shell that was developed to constrain the reported Mineral Resource so as to exclude isolated zones of mineralization which were unlikely to be amenable to economic extraction. The parameters used to develop the resource pit shell were unchanged from the values used for the pit shell used for the 2011 resource estimate, as indicated in footnote 6 at the bottom of Table 1.

Based on considerations of the evaluation database used, geological and grade continuity and economic factors, the reported resource has been classified as an Inferred Mineral Resource.

Risk/opportunity issues

Readers are referred to the previous Technical Report on the initial Mineral Resource estimate for the Twiga and Tembo deposits for a discussion of risks and opportunities associated with the Mineral Resource estimates.

The changes in REO prices over the past two years were assessed during the current resource update and it was considered that the REO mineral concentrate price of USD 10/kg used in the assessment of the resource pit shell was still valid at the time of reporting. Based on early 2013 prices, about 90% of the contained REE value relates to the contained La, Ce, Pr and Nd content and at this stage the assessment of reasonable prospects of eventual economic extraction does not rely on any value attributed to the other elements. Possible additional costs and value associated with the recovery of the other REEs and strontium into concentrates needs to be assessed in future metallurgical testwork. In addition further analytical work is required in order to assess the accuracy of the analyses for the HREEs and strontium which have a lower quality than analyses for the five LREEs.

Thorium and uranium represent deleterious elements which may incur additional processing costs in order to remove them from the REO concentrates and in the handling of radioactive waste products. The contents reported here are relatively low compared with many other REE deposits but their impact on processing costs will need to be assessed in future metallurgical testwork.

Metallurgical processing of the mineralisation to recover saleable rare earth mineral products is identified as one of the main areas of concern for the next stage of the project. The updated resource estimate reported on here provides a suitable basis for guiding metallurgical testwork and for assessing the possibility of trial mining in the next stage of the project. A small open pit could potentially be developed at the Twiga Zone where access is good at the base of Wigu Hill and where high grade bastnaesite-rich carbonatite can be accessed from the surface.

Future work programs

The high grade resource identified at Twiga is being considered as a possible opportunity to provide a REE mineral concentrate produced by mechanical or hand sorting to the market, or with further positive flotation recovery results, a flotation concentrate. Metallurgical testwork on samples from the property are ongoing and Montero has already achieved success in producing samples of saleable product for marketing purposes. The current tonnage itself may appear to be small, however, this resource reflects the potential of only a small near surface fraction of the Wigu Hill Complex. Exploration drilling has identified a more extensive set of carbonatite dikes on the Nyati Target in the central part of the Wigu Hill carbonatite complex where initial drilling has returned positive results (see news release dated: April 10, 2012). Future drilling at the Nyati Target and other targets is envisaged to outline the potential for a larger resource.

Definition of REE Terminology

The sum of the analyses of the five most abundant REEs, namely Ce, La, Nd, Pr, and Sm, is referred to as LREE5 in the tables presented in this press release (and LREO5 for the corresponding sum of the oxide grades). The following oxide formulae were used: CeO₂, La₂O₃, Nd₂O₃, Pr₆O₁₁ and Sm₂O₃; these are based on the compositions used for marketed REOs for which price information is generally quoted. Grades for these five REEs make up over 99% of the REE content at Wigu Hill; the other ten REEs (Eu, Er, Dy, Gd, Ho, Tb, Tm, Lu, Y and Yb) are present in trace amounts only. AMEC notes that due to the lack of certified analytical standards the analytical accuracy for these ten REEs is considered to be of lower quality than for the five light REEs and consequently they are considered by-products and were not relied upon when assessing the prospects of economic extraction of the reported Mineral Resource. [Note: Assay results reported in some previous press releases used the 'laboratory convention' of REE₂O₃ for the REO grades which will give slightly different grades for the oxides of Ce and Pr].

Quality Assurance/Quality Control (QA/QC):

Montero has used blanks, field duplicates and one analytical standard to monitor the sampling and analytical quality. Results to date for the blank and field duplicates show acceptable quality for the main REEs of interest. The standard used was prepared on behalf of Montero using material from Wigu Hill and has certified analytical values for Ce, La, Pr and Sm based on analyses from 16 different laboratories. A review of the QA/QC results was completed by AMEC who concluded that the results for Ce, La, Pr, Nd and Sm were acceptable for use in the assessing the prospects for economic extraction and reporting of an Inferred Mineral Resource.

Qualified Person's Statement

The technical information contained in this press release has been reviewed by Mr. Mike Evans, M.Sc. Pr.Sci.Nat., who is a qualified person for the purpose of National Instrument 43-101 and a consulting geologist to Montero. The independent resource estimate was prepared by AMEC Earth & Environmental Services (UK) Ltd (AMEC) and is reported according to CIM Definition Standards (2010). The Qualified Person responsible for the resource estimate is Edmund Sides, EurGeol, P.Geo. an AMEC employee.

The Wigu Hill Rare Earth Project does not contain a mineral reserve and is not currently in production. Any decision to place the Wigu Hill Rare Earth Project into production requires the support of a feasibility study prepared in accordance with National Instrument 43-101. At this time the Company has completed a series of laboratory and pilot scale testwork, but this does not satisfy the requirements of a feasibility study. Accordingly, any decision to commence production on the Wigu Hill Rare Earth Project is neither imminent nor assured, and investors cannot assume that the Wigu Hill Rare Earth Project hosts an economic mine at this time.

About Montero Mining & Exploration

Montero Mining and Exploration Ltd. is a mineral exploration and development company focused on achieving production of rare earths primarily from its flagship Wigu Hill project in Tanzania. With China's control over rare earth export quotas; it is becoming imperative that the rest of the world develops new rare earth resources to meet the increasing demand from "green" technology and high-tech applications. Montero has a highly experienced Board and Management team that has built and operated mines and refineries in Africa, which brings significant credibility to our strategy of becoming a rare earth producer. In addition to rare earths, Montero has phosphate assets in South Africa and uranium assets in Tanzania and Quebec, Canada for sale or joint venture.

Signed.Dr. Tony Harwood - President and CEO

For more information, contact:

Montero Mining and Exploration Ltd.

Tel: +1 416 840 9197 | Fax: +1 866 688 4671

E-mail: ir@monteromining.com

www.monteromining.com

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