ASX RELEASE

24 JANUARY 2019

SOVEREIGN METALS LIMITED

ASX:SVM

HIGH-GRADE, BROAD & WIDESPREAD RUTILE POTENTIAL DEMONSTRATED IN MALAWI

Sovereign Metals Limited ("the Company" or "Sovereign") is pleased to report that re-assaying of historical hand-auger holes has demonstrated **high-grade rutile mineralisation** hosted in free dig, near surface saprolite material across the Company's 100%-owned central Malawi exploration licences. The potential to produce rutile from the soft saprolite via a simple process flowsheet using typical mineral sands separation methods was demonstrated during 2018 laboratory test work.

Sovereign's Managing Director Dr Julian Stephens commented, "Sovereign is focused on developing the world-class, low-cost flake graphite operation at Malingunde with the 50t pilot plant work set to commence shortly as we ramp-up DFS activities. This discovery of large areas of high-grade TiO_2 suggests the potential also for significant rutile deposits within Sovereign's large ground holding. Given the currently strong fundamentals of the titanium feedstock market, the Company intends to undertake further exploration and metallurgical studies to advance this potential rutile opportunity."

HIGHLIGHTS:

- A broad regional spread of 125 historical hand-auger drill holes were selected for re-assay to assess the overall rutile potential across Sovereign's large tenement holding in Malawi.
- Results demonstrate that rutile mineralisation is likely to be present over vast areas and is hosted in soft, "free-dig" saprolite.
- Previous 2018 mineralogical and sighter metallurgical test-work on bulk samples from Malingunde demonstrated:
  - Rutile as the dominant TiO_2 mineral, with lesser leucoxene
  - Rutile in concentrates generally present as discrete, clean and liberated grains
  - The ability to produce rutile concentrates using typical mineral sands processing methods
- Highlights of the 125 shallow hand-auger holes selected for re-assay include:
  - **26 holes (21%)** have a weighted average grade of **2.34% TiO_2** (2.0% TiO_2 lower cut-off).
  - **96 holes (78%)** have a weighted average grade of **1.89% TiO_2** (1.5% TiO_2 lower cut-off).
- Examples of best holes from the broader Malingunde and Lifidzi areas are listed below (see also Appendix 1) with all intercepts being from surface and remaining open at depth:

Malingunde:	***9m @ 3.29% TiO_2***	***10m @ 3.02% TiO_2***	***12m @ 2.39% TiO_2***	***11m @ 2.34% TiO_2***
	10m @ 2.31% TiO_2	***10m @ 2.29% TiO_2***	***9m @ 2.14% TiO_2***	***12m @ 2.06% TiO_2***
Lifidzi:	***10m @ 2.94% TiO_2***	***7m @ 2.62% TiO_2***	***5m @ 2.49% TiO_2***	***7m @ 2.37% TiO_2***
	7m @ 2.25% TiO_2	***10m @ 2.24% TiO_2***	***7m @ 2.19% TiO_2***	***9m @ 2.17% TiO_2***

- Mineralogical and metallurgical test-work is required in order to ascertain mineralogy of regional samples and further optimise the flowsheet to improve rutile recoveries and concentrate grades.
- A work program to further assess the scale, grade and rutile recoverability of prospects and to generate new targets across the Company's substantial ground position is to commence shortly.

ENQUIRIES
+618 9322 6322

Dr Julian Stephens – Managing Director
Sam Cordin – Business Development Manager

BACKGROUND

In 2018, Sovereign reported that it had successfully recovered rutile concentrates from tailings at the Malingunde graphite project (ASX announcement 14th August 2018). This work showed rutile was the dominant TiO_2 mineral, with lesser leucoxene. Rutile in concentrates was shown to be generally present as discrete, clean and liberated grains (Figure 1). Overall, this program demonstrated the ability to produce rutile concentrates from the soft saprolite material using typical mineral sands processing methods.

The initial sighter mineralogy and metallurgical program showed that grades of 0.86% TiO_2 recovered to concentrate were achieved at a recovery of 58% from an initial sample grading 1.49% TiO_2. The concentrates produced during the test-work ranged between 78% and 90% TiO_2.

The encouraging 2018 mineralogy and metallurgy results encouraged the Company to review its historical exploration samples in order to assess the possibility that rutile may be more widespread across its large ground holding in central Malawi.

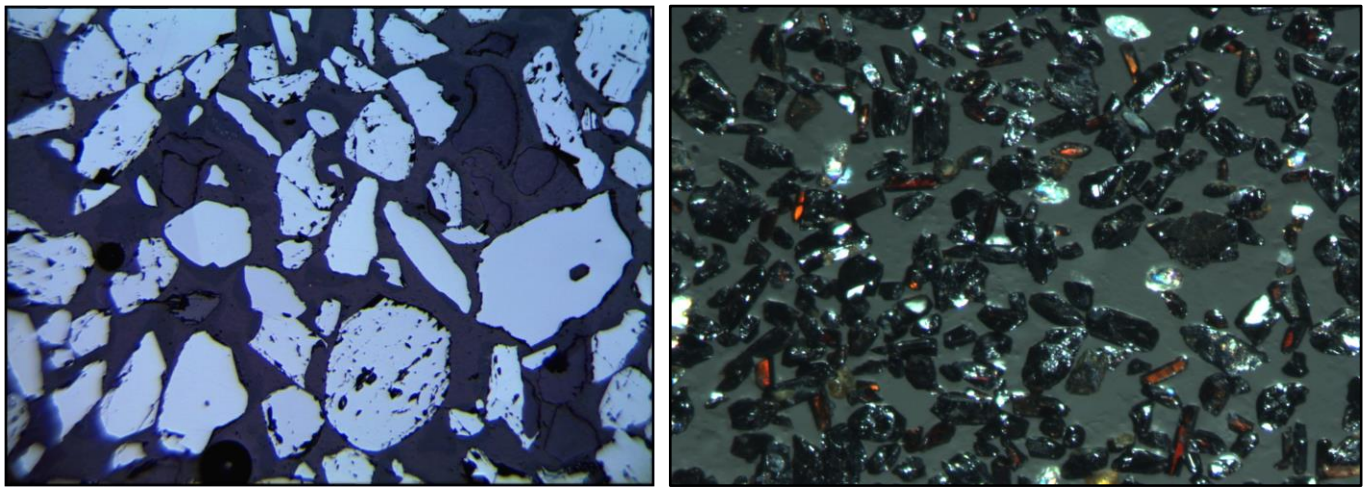

Figure 1(a) - left. Coarse rutile grains in thin section of concentrate mounted in resin. Field of view is about 1.2mm across.

Figure 1(b) - right. Rutile concentrate image taken under binocular microscope. Field of view is approximately 2.0mm across.

RUTILE EXPLORATION

The positive 2018 mineralogical and metallurgical results encouraged the Company to conduct a larger, regional assessment of the rutile potential across its substantial ~3,993km^2 ground holding in central Malawi.

A combined total of 125 historical hand-auger holes, between 3m and 12m in depth and initially drilled for graphite were selected from two broad areas for re-assay;

- Across the broader Malingunde area and mainly outside the main graphite deposit area
- Across the broader Lifidzi area, some 40km to the south-east of Malingunde

Overall, the TiO_2 chemical assay results exceeded the Company's expectations. Much higher TiO_2 values than occurred in the initial metallurgical and assay samples from Malingunde in 2018 were returned, over large areas. Of a total 125 hand-auger holes assayed, 26 holes (21%) average 2.34% TiO_2 using a 2.0% lower cut and 96 holes (78%) average 1.89% TiO_2 using a 1.5% lower cut.

At the broader Malingunde area, a zone of approximately 7km strike by 1.5km lateral width of near surface, high-grade TiO_2 (as likely dominantly rutile ± leucoxene) mineralisation has been identified. This zone is open to the north-west and south-east along strike, and open laterally to the north-east. TiO_2 is shown to occur throughout the saprolite profile and is open at depth. Results also show significant enrichment in the top 2-3m of the weathering profile (Figure 2). Highlights include;

9m @ 3.29% TiO_2 ***10m @ 3.02% TiO_2*** ***12m @ 2.39% TiO_2*** ***11m @ 2.34% TiO_2***
10m @ 2.31% TiO_2 ***10m @ 2.29% TiO_2*** ***9m @ 2.14% TiO_2*** ***12m @ 2.06% TiO_2***

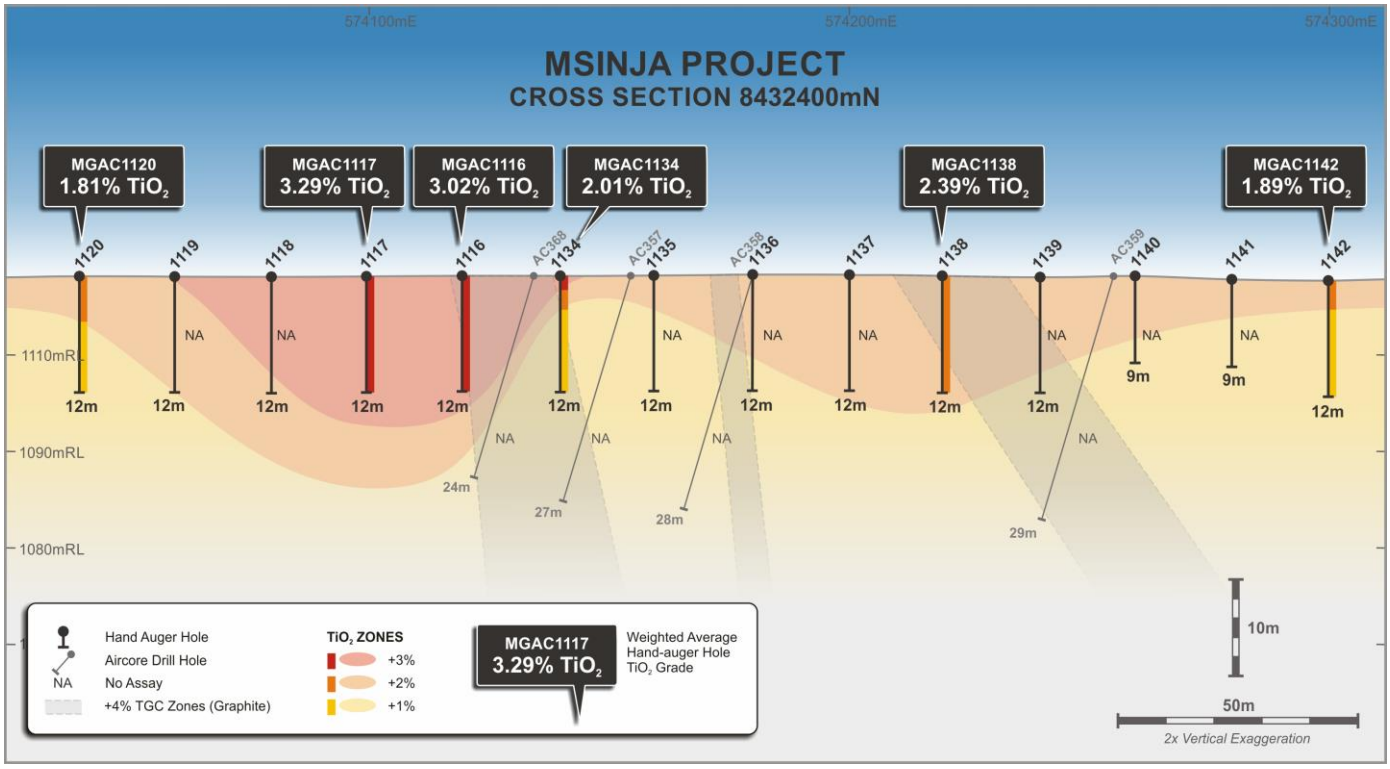

Figure 2. Cross-section from Msinja deposit (the southern extension of Malingunde) showing high grade TiO_2 zones – assumed to be mostly rutile with lesser leucoxene – within the near surface, soft saprolite zone.

At the Lifidzi area three separate zones were re-assayed and resulted in 0.5km, 1.2km and 2.0km across strike widths of high grade TiO_2 being identified (Figure 3). All of these zones remain generally open in all directions along strike and laterally across strike. No mineralogy or metallurgy has yet been undertaken on the Lifidzi samples, however, the geology is broadly the same as at Malingunde, so rutile as the dominant TiO_2 mineral is considered likely. Hand-auger assay highlights include;

10m @ 2.94% TiO_2 ***7m @ 2.62% TiO_2*** ***5m @ 2.49% TiO_2*** ***7m @ 2.37% TiO_2***
7m @ 2.25% TiO_2 ***10m @ 2.24% TiO_2*** ***7m @ 2.19% TiO_2*** ***9m @ 2.17% TiO_2***

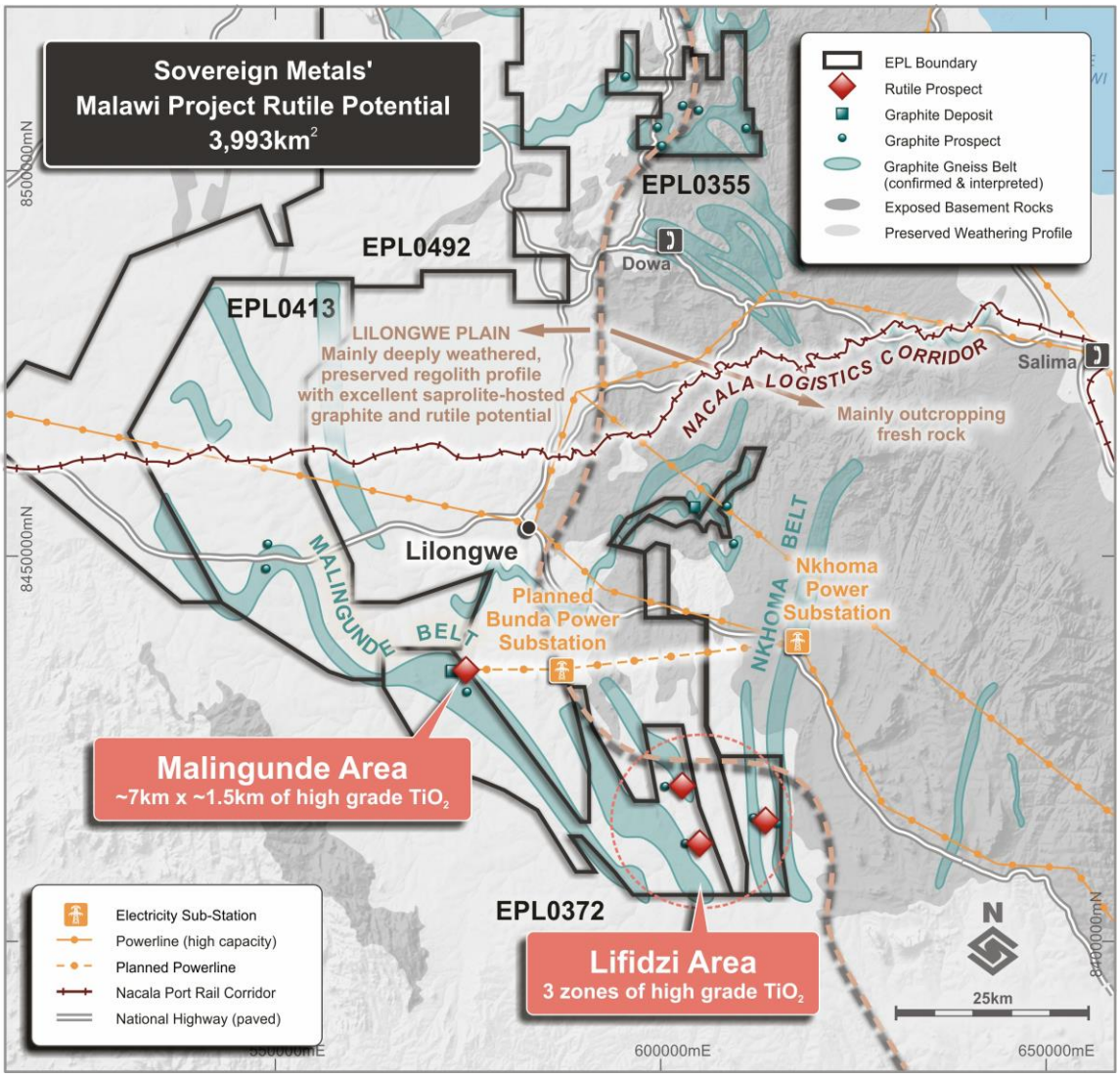

Figure 3. Map showing regionally extensive areas with high-grade TiO_2 – assumed to be mostly rutile ± leucoxene - at Malingunde and Lifidzi.

CONCLUSION AND NEXT STEPS

Sovereign has identified high-grade TiO_2 mineralisation, as rutile with lesser leucoxene, over large areas within its 100%-owned Malawi ground holdings. Important points include:

- Rutile occurs in soft, free-dig saprolite down to at least 12m and remains open at depth in all holes. Rutile is particularly enriched in the upper 2-3m of the weathering profile
- Rutile mineralisation shows no discernible chemical, spatial or geological relationship to graphite, other than its occurrence in the same broad package of paragneiss rocks
- Rutile has been recovered from soft saprolite into concentrates using a standard mineral sands processing flowsheet

Next steps include:

- Commencement of additional mineralogical and metallurgical test-work on samples from each of the significant mineralised areas to assess mineralogy, recoverable rutile percentages, improve concentrate grades and further develop the flowsheet
- Further analyses of historical drill samples to expand areas of known rutile mineralisation
- Regional hand-auger drilling to attempt to delineate an initial rutile resource, if warranted, and further understand the regional distribution of this high-value mineral

The rutile exploration and test-work program will run in parallel with the DFS (definitive feasibility study) on the Malingunde graphite project. The Company will update the market on the DFS progress in the December 2018 Quarterly Activities report to be lodged prior to the end of January 2019.

Note: Rutile has been determined to be the major TiO_2-bearing mineral at and around the Malingunde deposit area through mineralogy and sighter metallurgy test-work reported in 2018. No mineralogical or metallurgical work has yet been conducted on the high TiO_2-bearing areas identified at Lifidzi and at the southern extension of Malingunde (Msinja). The near-identical geological setting of these areas to Malingunde suggests that rutile would also be the major TiO_2-bearing phase in these newly identified prospect areas. However, mineralogy and metallurgical test-work on samples from these areas is required to confirm this assumption.

RUTILE

Commercial titanium dioxide products; natural rutile (TiO_2 93%-97%), leucoxene (TiO_2 70%-93%) and ilmenite (TiO_2 48%-64%) are the principal feedstocks for pigment production. Titanium pigments are used for the manufacture of paints, coatings and plastics. Titanium dioxide products are also used in specialist applications including welding electrodes, commercial aerospace and military applications.

Natural rutile is a highly sought after, high grade titanium feed source currently selling for approximately US$1,000 per tonne and projected to reach long term pricing of US$1,250/tonne (FOB) by 2019[1]. Leucoxene (TiO_2 70%-93%) is priced at a discount to the prevailing rutile price, generally based on TiO_2 content.

Natural rutile is the highest quality and best source of titanium feedstock for manufacturing TiO_2 pigment and producing titanium metal. According to the world's largest rutile producer, Iluka Resources, supplies of natural rutile are in structural deficit.[2]

For reference, Sierra Rutile Limited, which is owned by Iluka, produces rutile as its primary product from Sierra Leone at a reserve grade of ~1.3% with an overall resource grade of ~1.0% rutile.

Competent Persons' Statements

The information in this report that relates to Exploration Results is based on information compiled by Dr Julian Stephens, a Competent Person who is a member of the Australian Institute of Geoscientists (AIG). Dr Stephens is the Managing Director of Sovereign Metals Limited and a holder of shares, options and performance rights in Sovereign Metals Limited. Dr Stephens has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken, 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'. Dr Stephens consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Metallurgical Results is extracted from an announcement on 14 August 2018. This announcement is available to view on www.sovereignmetals.com.au. The information in the original announcement that related to Metallurgical Results was based on, and fairly represents, information compiled by Mr Gavin Diener, a Competent Person who is a member of the AusIMM. Mr Diener is the Chief Operating Officer of TZMI, an independent mineral sands consulting company and is not a holder of any equity type in Sovereign Metals Limited. Mr Diener has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken, 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'. 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. 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.

Forward Looking Statement

This release may include forward-looking statements, which may be identified by words such as "expects", "anticipates", "believes", "projects", "plans", and similar expressions. These forward-looking statements are based on Sovereign's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Sovereign, which could cause actual results to differ materially from such statements. There can be no assurance that forward-looking statements will prove to be correct. Sovereign makes no undertaking to subsequently update or revise the forward-looking statements made in this release, to reflect the circumstances or events after the date of that release.

References

[1]Credit Suisse 2017. Mineral Sands Forecast – Research Analyst Matthew Hope.

[2] https://www.fnarena.com/index.php/2018/01/30/2018-looks-bright-for-iluka-resources/

Appendix 1: Table of Hand Auger Chemical TiO_2 Results (MG = Malingunde, LF = Lifidzi)

Hole ID	Easting	Northing	Hand Auger Hole Depth (m)	Length Sampled (m)	Weighted Average TiO_2 (%)	Peak TiO_2 (%)
LFHA0003	614295	8417496	7	2	1.90	1.90
LFHA0008	614685	8417500	9	4	2.22	2.22
LFHA0009	615175	8417500	7	2	1.67	1.67
LFHA0033	615135	8417500	7	7	1.95	1.95
LFHA0035	615194	8417498	8	8	1.60	1.60
LFHA0036	615215	8417500	7	7	2.37	2.94
LFHA0037	615234	8417498	8	8	1.76	2.52
LFHA0038	615255	8417499	8	8	1.98	2.68
LFHA0039	615275	8417501	10	10	2.24	2.96
LFHA0040	614235	8417500	9	9	2.17	3.09
LFHA0041	614255	8417499	10	10	2.94	3.24
LFHA0042	614315	8417500	10	10	1.79	2.78
LFHA0043	601225	8417500	8	8	1.69	2.36
LFHA0044	601245	8417500	8	8	1.92	2.69
LFHA0046	601205	8417500	9	9	1.91	2.44
LFHA0047	601185	8417500	8	8	1.51	2.22
LFHA0050	600915	8417500	8	8	1.53	1.95
LFHA0052	600835	8417500	8	8	1.61	1.92
LFHA0054	600645	8417500	4	4	2.08	2.24
LFHA0057	600585	8417500	8	8	1.73	1.82
LFHA0058	599875	8417500	5	5	2.49	2.49
LFHA0063	599525	8417498	7	7	2.19	2.19
LFHA0070	598291	8410000	6	6	1.71	1.75
LFHA0071	598350	8409996	8	8	1.46	1.81
LFHA0074	598561	8410000	3	3	1.83	1.83
LFHA0075	598580	8410000	3	3	2.03	2.03
LFHA0076	598600	8410000	3	3	2.19	2.19
LFHA0077	598620	8410001	3	3	1.92	1.92
LFHA0079	598833	8410001	7	7	2.14	2.14
LFHA0080	598850	8410000	8	8	1.60	1.85
LFHA0081	598870	8409999	7	7	1.85	2.19
LFHA0082	598889	8410003	7	7	1.77	2.27
LFHA0085	599931	8410000	8	8	1.57	1.96
LFHA0086	599990	8409999	6	6	1.36	1.91
LFHA0088	595925	8410000	6	6	1.60	1.60
LFHA0135	609740	8417500	4	4	1.60	1.60
LFHA0140	609880	8417500	3	3	1.44	1.44
LFHA0143	610180	8417500	6	6	1.60	2.04
LFHA0144	610200	8417500	5	5	1.65	2.31
LFHA0145	610160	8417500	6	6	1.32	1.47
LFHA0146	610220	8417500	8	8	1.78	2.25
LFHA0149	611495	8417500	7	7	2.25	2.25
LFHA0441	600704	8417500	10	10	1.61	1.97
LFHA0623	609760	8419000	8	8	1.68	1.99
LFHA0625	609800	8419000	10	10	1.85	1.92
LFHA0630	609900	8419000	6	10	1.18	1.74
LFHA0631	609920	8419000	7	7	1.72	2.29
LFHA0632	609940	8419000	7	7	2.62	2.86
MGHA0087	570380	8436001	10	1	1.45	1.45
MGHA0097	571781	8436000	8	7	1.48	1.55
MGHA0100	571913	8436002	10	6	1.65	1.71
MGHA0124	571640	8436403	9	2	1.61	1.61
MGHA0126	571720	8436404	12	4	1.77	2.00
MGHA0228	571460	8436401	12	7	1.98	2.15
MGHA0231	571382	8436402	12	10	1.75	1.88
MGHA0232	571362	8436402	12	10	1.80	2.06
MGHA0235	571302	8436400	12	7	1.50	1.74
MGHA0240	571201	8436401	12	10	1.80	2.66
MGHA0241	571182	8436401	10	8	1.90	2.07
MGHA0242	571161	8436401	12	10	1.49	1.62
MGHA0243	571121	8436400	12	10	2.31	2.57
MGHA0248	571140	8436402	12	9	2.14	2.66
MGHA0249	571100	8436401	12	9	1.62	1.76
MGHA0563	573880	8432998	12	10	1.68	1.90

Hole ID	Easting	Northing	Hand Auger Hole Depth (m)	Length Sampled (m)	Weighted Average TiO_2 (%)	Peak TiO_2 (%)
MGHA0564	573840	8432997	12	12	2.06	2.44
MGHA0580	573858	8433000	11	11	2.34	3.05
MGHA0581	573817	8433000	12	12	1.98	2.58
MGHA0583	573740	8432998	12	12	1.67	1.76
MGHA0586	573620	8433000	10	6	1.08	1.10
MGHA0587	573940	8433000	12	9	1.83	2.03
MGHA0588	573980	8433000	12	4	2.03	2.04
MGHA0590	574060	8432999	8	7	1.40	1.61
MGHA0591	574300	8433000	12	7	1.53	1.56
MGHA0652	570442	8437600	7	6	1.97	2.32
MGHA0702	570421	8434801	8	6	1.72	1.72
MGHA0706	570560	8434800	8	3	1.41	1.41
MGHA0718	570139	8434800	7	5	1.59	1.67
MGHA0737	568400	8436800	10	10	1.35	1.37
MGHA0765	569420	8436800	10	4	1.26	1.26
MGHA0773	568961	8436800	8	2	1.68	1.68
MGHA0781	568520	8436800	7	5	1.41	1.49
MGHA0787	568260	8436800	7	4	1.49	1.49
MGHA0913	572037	8436400	12	12	1.75	1.84
MGHA0923	571546	8436003	10	5	1.93	1.93
MGHA0929	572661	8435998	10	10	1.58	2.07
MGHA0931	572541	8436000	12	11	1.75	2.24
MGHA0935	572461	8436000	11	11	1.91	2.17
MGHA0943	572720	8435998	10	10	1.66	2.26
MGHA0947	572801	8435998	12	12	1.66	2.56
MGHA0966	572299	8436401	12	11	1.63	2.15
MGHA0967	572319	8436401	12	10	2.29	3.99
MGHA0968	572339	8436400	11	9	1.95	2.36
MGHA0975	572199	8436401	10	7	1.52	1.86
MGHA0977	572419	8436400	12	12	1.95	2.54
MGHA0978	572440	8436400	12	11	1.64	2.40
MGHA1015	571339	8437500	10	9	0.90	1.51
MGHA1020	571241	8437503	10	9	1.27	1.59
MGHA1024	571161	8437500	6	6	1.04	1.61
MGHA1030	571037	8437501	8	6	1.45	1.55
MGHA1033	570500	8436401	12	12	1.56	2.13
MGHA1042	570940	8437500	3	3	1.79	1.88
MGHA1043	571399	8437501	5	5	1.36	1.56
MGHA1046	571461	8437481	9	9	1.24	1.53
MGHA1063	570380	8436401	12	12	1.41	1.91
MGHA1067	570940	8435897	5	3	1.37	1.70
MGHA1071	570840	8435897	12	12	1.56	2.81
MGHA1106	574060	8432800	12	12	1.63	2.29
MGHA1113	574200	8432800	11	9	1.31	2.02
MGHA1116	574120	8432400	12	10	3.02	3.78
MGHA1117	574100	8432400	12	9	3.29	3.43
MGHA1120	574040	8432401	12	12	1.81	2.57
MGHA1123	573980	8432400	12	9	1.33	1.44
MGHA1127	573901	8432400	12	12	1.60	2.33
MGHA1131	573820	8432400	12	12	1.45	2.23
MGHA1134	574140	8432400	12	10	2.01	3.02
MGHA1138	574220	8432400	12	12	2.39	3.50
MGHA1142	574300	8432400	12	10	1.89	2.28
MGHA1268	569480	8439200	7	7	1.45	2.16
MGHA1352	570737	8437398	5	5	1.42	1.81
MGHA1377	571518	8436398	12	12	2.06	3.18
MGHA1385	572008	8435997	12	11	1.93	2.39
MGHA1542	570200	8437600	9	9	1.86	2.05
MGHA1545	570320	8437600	8	8	2.00	2.11

Appendix 2: JORC Code, 2012 Edition – Table 1

SECTION 1 - SAMPLING TECHNIQUES AND DATA

Criteria	JORC Code explanation	Hand Auger Drilling Commentary
Sampling Techniques	*Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	Hand augers of 62mm diameter were employed to obtain samples vertically from surface at nominal 1-metre intervals, with samples composited on geologically determined intervals. Composite samples were riffle split at 50:50 using a standard Jones riffle splitter. One sample was submitted for chemical analysis while the other sample was retained and stored.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Field duplicate splits were performed every 20th sample on average to provide checks on the representativeness of the primary samples.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Weathering and lithological information logged from the 1-metre auger sample is used to define the compositing intervals of samples for each individual hole. Position in the weathering profile is the main control on sample intervals.
Drilling Techniques	*Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	62mm diameter auger bits are used with 1-metre long steel rods. Each 1m of auger drill advance sample is collected into separate bulk sample bags and set aside. The auger bits and flights are cleaned between each metre of sampling to avoid contamination.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Samples are assessed visually for recoveries. Overall, recovery is very good.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	The company's trained geologists supervise auger drilling on a 1 team : 1 geologist basis and are responsible for monitoring all aspects of the drilling and sampling process.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No bias related to preferential loss or gain of different materials has occurred.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation mining studies and metallurgical studies.*	All individual 1-metre auger intervals are geologically logged, recording relevant data to a set template using company codes. A small representative sample is collected for each 1m interval and placed in appropriately labelled chip tray for future reference.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All logging includes lithological features, and estimates of graphite mineralisation percentages and flake characteristics.
	The total length and percentage of the relevant intersection logged	100% of the samples are geologically logged.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	Not applicable – not core drilling
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	1-metre samples are composited on geological intervals and then riffle split at 50:50 using a standard Jones riffle splitter. Wet samples are first air dried on large metal trays and then broken up using a mortar and pestle prior to compositing or splitting.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Sample preparation is conducted at the laboratory in Johannesburg. Each entire sample is crushed to nominal 100% -3mm in a Boyd crusher then pulverised to 85% -75µm in a LM5. Approximately 100g pulp is collected and sent to Intertek-Genalysis Perth for chemical analysis.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Field QC procedures involve the use of certified reference material assay standards, blanks, duplicates, replicates for company QC measures, and laboratory standards, replicate assaying and barren washes for laboratory QC measures. The insertion rate of each of these averaged better than 1 in 20.
	Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.	1 in 20 field duplicate splits (a second sample split from the same interval) were taken to assess sampling variability and representativeness. A review of these samples against the original samples has shown that sampling variability is low.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample size is considered appropriate for the material sampled. It is believed that grain size has no bearing on the grade of the sampled material.

Criteria	JORC Code explanation	Hand Auger Drilling Commentary
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	The assaying and laboratory procedures are considered to be appropriate for reporting chemical TiO2 values. Further work is required in order to develop methods to accurately estimate rutile content from routine exploration samples. Each entire sample was crushed to nominally 100% -3mm in a Boyd crusher then pulverised to 85% -75µm. Approximately 100g pulp is collected for analysis at Intertek-Genalysis Perth. Samples are analysed by Intertek-Genalysis using their FB1/XRF30 digest fusion with Li borate flux mixture and XRF analysis described below. Approximately 0.7g of pulp is catch weighed into a platinum crucible and this is mixed with a weighed amount of flux which is comprised of a mixture of lithium tetraborate and lithium metaborate. An oxidant is added and the sample is fused to produce a homogeneous melt which is cast into a platinum mould to produce a fusion disk. The fusion disk is analysed on a sequential or simultaneous X-ray fluorescence spectrometer. Calibration is effected by standard glass beads of known composition. Corrections are made for the catch weights, instrumental drift, line overlaps and inter element enhancement / absorption effects as well as moisture.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No non-laboratory devices were used for analysis.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicate, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Field QC procedures involve the use of certified reference material assay standards, blanks, duplicates, replicates for company QC measures, and laboratory standards, replicate assaying and barren washes for laboratory QC measures. The insertion rate of each of these averaged better than 1 in 20.
Verification of sampling & assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant mineralisation intersections were verified by qualified, alternative company personnel.
	The use of twinned holes.	No twinning of auger holes has occurred at this early stage of rutile exploration.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	All data was collected initially on paper logging sheets and codified to the Company's templates. This data was hand entered to spreadsheets and validated by Company geologists. This data was then imported to a Microsoft Access Database then validated automatically and manually.
	Discuss any adjustment to assay data.	No assay adjustment has occurred.
Location of data points	*Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	A Trimble R2 Differential GPS was used to pick up the bulk of the hand auger collars containing significant mineralisation. A smaller number of samples were surveyed using a standard hand held GPS. No downhole surveying of auger holes is completed. Given the vertical nature and shallow depths of the auger holes drill hole deviation is not considered to significantly affect the downhole location of samples.
	Specification of the grid system used.	WGS84 UTM Zone 36 South
	Quality and adequacy of topographic control.	DGPS pickups are considered adequate topographic control (metres above mean sea level)
Data spacing & distribution	*Data spacing for reporting of Exploration Results.*	Variable and wide spaced auger hols have been used for this initial stage of rutile exploration.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Not applicable, no Mineral Resource or Ore Reserve estimations are covered by new data in this report.
	Whether sample compositing has been applied.	Individual 1-metre auger intervals are composited on geologically determined intervals that average 2-3 metres.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known considering the deposit type*	No bias attributable to orientation of sampling has been identified.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	No bias attributable to orientation of drilling has been identified.
Sample security	*The measures taken to ensure sample security*	Samples were stored in secure storage from the time of drilling, through gathering and splitting. The samples were sealed as soon as splitting was completed, and again securely stored awaiting shipment.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data*	It is considered by the Company that industry best practice methods have been employed at all stages of the exploration.

SECTION 2 - REPORTING OF EXPLORATION RESULTS

Criteria	Explanation	Commentary
Mineral tenement & land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environment settings.*	The Company owns 100% of 5 Exclusive Prospecting Licences (EPLs) in Malawi. EPL0355 renewed in 2017 for 2 years, EPL0372 renewed in 2018 for 2 years and EPL0413 renewed in 2017 for 2 years. EPL0492 and EPL0528 were granted in 2018 for an initial period of three years (renewable).
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The tenements are in good standing and no known impediments to exploration or mining exist.
Exploration done by other parties	*Acknowledgement and appraisal of exploration by other parties.*	No other parties were involved in exploration.
Geology	*Deposit type, geological setting and style of mineralisation*	The rutile-leucoxene mineralisation occurs within a broad Proterozoic paragneiss package in central Malawi. In the Malingunde and Lifidzi areas specifically, a deep tropical weathering profile is preserved. This has apparently resulted in concentration of the heavy titanium minerals rutile and leucoxene in the upper zones of the weathering profile. The rutile deposit type could be termed residual. Rutile occurs in a topographically flat area west of Malawi's capital known as the Lilongwe Plain where a deep tropical weathering profile is preserved. A typical profile from top to base is generally soil ("SOIL" 0-1m) ferruginous pedolith ("FERP", 1-4m), mottled zone ("MOTT", 4-7m), pallid saprolite ("PSAP", 7-9m), saprolite ("SAPL", 9-25m), saprock ("SAPR", 25-35m) and fresh rock ("FRESH" >35m).
Drill hole information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: easting and northings of the drill hole collar; elevation or RL (Reduced Level-elevation above sea level in metres of the drill hole collar); dip and azimuth of the hole; down hole length and interception depth; and hole length*	All information is presented in Table 1 within the text of this report.
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case	No information has been excluded.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high-grades) and cut-off grades are usually Material and should be stated.*	Weighted average TiO_2 grades are reported at a 0% lower cut-off. Statistics using different cut-off grades are provided with the text of the report. No upper cuts were used.
	Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	Intercepts are reported as entire hand auger hole lengths at 0% TiO_2 lower cut-off.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalent values are used in this report.
Relationship between mineralisation widths & intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	It is considered that the mineralisation lies in laterally extensive, near surface, flat "blanket" style bodies in areas where the entire weathering profile is preserved and not significantly eroded.
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	

Criteria	Explanation	Commentary
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known'.	Downhole widths approximate true widths, though all intercepts remain open at depth.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of the drill collar locations and appropriate sectional views.*	Refer to figures in the body of this report.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high-grades and/or widths should be practiced to avoid misleading reporting of exploration results.*	All results have been reported in this report.
Other substantive exploration data	*Other exploration data, if meaningful and material, should be reported including (but not limited to: geological observations; geophysical survey results; geochemical survey results; bulk samples - size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	Rutile has been determined to be the major TiO_2-bearing mineral at and around the Malingunde graphite deposit area through mineralogy and sighter metallurgy test-work reported in 2018. No mineralogical or metallurgical work has yet been conducted on the high TiO_2-bearing areas identified at Lifidzi and at the southern extension of Malingunde (Msinja). The identical geological setting of these areas to Malingunde suggests that rutile would also be the major TiO_2-bearing phase in these newly identified prospect areas. However, mineralogy and metallurgical test-work on samples from these areas is required to confirm this assumption.
Further work	*The nature and scale of planned further work (e.g. test for lateral extensions or depth extensions or large-scale step-out drilling).*	Commencement of additional mineralogical and metallurgical test-work on samples from each of the significant mineralised areas to assess mineralogy, recoverable rutile percentages, improve concentrate grades and further develop the flowsheet. Further analyses of historical drill samples to expand areas of known rutile mineralisation. Regional hand-auger drilling to attempt to delineate an initial rutile resource, if warranted, and further understand the regional distribution of this high-value mineral.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Refer to diagrams in the body of this report.