24 February 2022

SEMBEHUN ORE RESERVE AND MINERAL RESOURCE UPDATE, SIERRA LEONE

Iluka Resources Limited (Iluka) announces an update for the Mineral Resource and Ore Reserve at Sembehun, the flagship development project at Sierra Rutile Limited (SRL). The Sembehun project, located 30km north-west of SRL's existing Area 1 operations in Sierra Leone, is one of the largest known natural rutile deposits in the world.

The Sembehun Ore Reserve and Mineral Resource update follows a significant programme of exploration and resource estimation over the period 2019-2021.

Key features of the Mineral Resource and Ore Reserve update include:

- An increase in the Mineral Resource of approximately 0.5Mt of rutile, to 5.5Mt of rutile in 508Mt of Mineral Resources @ 1.1% in situ rutile for the Sembehun Group Deposits, including Benduma, Dodo, Gbap, Kamatipa, Kibi and Komende.
    - An improved level of confidence in the Mineral Resource, with 34% of the rutile now classified as Measured.
- A decrease in the Ore Reserve from 222Mt to 174Mt; and an increase in rutile grade from 1.24% to 1.46%, equating to a 22% reduction in tonnage and an 8% reduction in rutile, reflecting changes to the Mineral Resource, the level of confidence in geological interpretation and updated modifying factors.
    - Increased confidence in the Ore Reserve with 110.5Mt of Proved Ore Reserves (with the delineation of Measured Mineral Resources).

As a result of this update, the combined Measured and Indicated Mineral Resource for the Sembehun Group Deposits is now 301Mt grading 1.2% rutile, compared to the previous estimate of 347Mt grading 1.1% rutile as reported on 16 August 2018. This results in a 13% reduction in the tonnage of the Measured and Indicated Resource; but only a 2% decrease in the contained rutile, reflecting the improved Resource definition.

This document was approved and authorised for release to the market by Iluka's Managing Director.

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Overview

The Sembehun Area Deposits are situated to the north-west of Iluka's existing Area 1 operations within Sierra Leone (see Figure 1).

As at 31 December 2020, the rutile Mineral Resources for Iluka's Sierra Leone Deposits comprised 7.9Mt of rutile hosted in 715Mt of Measured, Indicated and Inferred Mineral Resources grading 1.1% rutile (refer to Iluka's 2020 Annual Report, released 24 February 2021) of which 65% of the contained rutile is attributable to the Sembehun Deposits.

Following recent drilling and sampling activities, the Sembehun Area Mineral Resources have been updated, resulting in an increase of approximately 0.5Mt of rutile and an associated improvement in the confidence of the Resource, with 34% of the contained rutile now classified as Measured.

An update to the Sembehun Deposit Ore Reserves has also been completed, resulting in an increase in rutile grade to 1.46% from 1.24%. Total Ore Reserves decreased from 222Mt to 174Mt due to changes to the Mineral Resource, increased confidence in geological interpretation and updated modifying factors. This equates to a reduction in tonnage of 22%, however a reduction of only 8% of rutile tonnes.

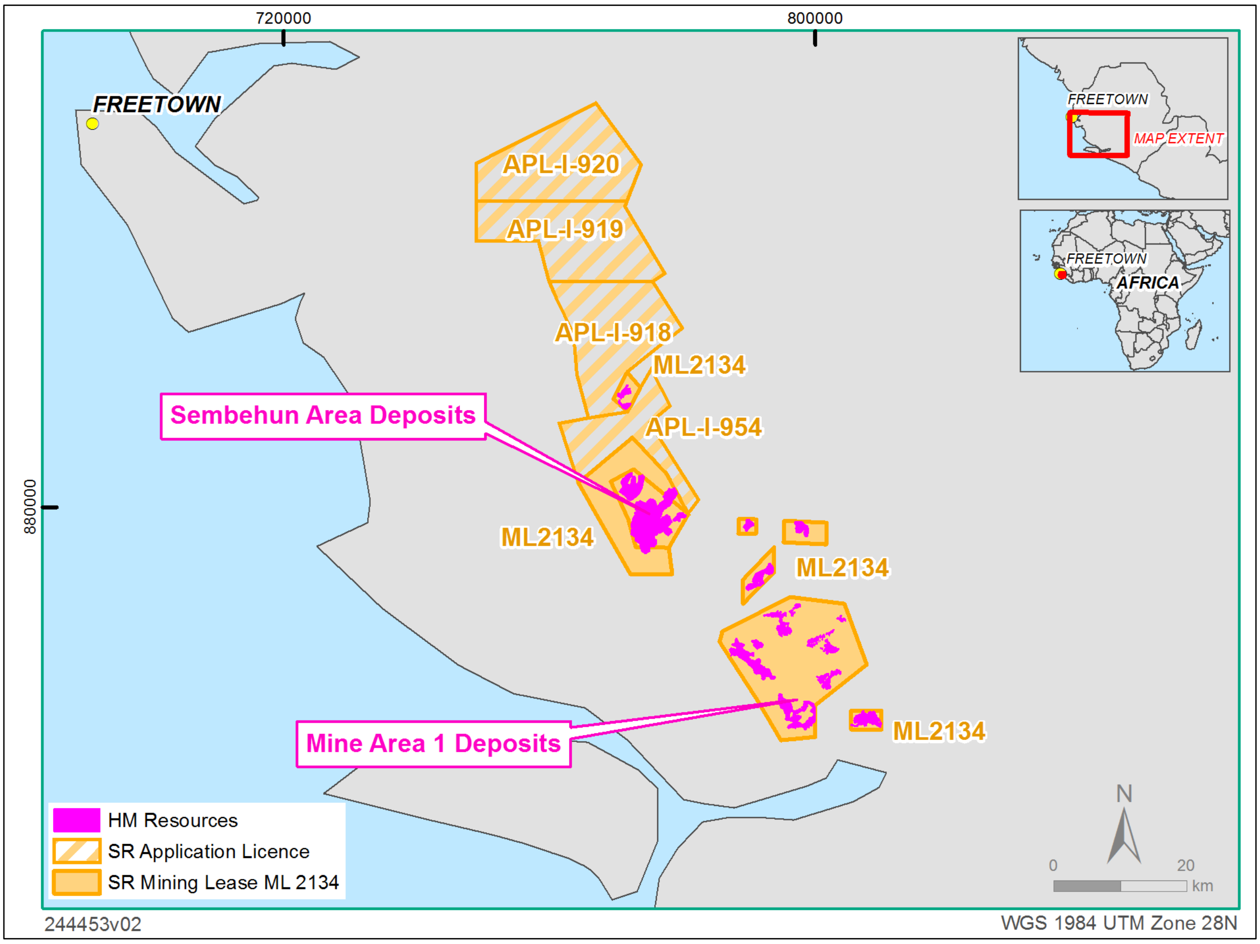

Figure 1: Sierra Leone summary plan showing the location of the Sembehun Group Deposits.

Sembehun Group Deposits Mineral Resource Update

The updated Mineral Resource estimate for the Sembehun Group Deposits, broken down by resource category, is presented in Table 1 below and background information is presented in **Appendix 1** (JORC Code (2012 Edition)[1] Table 1).

This update represents a net increase of 45Mt of resource and 0.5Mt of contained rutile compared to that reported in a release to the ASX on 16 August 2018 (“Sembehun Mineral Resource Increase and Pejebu Exploration Target, Sierra Rutile”). Minor adjustments made to the Sembehun Mineral Resource estimates were incorporated in the Statement of Mineral Resource and Ore Reserves contained in Iluka’s 2019 and 2020 Annual Reports. This document reports the changes to the Sembehun Mineral Resources since the release on 16 August 2018.

A total of 134Mt grading 1.4% rutile is now classified as Measured representing 27% of the reported resource tonnage or 34% of the contained rutile tonnage. A further 33% of the resource tonnage is classified as Indicated and 41% is Inferred. This compares to 75% reported as Indicated and 25% as Inferred in the ASX disclosure released on 16 August 2018.

The combined total of Measured and Indicated Mineral Resource amounts to 301Mt grading 1.2% rutile compared to 347Mt grading 1.1% rutile as reported at 16 August 2018. While the total resource tonnage defined as Measured and Indicated has decreased by ~13%, the contained rutile is only 2% less, reflecting the exploration focus on the higher grade mineralisation expected to contribute to Ore Reserves.

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[1] The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 Edition, prepared by the Joint Ore Reserves Committee of The Australasian Institute Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

Table 1: JORC Code (2012 Edition) Mineral Resource Summary for the Sembehun Group Deposits broken down by Resource Category.

Deposit	Mineral Resource Category(1)	Material Tonnes(2)	In Situ HM	In Situ Slime	In Situ OS	In Situ Rutile(3)	In Situ Ilmenite(3,5)	In Situ Zircon(3,5)	In Situ Rutile Tonnes	In Situ Ilmenite Tonnes	In Situ Zircon Tonnes
		(Mt)²	**(%)**	**(%)**	**(%)**	**(%)**	**(%)⁵**	**(%)⁵**	**(Mt)**	**(Mt)**	**(Mt)**
Benduma	Measured	21	3.4	33	15	1.1	0.9	0.1	0.2	0.2	0.0
Benduma	Indicated	85	3.3	34	18	1.1	0.8	0.1	0.9	0.7	0.1
Benduma	Inferred	113	3.1	33	16	0.8	0.7	0.1	0.9	0.8	0.1
Benduma	**TOTAL**	**218**	**3.2**	**34**	**17**	**0.9**	**0.7**	**0.1**	**2.1**	**1.6**	**0.1**
Dodo	Measured	54	3.1	35	17	1.4	0.8	0.1	0.8	0.5	0.1
Dodo	Indicated	20	3.2	39	25	1.1	0.8	0.1	0.2	0.1	0.0
Dodo	Inferred	21	3.3	35	20	1.3	0.9	0.1	0.3	0.2	0.0
Dodo	**TOTAL**	**95**	**3.2**	**36**	**20**	**1.3**	**0.8**	**0.1**	**1.2**	**0.8**	**0.1**
Gbap	Measured										
Gbap	Indicated	17	3.3	33	31	1.2	0.4	0.1	0.2	0.1	0.0
Gbap	Inferred	45	6.1	29	43	1.0	0.4	0.1	0.5	0.2	0.0
Gbap	**TOTAL**	**62**	**3.6**	**33**	**32**	**1.0**	**0.4**	**0.1**	**0.6**	**0.2**	**0.1**
Kamatipa	Measured	36	3.8	34	26	1.6	1.1	0.2	0.6	0.4	0.1
Kamatipa	Indicated	24	3.0	39	35	0.9	0.8	0.1	0.2	0.2	0.0
Kamatipa	Inferred	1	3.3	37	30	1.3	0.9	0.1	0.0	0.0	0.0
Kamatipa	**TOTAL**	**61**	**3.5**	**36**	**30**	**1.3**	**1.0**	**0.1**	**0.8**	**0.6**	**0.1**
Kibi	Measured	19	2.8	34	19	1.3	0.6	0.1	0.3	0.1	0.0
Kibi	Indicated	17	2.5	33	24	1.0	0.6	0.1	0.2	0.1	0.0
Kibi	Inferred	25	2.6	34	20	1.1	0.6	0.1	0.3	0.2	0.0
Kibi	**TOTAL**	**60**	**2.7**	**34**	**21**	**1.1**	**0.6**	**0.1**	**0.7**	**0.4**	**0.0**
Komende	Measured	4	5.1	40	27	1.0	1.4	0.1	0.0	0.1	0.0
Komende	Indicated	6	4.7	54	22	0.5	1.0	0.1	0.0	0.1	0.0
Komende	Inferred	2	4.5	48	27	0.5	1.1	0.1	0.0	0.0	0.0
Komende	**TOTAL**	**12**	**4.8**	**48**	**24**	**0.7**	**1.1**	**0.1**	**0.1**	**0.1**	**0.0**
Sembehun Group	Measured	134	3.4	34	20	1.4	0.9	0.1	1.9	1.2	0.1
Sembehun Group	Indicated	167	3.2	36	23	1.0	0.7	0.1	1.7	1.2	0.1
Sembehun Group	Inferred	207	3.7	33	23	0.9	0.6	0.1	1.9	1.3	0.1
Sembehun Group(4)	**TOTAL**	**508**	**3.3**	**35**	**22**	**1.1**	**0.7**	**0.1**	**5.5**	**3.7**	**0.4**

Notes:

1. Mineral Resources are reported inclusive of Ore Reserves.
2. In situ (dry) metric tonnage is reported.
3. The mineral assemblage is reported as a percentage of the in situ material.
4. Rounding may generate differences in the last decimal place.
5. The ilmenite and zircon grades are included for tabulation purposes under the Measured, Indicated and Inferred Resource category. The confidence in the estimate of the grade and tonnage for ilmenite and zircon are however only to be considered as Indicated where rutile is Measured. Otherwise the ilmenite and zircon are considered to be Inferred due to material factors influencing the confidence in the estimates for ilmenite and zircon.

The underlying exploration and subsequent conversion of a significant portion of the Mineral Resource affirms Sembehun as a large resource containing high quality rutile.

The change in the resources from 2018 is a result of:

- a significant exploration programme comprising 26,129m of drilling in 2,686 drill holes and an additional 15,678 assays;
- updated geological interpretation;
- updated resource estimation; and
- application of a more conservative reporting criteria to exclude thin low rutile grade mineralisation unlikely to ever be economic to mine.

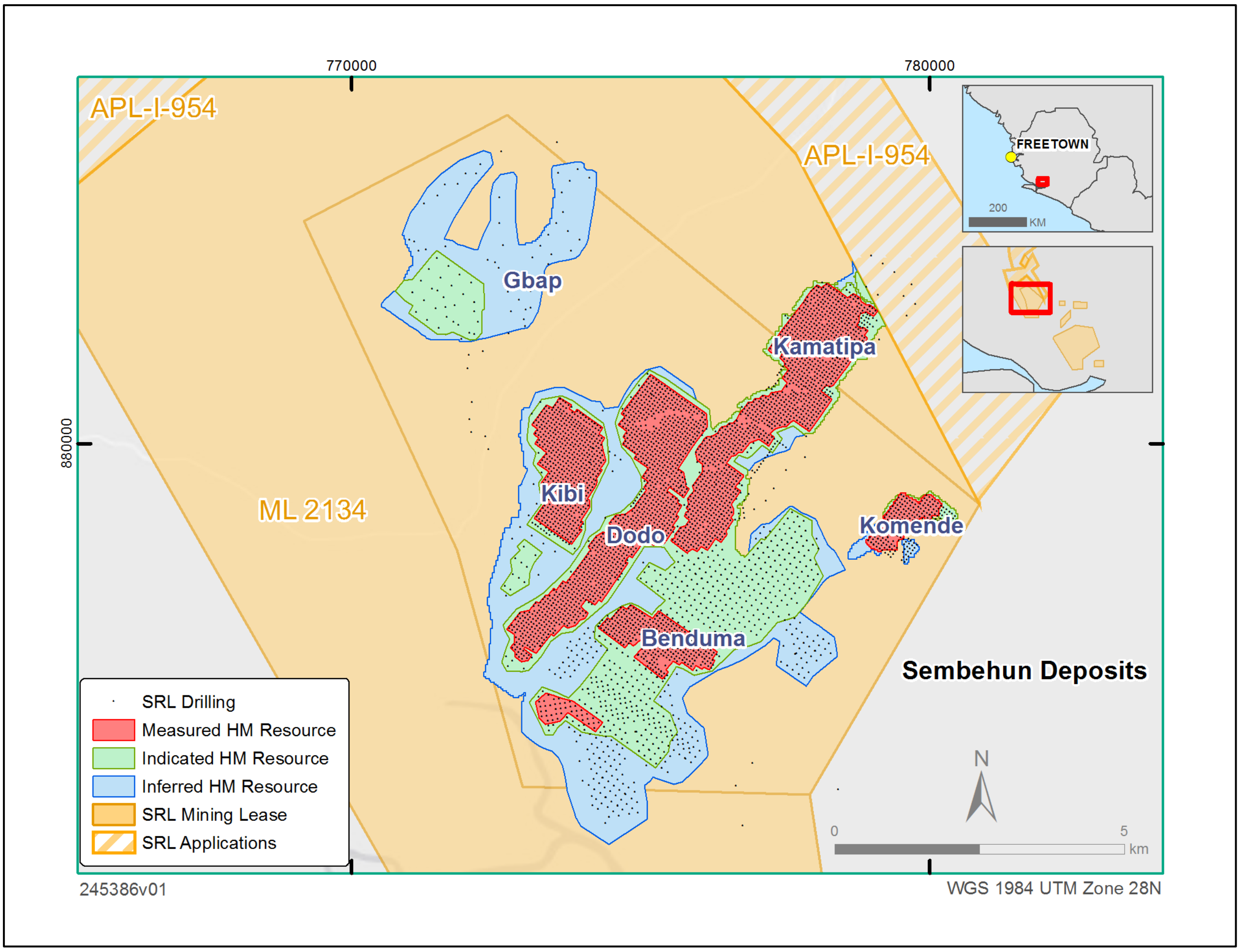


Figure 2: Sembehun drill collar locations and JORC Category distribution.

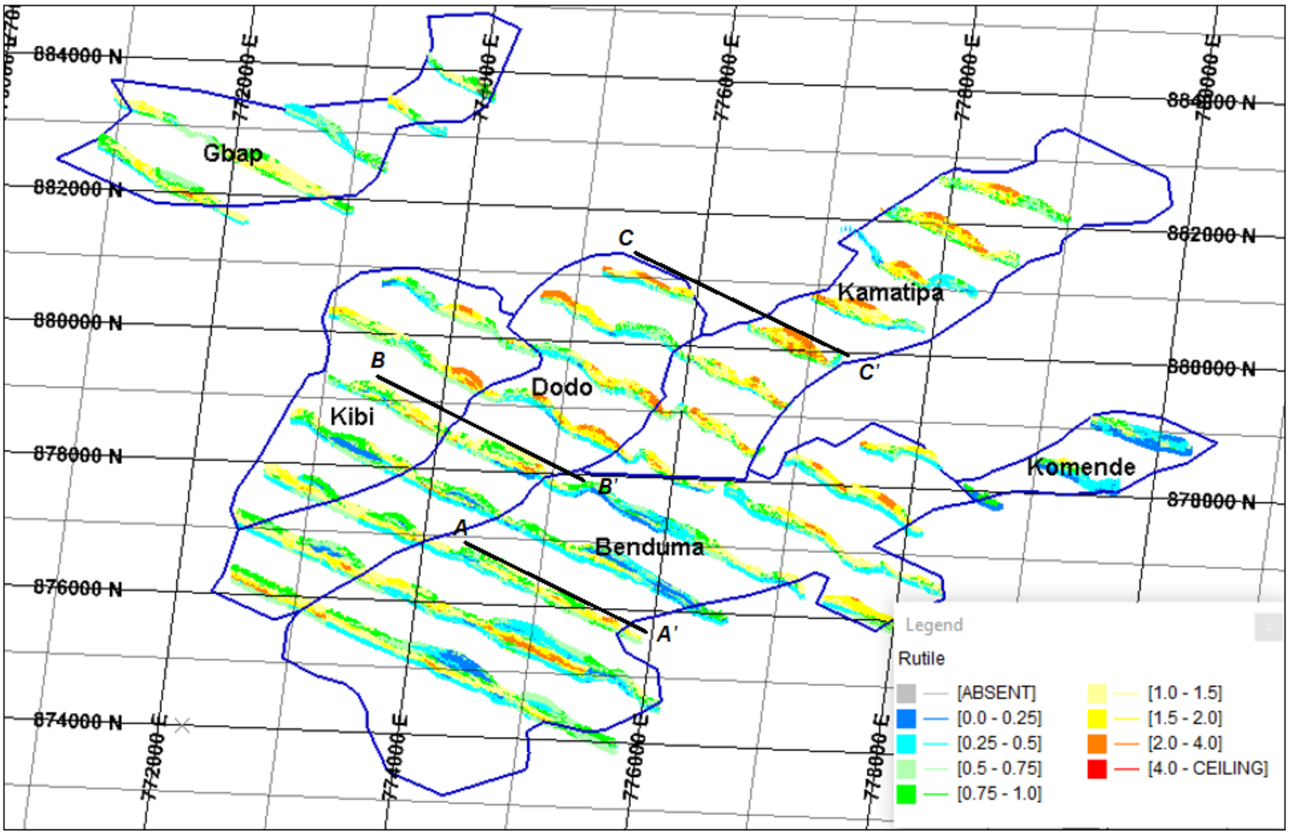


Figure 3: Sections through the Sembehun block model at approximately 700m spacing showing in situ rutile grades (10x vertical exaggeration) and the location of cross sections in Figures 6, 7 and 8.

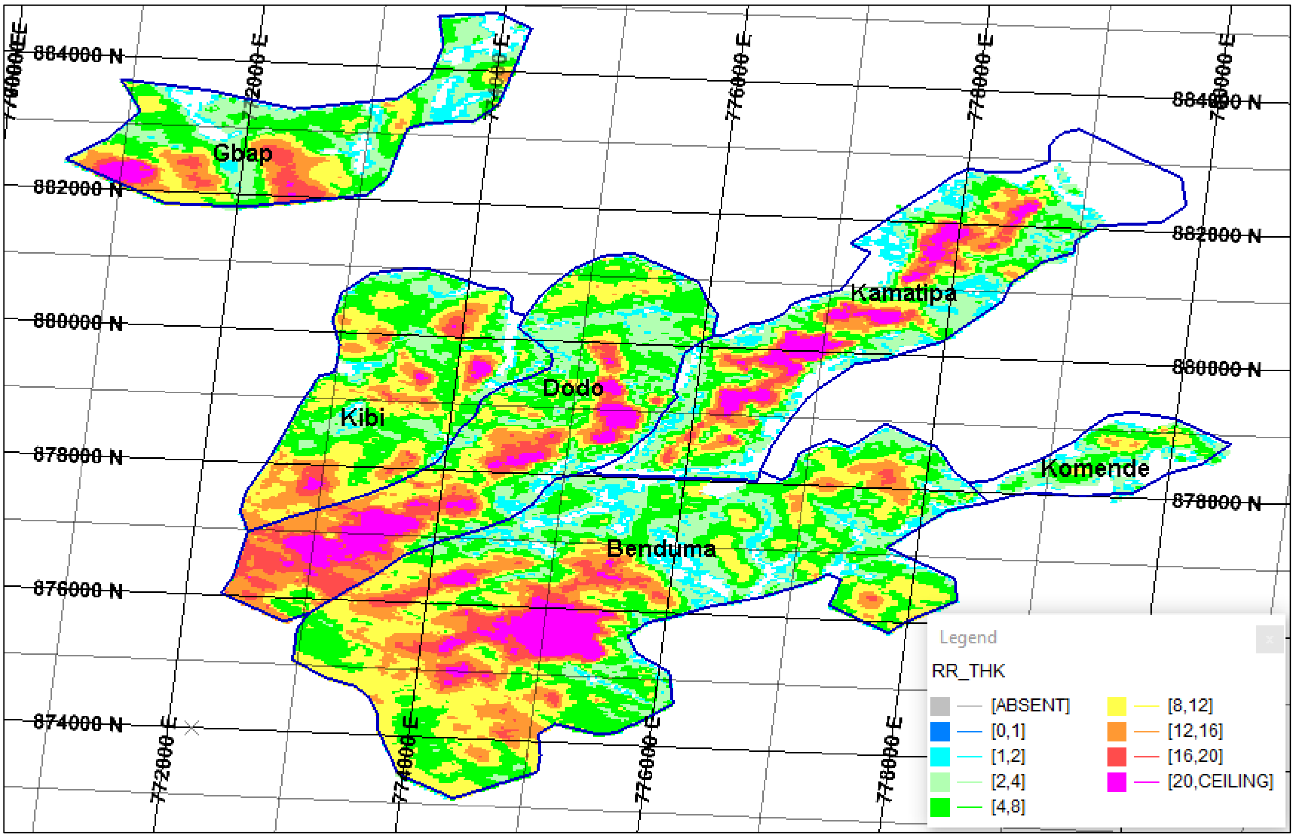
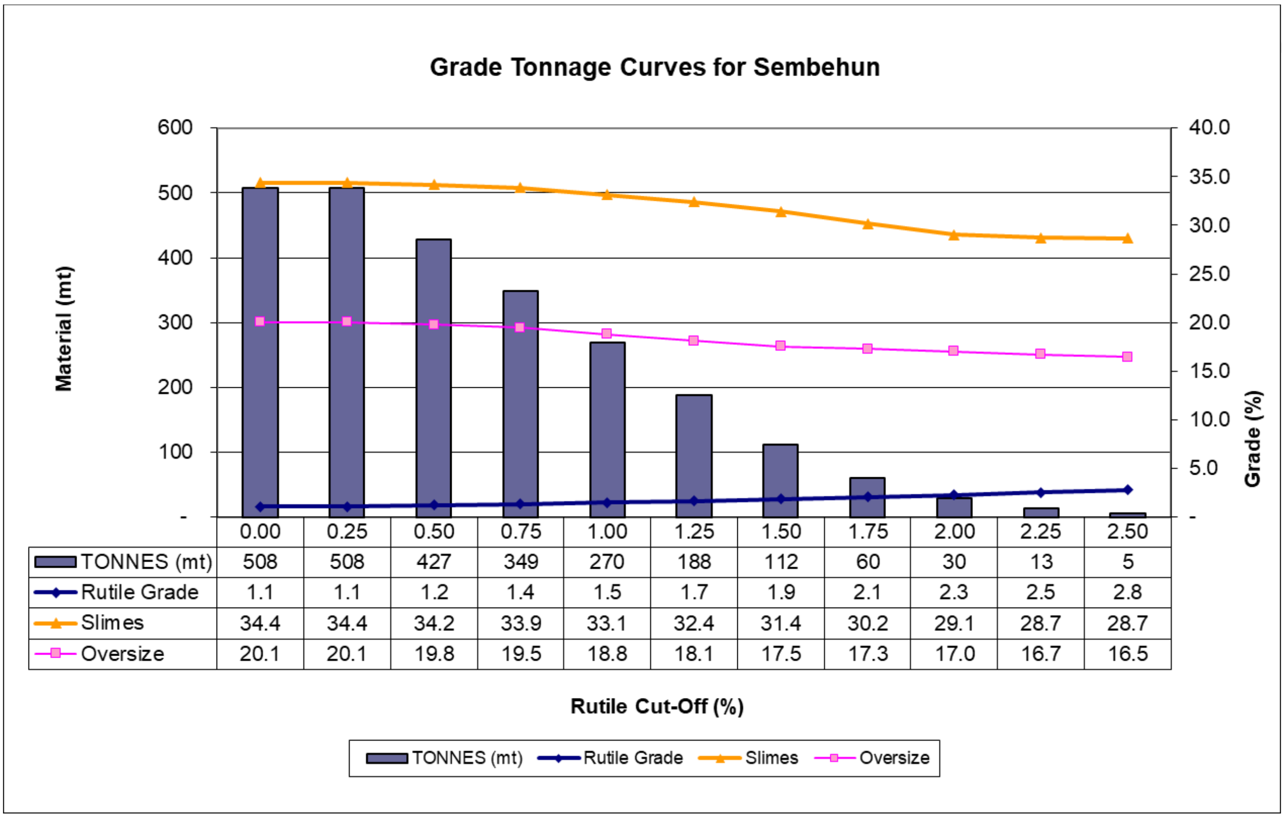


Figure 4: Plan showing the rutile grade * resource thickness endowment for the Sembehun Deposits.



	0.00	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50
TONNES (mt)	508	508	427	349	270	188	112	60	30	13	5
Rutile Grade	1.1	1.1	1.2	1.4	1.5	1.7	1.9	2.1	2.3	2.5	2.8
Slimes	34.4	34.4	34.2	33.9	33.1	32.4	31.4	30.2	29.1	28.7	28.7
Oversize	20.1	20.1	19.8	19.5	18.8	18.1	17.5	17.3	17.0	16.7	16.5

Figure 5: Grade tonnage curve for the Sembehun rutile mineralisation.

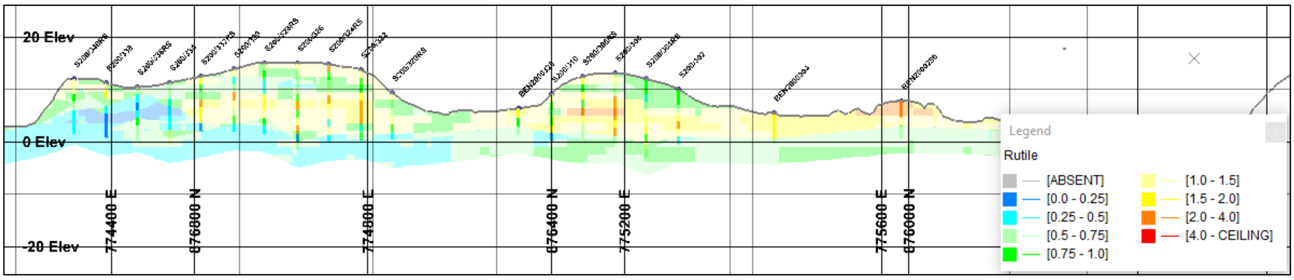


Figure 6: Cross section A – A' showing model and drill rutile grades through the Benduma Deposit (10x vertical exaggeration).

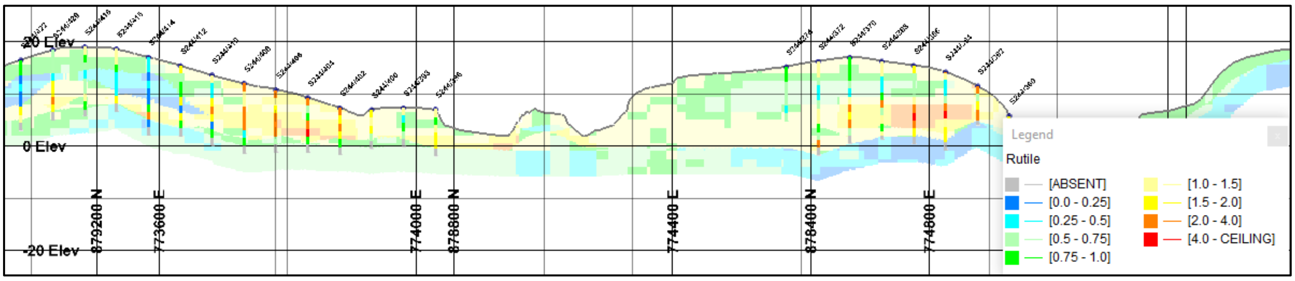


Figure 7: Cross section B – B' showing model and drill rutile grades through the Kibi and Dodo Deposits (10x vertical exaggeration).

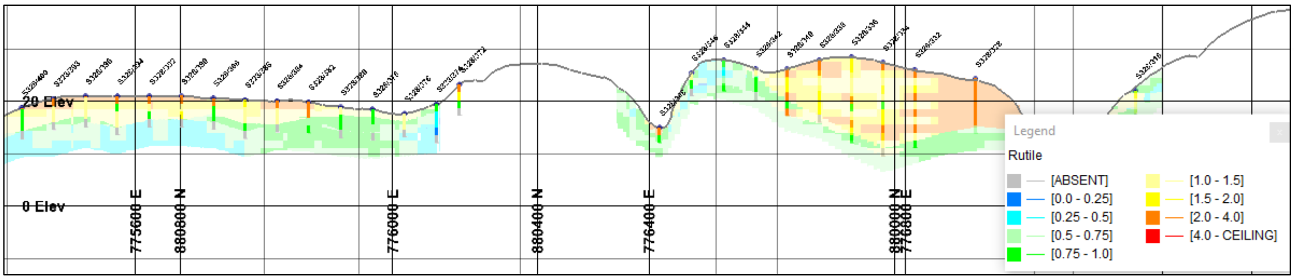


Figure 8: Cross section C – C' showing model and drill rutile grades through the Dodo and Kamatipa Deposits (10x vertical exaggeration).

Sembehun Group Deposits Ore Reserve Update

The updated Ore Reserve estimate for the Sembehun Group Deposits, broken down by reserve category, is presented in Table 2 below and background information is presented in Appendix 1 (JORC Code (2012 Edition) Table 1 summary). The location of the Sembehun Ore Reserves are shown in Figure 9.

This update represents a net decrease of 48Mt of reserve and 0.2Mt of contained rutile compared to that reported in a release to the ASX on 20 February 2017 ("Updated Mineral Resource and Ore Reserve Statement). Minor adjustments made to the Sembehun Ore Reserves estimates were incorporated in the Statement of Mineral Resource and Ore Reserves contained in Iluka's 2018, 2019 and 2020 Annual Reports. This document reports the changes to the Sembehun Ore Reserves since the release on 20 February 2017.

A total of 111Mt grading 1.49% rutile is now classified as Proved representing 64% of the reported reserve tonnage and contained rutile tonnage. There was no Proved reserve reported in the ASX disclosure release on 20 February 2017.

The combined total of Proved and Probable Reserve amounts to 174Mt grading 1.46% rutile compared to 222Mt grading 1.24% rutile as reported on 20 February 2017. While the total reserve tonnage defined as Proved and Probable has decreased by around 22%, the contained rutile is only 8% less, reflecting the exploration focus on the higher grade mineralisation.

Table 2: JORC Code (2012 Edition) Ore Reserve Summary for the Sembehun Group Deposits broken down by Reserve Category.

Deposit	Ore Reserve Category$^{(1)}$	Material Tonnes$^{(2)}$	In Situ HM	In Situ Slime	In Situ OS	In Situ Rutile$^{(3)}$	In Situ Ilmenite$^{(3,5)}$	In Situ Zircon$^{(3,5)}$	In Situ Rutile	In Situ Ilmenite	In Situ Zircon
		(Mt)^2	(%)	(%)	(%)	(%)	(%)^5	(%)^5	(Mt)	(Mt)	(Mt)
Benduma	Proved	13	3.2	32.5	13.7	1.31	0.89	0.08	0.2	0.1	0.0
Benduma	Probable	40	3.3	29.8	17.8	1.49	1.00	0.08	0.6	0.4	0.0
Benduma	**TOTAL**	**53**	**3.3**	**30.5**	**16.8**	**1.44**	**0.97**	**0.08**	**0.8**	**0.5**	**0.0**
Dodo	Proved	48	3.1	34.8	16.3	1.44	0.86	0.11	0.7	0.4	0.1
Dodo	Probable	6	3.1	36.9	20.4	1.32	0.81	0.10	0.1	0.1	0.0
Dodo	**TOTAL**	**54**	**3.1**	**35.1**	**16.8**	**1.43**	**0.86**	**0.11**	**0.8**	**0.5**	**0.1**
Kamatipa	Proved	34	3.8	34.4	25.4	1.66	1.07	0.15	0.6	0.4	0.1
Kamatipa	Probable	9	3.2	42.2	23.7	1.32	0.88	0.13	0.1	0.1	0.0
Kamatipa	**TOTAL**	**42**	**3.7**	**36.0**	**25.1**	**1.59**	**1.03**	**0.15**	**0.7**	**0.4**	**0.1**
Kibi	Proved	15	2.9	34.6	17.1	1.42	0.61	0.08	0.2	0.1	0.0
Kibi	Probable	8	2.7	32.2	19.3	1.26	0.69	0.08	0.1	0.1	0.0
Kibi	**TOTAL**	**23**	**2.8**	**33.7**	**17.9**	**1.36**	**0.64**	**0.08**	**0.3**	**0.1**	**0.0**
Komende	Proved	1	5.3	40.7	21.6	1.33	1.69	0.17	0.0	0.0	0.0
Komende	Probable	0	5.3	46.5	22.3	1.21	1.80	0.15	0.0	0.0	0.0
Komende	**TOTAL**	**2**	**5.3**	**41.8**	**21.7**	**1.31**	**1.71**	**0.16**	**0.0**	**0.0**	**0.0**
Sembehun Group	Proved	111	3.3	34.5	19.0	1.49	0.91	0.12	1.6	1.0	0.1
Sembehun Group	Probable	63	3.2	32.6	19.1	1.42	0.93	0.09	0.9	0.6	0.1
Sembehun Group$^{(4)}$	**TOTAL**	**174**	**3.3**	**33.8**	**19.0**	**1.46**	**0.91**	**0.11**	**2.5**	**1.6**	**0.2**

Notes:

1. Ore Reserves are a sub-set of Mineral Resources.
2. In situ (dry) metric tonnage is reported.
3. The mineral assemblage is reported as a percentage of the in situ material.
4. Rounding may generate differences in the last decimal place.
5. The ilmenite and zircon grades are included for tabulation purposes under the Measured, Indicated and Inferred Resource category. The confidence in the estimate of the grade and tonnage for ilmenite and zircon are however only to be considered as Probable where rutile is Proved. Otherwise the ilmenite and zircon are considered to be Inferred due to material factors influencing the confidence in the estimates for ilmenite and zircon.

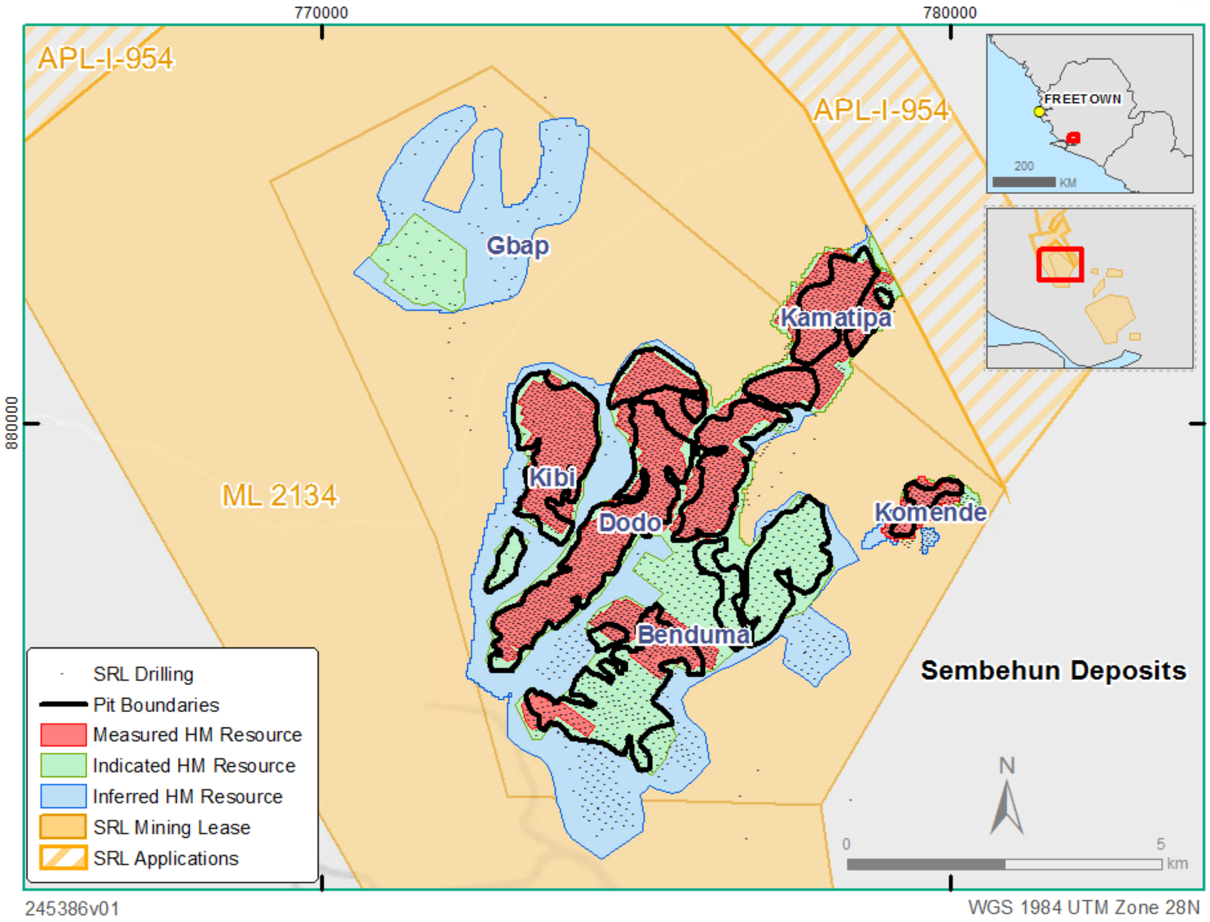


Figure 9: Sembehun plan showing pit boundaries against resource classification.

Summary of Mineral Resource Estimate Reporting Criteria

As per ASX Listing Rule 5.8 and the 2012 JORC Code reporting guidelines, a summary of the material information used to estimate the Sembehun Mineral Resource is detailed below (for more detail refer to Table 1, Sections 1 to 3 included as **Appendix 1**).

Deposit Geology and Interpretation

A 20 to 40km wide coastal strip along the west coast of Sierra Leone comprising Tertiary to Quaternary sediments, known as the Bullom Group, unconformably overlies the crystalline basement rocks of the Archean aged Kasila Group. The Bullom Group comprises sediments deposited in alluvial, fluvial, coastal marine and estuarine environments. The deposition of the Bullom Group followed a late Tertiary-age marine regression, which exposed the basement to chemical and mechanical erosion.

Rutile and other heavy minerals were liberated via erosion of topographically elevated areas of the Kasila Group and subsequently deposited in structurally controlled channels, erosional valleys or as alluvial fans on a topographically benign coastal plain.

The heavy minerals within the Sierra Leonean Rutile Deposits are typically angular, indicating minimal transport and re-working. The spatial distribution of heavy minerals along the length of the palaeo-channels also reflects this, with mineral grades typically decreasing with distance from the source and increasing sand content replacing argillaceous material within the matrix.

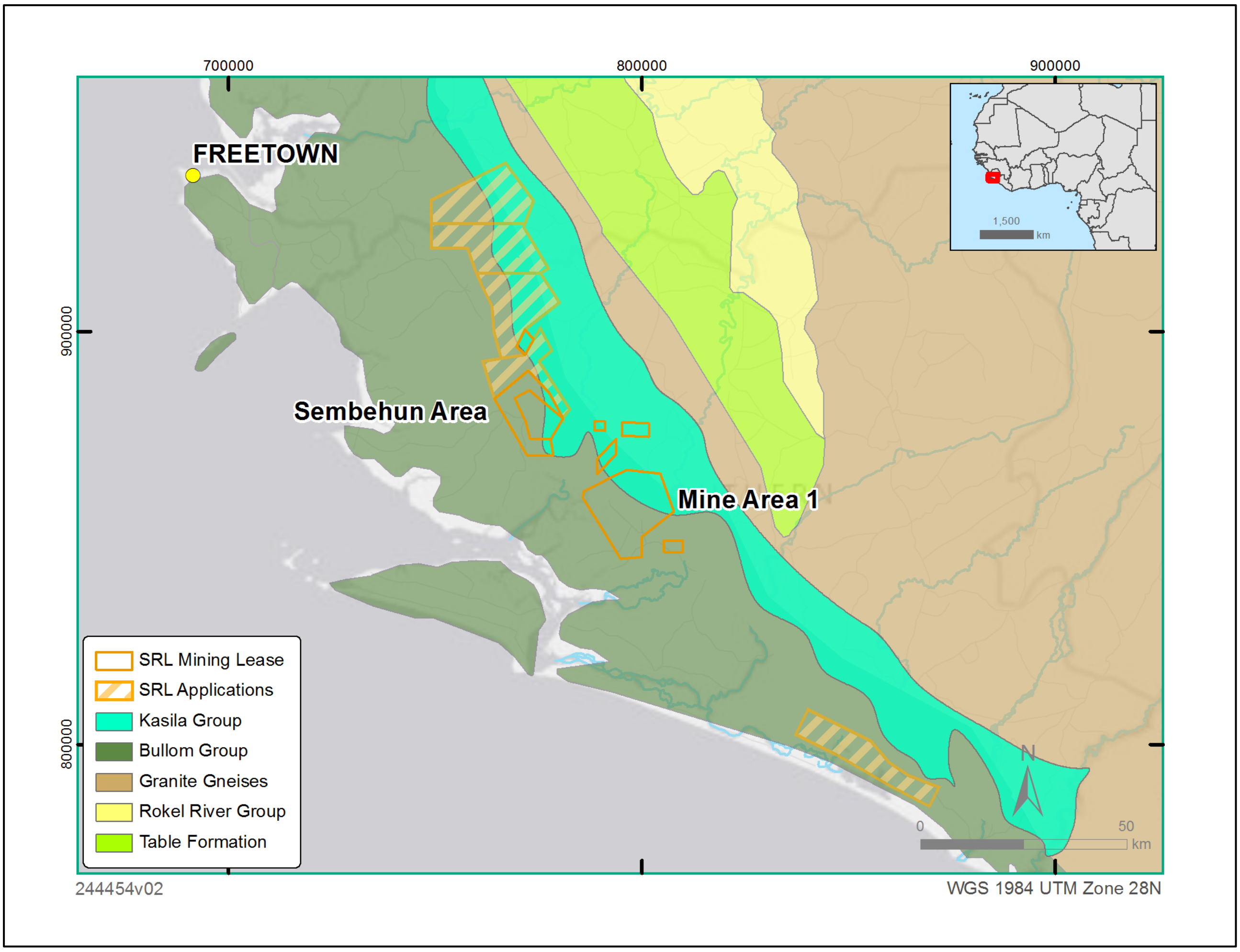


Figure 10: Regional Geology Plan for Sierra Leone.

Data Storage

Data supporting the Mineral Resource estimate for the Sembehun Deposits was recorded in MS Excel spreadsheets until December 2016 (Iluka acquisition of SRL). Subsequently, to ensure data quality and security, original laboratory information and supporting data was migrated into Iluka's SQL hosted Geology Database (GDMS), interfaced via an acQuire data management system. Where the original source files were lost or destroyed during civil unrest, data was imported directly from SRL's "master" spreadsheets. Currently, drill logs and assay data are validated on site and then imported directly into the GDMS, undergoing further validation. The field logs are entered into acQuire field logging software hosted on Toughbook computers at the time of drilling and electronically transferred to the GDMS.

Drill technique and hole spacing

In the 1960s and 1970s the Sembehun area was tested by "Stitz" method drilling conducted on cut lines and paths. Subsequent exploration has predominantly used Hollow Flight Auger (HFA) and Air Core (AC) drilling on surveyed and cleared gridlines.

Table 3: Summary of exploration supporting the Sembehun Group Mineral Resource estimates.

Year	Holes	Metres	Assays	Metres (%)	Comment
Pre 1980	37	150.0	59	0.2	Stitz drilling, Gbap
1980 - 1990	815	7,602.1	5,937	21.2	Hollow Flight Auger on all deposits except Gbap
2012	526	7,471.5	1,585	5.7	Auger and AC drilling on Benduma, many assays missing
2015	357	2,362.0	1,536	5.5	Auger and AC drilling Kamatipa
2016	428	3,312.9	2,268	8.1	Auger and AC drilling Kamatipa
2017	199	1,394.8	939	3.4	Auger drilling Kamatipa
2019	2,011	19,599.6	11,857	42.3	Major drilling programme on all deposits except Gbap. Contract AC drilling at Komende and Benduma, Auger drilling at Kamatipa, Dodo and Kibi.
2020	675	6,529.5	3,821	13.6	Major drilling programme on Benduma, Dodo and Kibi. Contract AC drilling on Benduma, Auger drilling at Benduma, Dodo and Kibi
Total	**5,048**	**48,422.4**	**28,002**	**100**	

Table 3 presents a summary of the drilling carried out on each sub-area of the Sembehun Group Deposits.

Table 4: Summary of exploration by deposit for Sembehun.

Deposit	Holes	Records	Metres	Assays	Metres (%)
Benduma	1,322	11,589	16,580.4	8,122	34.2
Dodo	1,282	8,872	12,922.7	8,000	26.7
Gbap	88	295	471.8	294	1.0
Kamatipa	1,444	7,504	10,557.5	7,063	21.8
Kibi	638	3,681	5,370.8	3,008	11.1
Komende	274	1,738	2,519.2	1,515	5.2
Sembehun Total	**5,048**	**33,679**	**48,422.4**	**28,002**	**100.0**

Drilling was completed on a regularised grid with closer spaced drilling used to support an increased confidence in the Mineral Resource estimates as shown in Figure 2. Prior to 1995, drilling was typically completed at a 240m (800ft) to 488m (1,600ft) line spacing. The detailed infill drilling campaigns during 2019 and early 2020 were carried out on a 60m by 60m grid over areas expected to be the focus of early mining. The 60m by 60m drill spacing was designed to support a Measured level of resource confidence based on geostatistical analysis of older datasets.

Geological Logging

Sample intervals are logged qualitatively in accordance with SRL standard operating procedures. The main geological criteria recorded includes

- lithology
- percentage sample recovery
- colour
- main lithology
- lithological qualifiers
- grainsize
- estimates of slime, oversize and valuable heavy mineral.

Sampling and sub-sampling techniques

Sampling of drill holes is typically conducted at 1.5m intervals although sample intervals vary at times to honour geological contacts. Prior to 1995 the principal sample length was 5 feet which equates to 1.524m. For the exploration drilling carried out in the 1980s, 63 percent of all sample intervals were 1.524m (5 feet). For drilling completed after 2012 following resumption of exploration activity at Sembehun, about 96% of the sample intervals were 1.5m length. Smaller intervals of geologically unique material, such as topsoil, may be taken from the auger drilling to honour geology and grade relationships. The sample from the entire interval (typically about 4.0kg) is collected in pre-labelled calico bags and submitted for assay. Unique sample identifiers based on the hole ID and downhole interval number are recorded on metallic tags and placed in the sample bag for submission to the SRL laboratory. A duplicate tag is inserted for validation purposes. The sample bags for each hole are placed in sacks labelled for each hole. A sample submission form itemising the samples recovered per hole is completed, photocopied and submitted to the Data-Capture Clerk and laboratory for further processing.

Sample Analysis Method

The method for determining key sample analytical data, mineral assemblage, and in particular the rutile content, has varied over time. Typically, drill samples are oven dried, weighed and then soaked in water with Tetra-Sodium Pyrophosphate (TSPP) added to improve desliming by dispersing clay. Samples are then attritioned and wet screened to remove slimes and oversize (OS) fractions.

Historically, the slime was screened at 250 Tyler mesh sizing, equivalent to 60µm. This transitioned to 63µm desliming screens with the introduction of metric sizing following restart of operations in 2006. The OS for sample analysis from the 1980s was recorded as 16 Tyler mesh sizing (equivalent to 1.18mm) with further screening at 3/8th inch (equivalent to 9.5mm) to provide an indication of the "coarse" OS. Sembehun samples from the 2012 to 2017 exploration programmes were screened at 1.0mm and 9.5mm, emulating the imperial screen sizes used in the 1980s. For samples analysed from the 2019 and 2020 exploration programmes, an additional screening stage was done at 2.0mm to provide further resolution of the OS sizing distribution.

Mineral Assemblage Determination

Effectively the "sand" size fraction used to determine the rutile and other valuable mineral content, has remained constant at (or very close to) 63µm to 1.0mm, although the method used to determine the mineral assemblage has varied considerably.

For samples analysed prior to 1995, the rutile was calculated by subjecting a split of about 50 to 100 grams of the -16 to +250 mesh (sand) fraction to magnetic separation. X-ray Fluorescence analysis (XRF) on a fused bead and Leco sulphur determination was done on the non-magnetic sand fraction with the rutile content being calculated from the XRF TiO_2 assay. The in situ rutile content was then calculated based on the TiO2 in sand content of the sample. A further split of the sand fraction of all samples from each individual drill hole was composited. The sand composite was subject to Long Set sizing and subsequent heavy liquid separation of each Long Set size fraction to determine the Heavy Mineral (HM) content in the sand fraction. The HM fraction from each Long Set size fraction was then subject to magnetic separation, and grain counting was done on both the magnetic and non-magnetic fractions. Very little data remains from the exploration prior to 1995 with most hard copy records destroyed during civil unrest in the 1990s.

For exploration undertaken from restart of operations in 2006 through to 2018, the rutile was determined in the same manner with XRF analysis of a split of the non-magnetic sand fraction. The XRF analysis of the non-magnetic sand fraction was done on a fused bead until 2011 and a pressed powder "pellet" from 2011 to 2018 to simplify the analysis process and reduce costs. A second split of the sand fraction from the samples for each drill hole was subjected to heavy liquid separation with the HM from each sand fraction combined to provide a HM composite sample for each drill hole. The HM composite was then subjected to Long Set screening to provide sizing information. The HM fractions from the Long set sizing were recombined and subjected to magnetic separation with XRF analysis and grain counting performed on the magnetic and non-magnetic fractions. A Leco sulphur determination was also done at times on a split of the HM fraction. The XRF and grain counting was used to determine the full assemblage along with contaminants and trash mineral species.

A revised analysis method was adopted for the exploration completed after 2018, in part to negate the bias associated with the analysis of pressed pellets. This comprised the compositing of grade weighted HM proportions of multiple samples from lithological zones with similar geological and grade characteristics (rather than the previous drill hole unique composites). The HM composite is then subjected to Long Set screening, and magnetic separation. The magnetic and non-magnetic fractions are analysed by XRF on a fused bead, with grain counting done on an ad hoc basis as required. A Leco sulphur determination is done on the non-magnetic HM fraction. The mineral assemblage species including rutile, ilmenite, zircon and monazite along with magnetic others and non-magnetic others are calculated using stoichiometric assignment of key chemical analytes. The mineral assemblage is then assigned to the drill data file based on the composite identifier. Nearly 1,900 composites using the revised method were designed and analysed during 2019 and 2020 exploration programmes at Sembehun.

Estimation methodology

Model updates to the Sembehun sub-areas were progressed as data became available. The Kamatipa and Komende sub-areas were modelled in late 2020/early 2021 by Iluka company personnel while the Benduma, Dodo and Kibi deposits were modelled mid 2021 by Optiro Mining Consultants. No exploration work was undertaken at the Gbap sub-area since the previous reporting and the model for this deposit remains unchanged. Geological interpretation, wireframing, 3D block model creation and grade interpolation for all deposits was carried out using Datamine Studio RM mining software. All deposits use the same grid coordinate system and a singular geological interpretation covering all the deposits was used. The volume model(s) were constructed by flagging model cells and drill holes using a series of open and closed wireframes. Wireframe surfaces representing topography, an interpreted base of alluvium and top of recognisable weathered Kasila Group were used to allow application of an Alluvial sedimentary zone, a transitional "Saprolite" zone and Bed zone to the model. Closed surfaces outlining a distinctive low rutile grade zone and areas of indurated "Blocky Laterite" were used to isolate respective areas in the model.

A uniform parent cell dimension of 30m by 30m by 1.5 m was adopted for all the modelled sub-areas with an allowance for sub-celling to 5m by 5m by 0.15m to allow improved resolution along zone boundaries. While the parent cell dimensions are smaller than what might be typically adopted in areas of relatively widely spaced drilling at Benduma, Kibi and Gbap, this does not impact the overall Mineral Resource estimate.

Grade for all analytes was interpolated using an Inverse Distance Squared (ID^2) method, with the exception of Lithology, Colour and Density which were interpolated using a Nearest Neighbour algorithm. A primary search ellipse dimension of 150 x 250 x 3m was used by Iluka for interpolating grades for Kamatipa and Komende. Optiro in modelling of the Benduma, Dodo and Kibi sub-areas selected ranges corresponding to the total variability (range of the variogram) for definition of the search ellipse dimensions. A minimum of 4 and a maximum of 16 samples were used to inform the grade in the model cells for Kamatipa and Komende while Optiro adopted a minimum number of 8 and a maximum of 20 samples for estimating Benduma, Dodo and Kibi.

Datamine's dynamic anisotropy functionality was used, allowing alignment of the search orientation with geological and grade trends to improve localised grade estimation. Increased search volumes, by factors of 2 and 3 were used for successive search runs when the interpolation failed to find sufficient data to satisfy the requirements of the primary search volume.

Table 5: Summary of modelling parameters by sub-area for Sembehun.

Deposit	Cell Dimension			Interpolation Method	Search Ellipse Dimension			2nd Search Vol Factor	3rd Search Vol Factor
	East	North	RL		X	Y	Z		
Benduma	30	30	1.5	ID2	230	260	3	2	3
Dodo	30	30	1.5	ID2	280	460	3	2	3
Gbap	30	30	1.5	ID2	360	500	3	2	3
Kamatipa	30	30	1.5	ID2	150	250	3	2	3
Kibi	30	30	1.5	ID2	360	500	3	2	3
Komende	30	30	1.5	ID2	150	250	3	2	3

Variography was carried out on the Sembehun data to verify the appropriate search ellipse dimensions. The variograms provide information on the continuity of the rutile and other grade variables which in turn was used to support the JORC Mineral Resource Category assigned.

The Mineral Resources over the northern portion of the Gbap Deposit, in areas tested by Stitz Drilling done in the 1970s, remain as polygonal area of influence estimates. Based on historical mapping, an area of approximately 150 hectares remains untested by modern exploration but is tested by a number of Stitz holes which intersected mineralised alluvial sediment averaging 4m in thickness. This represents less than 2% of the total Sembehun Mineral Resource and is considered low confidence.

Cut-off Grade

The Mineral Resources were reported using a 0.25% rutile cut-off grade in conjunction with delimiting resource outlines based on geomorphology and the extent of drill coverage. The grade is slightly lower than that considered economic under current mineral pricing conditions but allows for:

- potential mineral price increases;
- the recovery of ilmenite and zircon credits;
- consideration of more cost effective mining methods (e.g. dredging or hydraulic mining); and
- efficiencies gained from increased mine throughput.

The Mineral Resource estimates also take into consideration a rutile grade * thickness factor with a lower cut-off value of 1 being applied. This means that at least 4m of material thickness with a rutile grade in excess of 0.25% or 2m thickness with a grade in excess of 0.5% rutile is required for the reporting of the Mineral Resources . This rutile grade * thickness factor is applied to limit the reporting of thin low rutile grade mineralisation that is unlikely to be economic.

Resource Classification Assignment

The Mineral Resource estimates were classified as Measured, Indicated or Inferred according to the definitions of the JORC Code (2012 Ed.). The classification assigned is based on confidence of the rutile grade and considers:

- confidence in geological and rutile grade continuity;
- data density and distribution;

- confidence in the quality of the dataset used; and
- review of the search volume factor employed to assign a grade and/or kriging quality metrics for rutile.

A Measured Resource classification was assigned to areas where the grade estimation within the alluvial material (Zone 1) was informed within the first search pass, the rutile data is supported by drilling and analysis undertaken during 2019 and 2020 and the drill spacing is generally 60m by 60m. An Indicated Resource classification was assigned to the alluvial material defined by areas where the drilling with rutile data is at a spacing of 120m by 120m. Mineral Resources within the low rutile grade material, “Saprolite“ or Blocky Laterite were assigned an Indicated classification in areas where the drill spacing is 60m by 60m reflecting lower confidence in continuity of mineralisation for these materials. Inferred Mineral Resources were defined within areas of alluvial material where the drill spacing was greater than 120m by 120m for Benduma, Dodo and Kibi and greater than about 200m by 200m for Komende and Kamatipa.

Mining and Metallurgical Methods and Parameters and Other Material Modifying Factors

The Sierra Leone Rutile deposits have been mined for over 50 years. The Sembehun rutile deposits are geologically identical to those being mined in the Gbangbama region, 30 km to the south-east. The rutile recovered from the Sierra Leone deposits is well understood to be some of the best quality product available globally.

Feasibility studies support the economic viability of the Sembehun rutile deposits**.** The rutile deposits are at, or close to, surface and contain minimal interburden. The geomorphology and relatively unconsolidated nature of the host material allows for large scale truck and shovel mining operation. The metallurgical and mineral separation characteristics are well understood. Ore processing will involve liberation of the sand fraction with conventional scrubber and/or trommel followed by HM recovery using conventional spiral equipment. The HMC from mining at Sembehun would provide feed for Sierra Rutile’s MSP at Mogbwemo for production of rutile and other saleable HM products.

Other material Modifying Factors in relation to the Sembehun Mineral Resource are addressed in the Modifying Factors section of the Ore Reserve Reporting Criteria below.

Competent Persons Statement

The information in this report that relates to the Mineral Resources estimates for the Kamatipa, Komende and Gbap Deposits is based on, and fairly represents information and supporting documentation prepared by Mr Brett Gibson, a permanent employee of Iluka. Mr Gibson is a member of the Australian Institute of Geoscientists and he has sufficient experience which is relevant to the style of mineralisation and the types of deposits under consideration, and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the “Australian Code for reporting of Exploration Results, Mineral Resources and Ore reserves”. Mr Gibson consents to the inclusion in this release of the matters based on the information in the form and the context in which they appear. Mr Gibson is a shareholder of Iluka.

The information in this report relating to the Mineral Resource estimates for the Benduma, Dodo and Kibi Deposits is based on, and fairly represents, information and supporting documentation prepared by Christine Standing, Principal Geologist for Optiro. Mrs Standing is a member of the Australian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration, and the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the “Australian Code for reporting of Exploration Results, Mineral Resources and Ore reserves”. Mrs Standing consents to the inclusion in this release of the matters based on the information in the form and the context in which they appear.

Summary of Ore Reserve Estimate Reporting Criteria

As per ASX Listing Rule 5.9 and the 2012 JORC Code reporting guidelines, a summary of the material information used to estimate the Sembehun Ore Reserve is detailed below (for more detail refer to Table 1, Sections 4 included as **Appendix 1**). The Ore Reserves are based on Feasibility Studies completed by Iluka.

Reserve Classification

The stated Proved and Probable Ore Reserves correspond with the Measured and Indicated Mineral Resources and values reported are in situ. There are no Inferred Resources included in the stated reserve numbers.

Mining and recovery factors

Pit optimisations were conducted using Minemax mine planning software which is industry standard software. Optimisation parameters used consisted of current and projected costs, revenues and recoveries. Localised areas of the deposits were excluded due to proximity to groundwater, surface water catchments, community or environmental constraints.

The results of the pit optimisations were used for production scheduling and economic evaluation. The mining method selected is truck and shovel which is currently successfully used at existing Sierra Rutile Limited (SRL) Area 1 operations. Budget estimates have been received from 3 West African contractors and benchmarked against other West African operations to determine costs estimates. The ore will be hauled to central MUP locations where the oversize is removed before the sand and fines are pumped to a WCP located centrally to the Sembehun deposits.

New infrastructure will be required at the Sembehun operations for access and to produce a heavy mineral concentrate (HMC) however existing SRL infrastructure in Area 1 will be used for mineral separation and product handling. The recovery assumptions used for Sembehun were assessed in detail in Pre-Feasibility and Definitive Feasibility studies through test work and align closely to those at the existing Area 1 operation.

Modifying Factors

Modifying factors such as mining dilution and ore recovery have been applied from historical Area 1 performance. Processing recoveries and operating costs are based on test work, estimates developed during feasibility studies and current Area 1 costs.

Capital estimates are based on a combination of estimates developed during the DFS as well as factored estimates based on changed designs or quantities. Existing infrastructure will be utilized for mineral separation and some support services. The existing Nitti Port infrastructure will be utilized to export final product.

Operating costs are primarily based on the SRL budget with the exception of mining and wet concentrator plant (WCP) processing which have been estimated based on plant size, power usage and expected maintenance costs. Power supply is proposed to be by toll contractors. The price assumptions are based on TZMI long-term price forecasts. TZMI are an independent consulting company specialising in mineral sands.

The project has a positive NPV.

Cut-off grades

The cut-off grade has been calculated using optimization software and an individual cut-off grade applied to each block within the model. The calculations consider overall rutile grade and other assemblage grades, operating costs, recoveries and modifying factors. An economic optimization is performed to determine if a block is viable to mine, and therefore be included in the Ore Reserves.

Processing

The first stage processing that produces the HMC is a well-tested and proven methodology and currently exists at SRL operations, Iluka and other mineral sands operations around the world.

The metallurgical separation process also utilises known technology where the performance and recovery of the mineral products has been well established by SRL and Iluka in current and past operations.

The current mining operations produce a rutile product to specification and the planned Sembehun Ore Reserves are expected to continue to do the same.

Competent Persons Statement

The information in this report that relates to Ore Reserve estimates is based on information and supporting documentation prepared by Mr Andrew Walkenhorst who is a member of the Australasian Institute of Mining and Metallurgy (AUSIMM) and a permanent employee of Iluka Resources Limited.

Mr Walkenhorst has sufficient experience that is relevant to the styles of mineralisation and types of deposits under consideration, and to the activity which is 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 JORC Code 2012 Edition. Mr Walkenhorst consents to the inclusion in this release of the matters based on the information in the form and the context in which they appear. Mr Walkenhorst is a shareholder of Iluka.

Appendix 1

JORC Code 2012 edition – Table 1 Commentary

Section 1: Sampling Techniques and Data - Sembehun Group Deposits

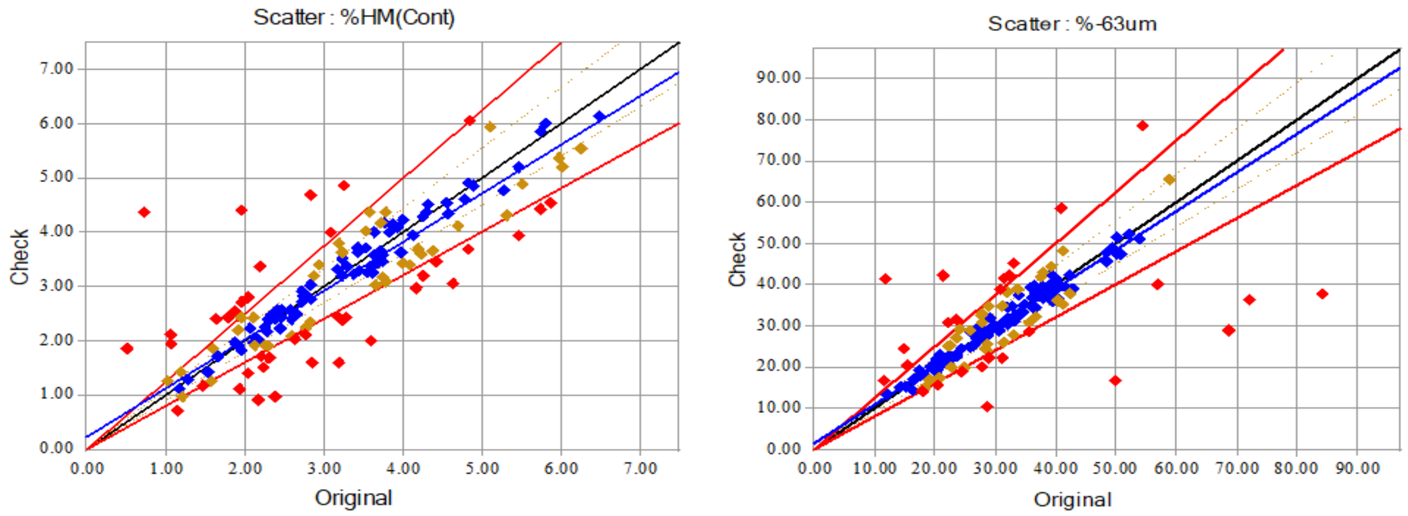
(Criteria in this section apply to all succeeding sections.)

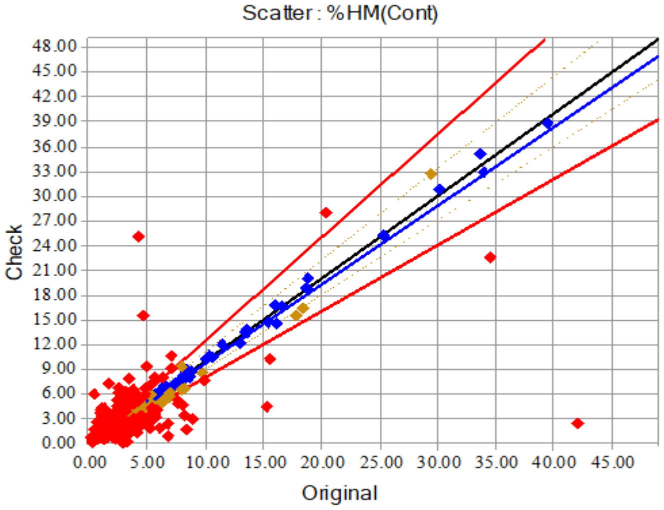
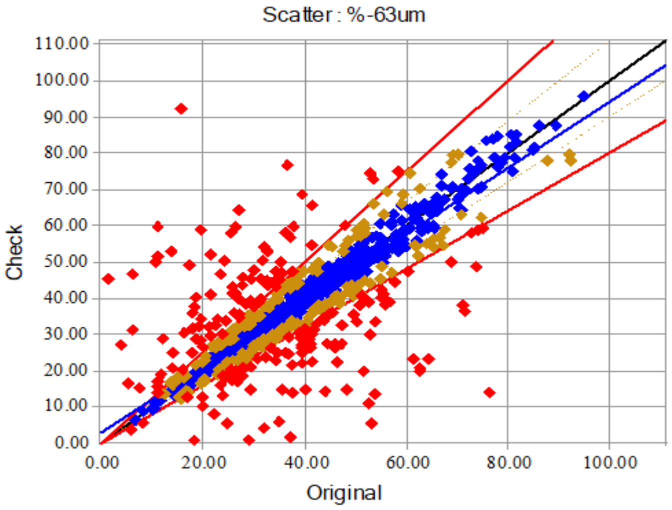
Criteria	Commentary
Sampling techniques	The Sierra Leone rutile deposits have been explored by a number of drilling methods and supporting equipment including Hollow Flight Auger (HFA), Reverse Circulation Aircore (AC), Stitz Drill, Bangka Drill and Aluminum Derrick Tripod Rig. A total of 48,422.4m of drilling in 5,048 holes was completed on the Sembehun deposits. The samples are geologically logged on site and 2kg to 4kg of sample is obtained from the HFA, Stitz, Tripod and Banka drilling, or through the use of a rotary splitter in the case of the AC drilling. Sample lengths are typically 0.2 to 1.5m intervals and all the drill sample is presented for sampling. Smaller sample interval lengths were adopted to reduce the influence of high grade residual topsoil or exclude basement material. All samples were submitted for assay. The mineralisation is determined by both visual inspection of panned sample and laboratory assays. No geophysical methods were used in the determination of the Sembehun Mineral Resources. Samples were analysed by industry typical methods for Heavy Minerals (HM) at the on-site laboratory attached to the Mogbwemo Mineral Separation Plant in Sierra Leone. Typical methodologies for determining HM and rutile have been used for over the past 50 years although the procedure has seen significant variation. Prior to disruption in the 1990s the method for sample analysis entailed oven drying, weighing, attritioning and desliming at 250 screen Tyler mesh (~60 µm). Oversize material was screened off at +1mm and +9.5mm. At times screening of the OS was also done at +4.8mm to provide resolution on the coarse OS material. A split of the 63µm to 1mm “sand” fraction for each sample was then subject to magnetic fractionation and the weight of mag and non-mags recorded. The non-magnetic fraction was then pulverised and a fused bead analysed by MRS 400 XRF for TiO_2, Cr_2O_3, V_2O_5, Fe_2O_3 and ZrO_2. A Leco analysis was also carried out on a sub-sample to determine Sulphur content. Compositing of the sand fraction for samples from each drill hole was done which was then subject to Long Set screening. Also, a subsample of the sand was subject to float sink determination with the composite HM subject to magnetic separation. The magnetic and non-magnetic splits were subjected to point count analysis and a further sub-sample of the non-magnetic HM was then pulverised, pelletised and analysed by XRF analysis. For exploration done from restart of operations in about 2006 through to 2018, the rutile was determined in the same manner with XRF analysis of a split of the non-magnetic sand fraction. The XRF analysis of the non-magnetic sand fraction was done on a fused bead until 2011 and a pressed powder “pellet” from 2011 to 2018 to simplify the analysis process and reduce costs. A second split of the sand fraction from the samples for each drill hole was subjected to heavy liquid separation with the HM from each sand fraction combined to provide a composite HM sample for each drill hole. The HM composite was then subjected to Long Set screening to provide sizing information on the HM. The HM fractions from the Long Set sizing were recombined and subjected to magnetic separation with XRF analysis and grain counting performed on the magnetic and non-magnetic fractions. A Leco sulphur determination was also done at times on a split of the HM fraction. The XRF and grain counting was used to determine the full assemblage along with contaminants and trash mineral species.

Criteria	Commentary
	Between 2011 and 2017, TiO_2 analysis supporting determination of the rutile content was from XRF analysis of pressed pellets. The pressed pellets are prone to analytical error resulting from particle size and matrix and mineralogical effects. Analysis of over 250 duplicate samples from a number of deposits using alternative techniques, such as wet chemical analysis or XRF of fused beads, has shown a significant low bias for TiO_2 resulting in an under-call of rutile by about 10% to 15%. This method of analysis was used during exploration of the Kamatipa and Gbap Deposits from 2015 to 2017. A correction factor was applied to the rutile assays generated during this time on Kamatipa and Gbap. The correction factor is based on a statistical study in 2015 by Mark Button, an independent geological consultant to SRL. Two linear algorithms were developed by Button to adjust the TiO2 data: • for Pressed Pellet TiO_2 >1%: Adjusted TiO_2 = (0.937) * Pressed Pellet TiO_2 + 0.948 • for Pressed Pellet TiO_2 <1%: Adjusted TiO_2 = (90.815) * Pressed Pellet TiO_2 + 0.217 A revised analysis method was adopted for the exploration done after 2018, in part to negate the bias associated with the analysis of pressed pellets. This comprised the compositing of weighted HM proportions of multiple samples from lithological zones with similar geological and grade characteristics (rather than the previous drill hole unique composites). The HM composite is then subjected to Long Set sizing, and magnetic separation. The magnetic and non-magnetic fractions are analysed by XRF on a fused bead, with grain counting done on an ad hoc basis as required. A Leco sulphur determination is done on the non-magnetic HM fraction. The mineral assemblage species including rutile, ilmenite, zircon and monazite along with magnetic others and non-magnetic others are calculated using stoichiometric assignment of key chemical analytes. The mineral assemblage is then assigned to the drill data file based on the composite identifier. Nearly 1,900 composites using the revised method were designed and analysed during the 2019 and 2020 exploration programmes at Sembehun.
Drilling techniques	The Sierra Leone rutile deposits were explored using a number of drilling methods and supporting equipment including Hollow Flight Auger (HFA), Reverse Circulation Aircore (AC), Stitz Drill, Mechanical Bangka Drill and Aluminum Derrick Tripod Rig. A total of 48,422.4m of drilling was completed on the Sembehun Group rutile deposits. The Stitz drilling, which supports a portion of the Inferred Mineral Resource at Gbap is sampled via slots in the sample barrel and is recognised as being prone to contamination from previously intersected substrate. Other short falls of the Stitz drilling include the inability to penetrate more competent lateritic material and a 6m depth limitation. The resource estimates for mineralisation defined by the Stitz drilling, which was used prior to 1970, were deemed to have a low resource confidence and classified as Inferred. Only a small portion of the Gbap Deposit comprising ~2% of the total reported rutile resource for Sembehun is now based on information from the historical Stitz drilling and does not have any material impact on the Sembehun Mineral Resource estimate. The hole diameter is typically 53mm to 76mm for the HFA and AC drilling and all holes were drilled vertically. The diameter of the drillhole for other methods is 40mm to 53mm. A summary of the drilling and method is given in the table below.

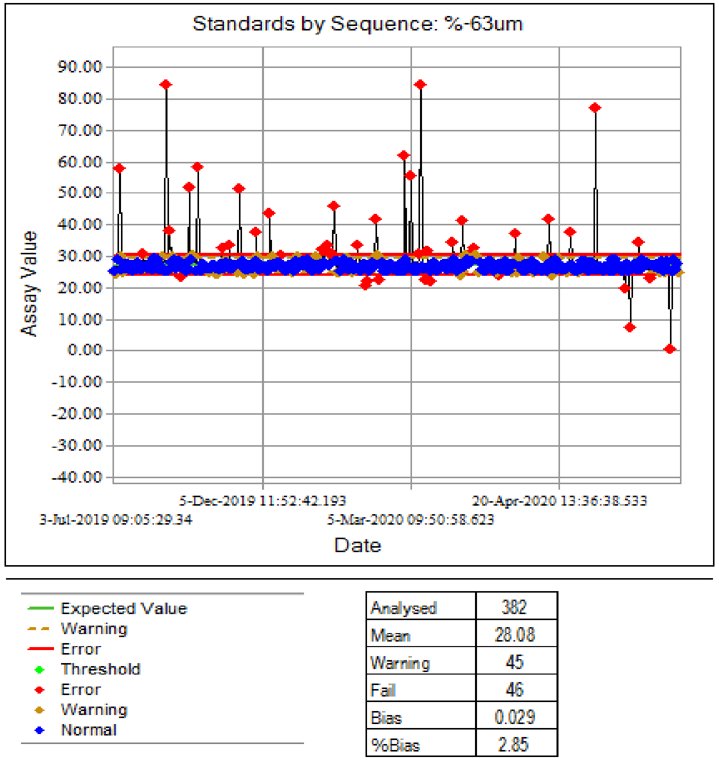
<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td></td><td>
<table>
<tr><th>Year</th><th>Holes</th><th>Metres</th><th>Assays</th><th>Metres (%)</th><th>Comment</th></tr>
<tr><td>Pre 1980</td><td>37</td><td>150.0</td><td>59</td><td>0.2</td><td>Stitz drilling, Gbap</td></tr>
<tr><td>1980 - 1990</td><td>815</td><td>7,602.1</td><td>5,937</td><td>21.2</td><td>Hollow Flight Auger on all deposits except Gbap</td></tr>
<tr><td>2012</td><td>526</td><td>7,471.5</td><td>1,585</td><td>5.7</td><td>AC drilling on Benduma, many assays missing</td></tr>
<tr><td>2015</td><td>357</td><td>2,362.0</td><td>1,536</td><td>5.5</td><td>Auger drilling Kamatipa</td></tr>
<tr><td>2016</td><td>428</td><td>3,312.9</td><td>2,268</td><td>8.1</td><td>Auger and AC drilling Kamatipa</td></tr>
<tr><td>2017</td><td>199</td><td>1,394.8</td><td>939</td><td>3.4</td><td>Auger and AC drilling Kamatipa</td></tr>
<tr><td>2019</td><td>2,011</td><td>19,599.6</td><td>11,857</td><td>42.3</td><td>Major drilling program on all deposits except Gbap. Contract AC drilling at Komende and Benduma, Auger drilling at Kamatipa, Dodo and Kibi.</td></tr>
<tr><td>2020</td><td>675</td><td>6,529.5</td><td>3,821</td><td>13.6</td><td>Major drilling program on Benduma, Dodo and Kibi. Contract AC drilling on Benduma, Auger drilling at Benduma, Dodo and Kibi</td></tr>
<tr><td>Total</td><td>5,048</td><td>48,422.4</td><td>28,002</td><td>100</td><td></td></tr>
</table>
</td></tr>
<tr><td><i>Drill sample recovery</i></td><td>All drill samples are qualitatively logged in accordance with company (SRL) standard operation procedures which record commentary on the sample recovery and lithological qualifiers.
All drilling is supervised and logged by company geologists. If sample recovery is compromised a decision is made at the time of drilling whether to redrill the hole. The weight of the sample is recorded at the laboratory and monitored by the site geology section staff to confirm the representivity.
Sampling by auger methods generally provides a representative sample. In some instances a 50:50 split of the auger samples is done to produce duplicate samples for analysis. The AC drilling has been shown to give a low bias of the oversize content. The wet clay rich nature of the Sierra Leonean rutile deposits tends to result in samples “holding up” in the sample cyclone and rotary splitting equipment. This results in potential contamination and reduced sample representivity for the AC drilling. For these reasons the HFA drilling is favoured over AC drilling.</td></tr>
<tr><td><i>Logging</i></td><td>All samples are geologically logged by site geologists at the time of drilling. Information recorded includes the length and diameter of the sample, sample recovery, colour, lithology, lithological characteristics and qualifiers relating to slimes and oversize characteristics.
The logging is considered qualitative and is appropriate for supporting the Mineral Resource estimates. The geological logging is also used as a guide to the allocation of samples assigned to metallurgical composites for assemblage determination. No geological logs are available for the Stitz drilling carried out during the 1960/70’s due to the destruction of these records during civil unrest. This was taken into consideration when assigning the JORC Code Resource Classification for the Mineral Resources supported by this drilling.</td></tr>
<tr><td><i>Sub-sampling techniques and sample preparation</i></td><td>A number of diamond core drill holes were completed on the Kamatipa deposit in 2019 as part of geotechnical and metallurgical investigations but were not used in the estimation of Mineral Resources.
The entire sample returned from the HFA drilling is submitted for assay, while the sample material from AC drilling is presented to a rotary splitter mounted beneath a cyclone at the time of drilling. About a ¼ split weighing 1.5 to 2.0kg is taken for analysis from the AC drilling. As previously discussed there is potential for the sample to “hang-up” on the sampling equipment due to the wet clayey nature of the material hosting the resource. As a result, the use</td></tr>
</table>

Criteria	Commentary
	of the AC drilling in resource delineation for the Sembehun Group Deposits was minimised as much as possible. AC drilling methods were used extensively in testing of the Komende Deposit and to a lesser extent for some drilling done on Benduma during the 2019 and 2020 exploration programmes. Samples presented to the SRL site laboratory are collected in pre-labelled calico bags. Unique sample identifiers are recorded on metallic tags and placed in the sample bag for validation. Prior to 2018 duplicate samples were taken from the HFA drilling at the rate of about 1 for 20 exploration samples by taking a halve split of the material returned in the sample tube. Anomalous results are investigated for obvious errors and if none are apparent the associated sample batch is re-analysed. For exploration after 2018 QA/QC involved insertion of field standards and blanks, the collection of field duplicate samples and drilling of twinned holes. The correlation of rutile grades was not possible as the rutile value was determined from a composite sample. However, the representivity of the sample was supported by other analytical values including, the slimes, OS and HM assay values from the duplicate samples. The sample size is considered appropriate for the material hosting the mineralisation, which is supported by Gy's sampling theory and the modest variability of duplicate sample results.
Quality of assay data and laboratory tests	The analysis method used is industry standard for mineral sands and appropriate for the style of mineralisation under consideration. Wet sieving and screening of the sample was used for all samples since the recommencement of operations in 2006. The method used prior to 1990 is unknown but communication with site staff indicate these samples were cone and quartered and a sub-sample washed and decanted. HM determination was done using Tetra Bromo Ethane (TBE) prior to 2006 on a sand sub-sample of approximately 30 to 50 grams. After 2006 heavy liquid separation was done using Lithium Sodium Polytungstate (LST) on a sand sub-sample of approximately 100 grams. No geophysical information was used in the estimation of Mineral Resource estimates for the Sembehun Rutile deposits. No QA/QC information is known for exploration carried out prior to 1995. This data represents about 18% of the assay records for Sembehun but is progressively being replaced with detailed infill exploration. Limited QA/QC work was done on exploration at Sembehun during the period from 2015 to 2018. This comprised collection of 145 duplicate samples at the rate of 1 duplicate per 33 routine exploration samples. No discernable bias was noted in the duplicate samples.

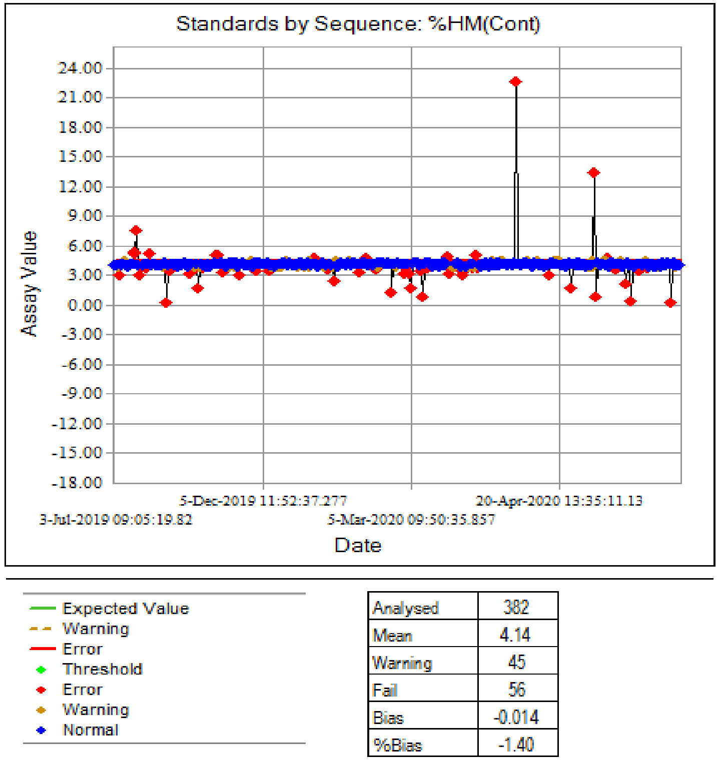
Criteria	Commentary
	 --- +/- 10% difference limit; --- +/-20% diffence limit; --- sample data regresion line. More systematic quality controls were adopted during the exploration programmes carried out in 2019 and 2020, which involved the insertion of field standards and blanks, duplicate sampling and the drilling of twinned holes. • 855 field duplicates pairs were analysed at a rate of 1 per 21 routine exploration samples • 382 field standard samples were submitted at rate of 1 per 47 routine exploration samples • 386 field blank samples were submitted at rate of 1 per 46 routine exploration samples No discernable bias was present in the duplicate field pairs although the precision appears to be compromised with inground variability and possible sampling errors. Some outliers will be a function of the influence of OS material in gravelly and lateritic samples.

Criteria	Commentary
	 Scatter : %HM(Cont)  Scatter : %-63um --- +/- 10% difference limit; --- +/-20% diffence limit; --- sample data regresion line. The standard field samples analysed show a slight low bias for HM and a slight high bias for slimes overall. A considerable number presented as “fails” with the laboratory value being outside the expected value limits set by the expected value +/- 3 Standard Deviations (SD). The fails were traced to a number of possible causes including worn equipment or probable sample swaps (in laboratory or in field). Standard samples returning a “fail” value were reviewed and appropriate corrective action involving repeat analysis or database correction in the event of obvious sample mix ups. Typical Standard result charts are shown below.

Criteria	Commentary



Analysed	382
Mean	28.08
Warning	45
Fail	46
Bias	0.029
%Bias	2.85

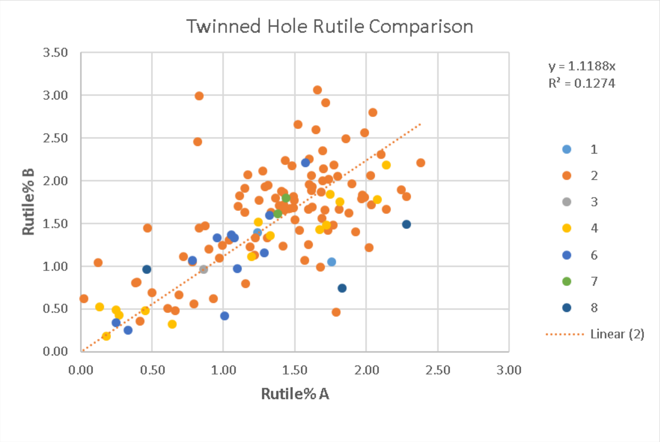


Analysed	382
Mean	4.14
Warning	45
Fail	56
Bias	-0.014
%Bias	-1.40

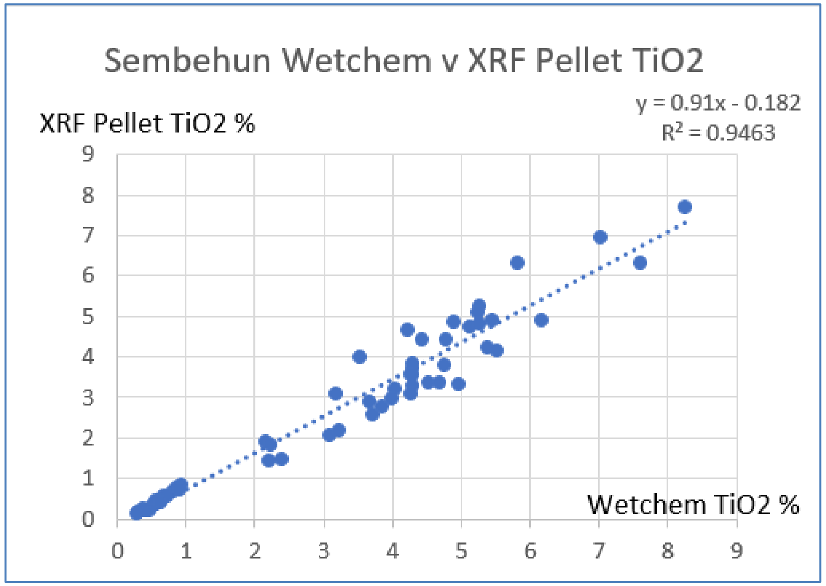
The majority of samples from exploration at Sembehun were assayed using MRS 400 XRF, analysing a pressed pellet from 2015 to 2018 or a fused bead after 2018.The XRF analysis on pressed pellets was demonstrated to yield a low bias for TiO_2 resulting from particle size and matrix and mineralogical effects. Analysis of over 250 duplicate samples from a number of deposits using alternative techniques, such as wet chemical analysis or XRF of fused beads, has shown a significant low bias for TiO_2 resulting in an under-call of rutile by about 10% to 15%. This method of analysis was used during exploration of the Kamatipa and Gbap Deposits from 2015 to 2017. A correction factor was applied to the rutile assays generated during this time on Kamatipa and Gbap based on a statistical study in 2015 by Mark Button, an independent geological consultant to SRL. Two linear algorithms were developed by Button to adjust the TiO_2 data:

- for Pressed Pellet TiO_2 >1%: Adjusted TiO_2 = (0.937) * Pressed Pellet TiO_2 + 0.948
- for Pressed Pellet TiO_2 <1%: Adjusted TiO_2 = (90.815) * Pressed Pellet TiO_2 + 0.217

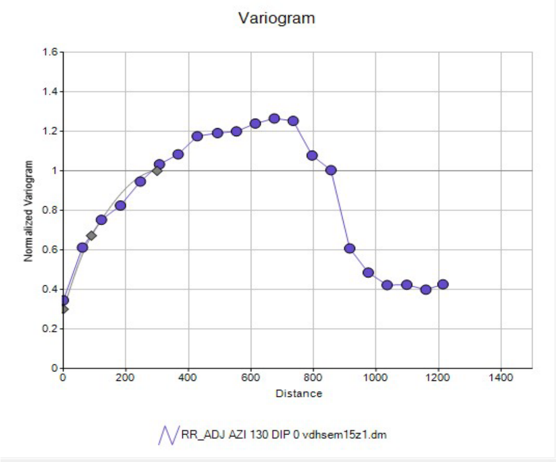
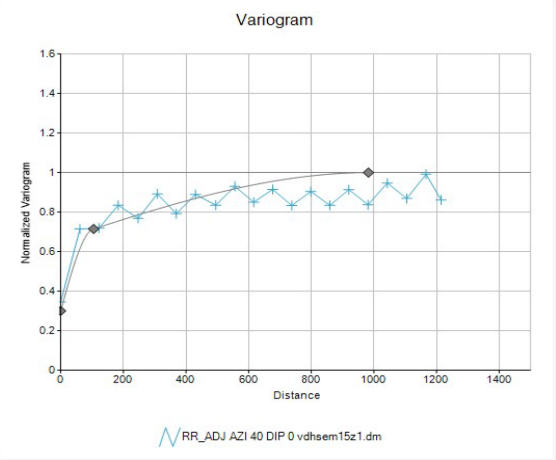
Further twinned drilling was carried out on the Kamatipa Deposit during 2019 which provided support for the correction factor proposed by Button. Approximately 65%of the Kamatipa and 80% of the Gbap resource estimate, representing about 18% of the total Sembehun Mineral Resource, is supported by rutile values determined from XRF analysis of pressed pellets. If Gbap is excluded then the amount of the Sembehun Mineral Resource supported by rutile determined from XRF analysis of pressed pellets is less than 10%. The influence of the correction factor is significant to the Kamatipa

Criteria	Commentary
	Mineral Resource estimate but diluted in relation to the overall Sembehun mineralisation. Overall the correction factor applied is expected to provide a fair representation of the rutile value. The correction factor is used to support the Mineral Resource estimate at the Gbeni deposit where current mine production figures show good overall agreement to the estimate. Grain counting (500 point) on the HM was also used to support the assemblage determination. A summary of the average rutile assays for twinned drill holes at Kamatipa is shown in the chart below.  1 = 1980s v 2012 2 = 1980s v 2015 3 = 1980s v 2019 4 = 2016 v 2016 5 = 2016 v 2017 6 = 2017 v 2017 7 = 2016 v 2019 8 = 2019 v 2019 Difference in the twinned hole pairs could be due to inground variability (particularly with the influence of coarse OS), possible sampling issues, questionable accuracy of hole locations, particularly in relation to holes drilled in the 1980s, slightly differing hole lengths and rutile values determined from different analytical procedures. The onsite SRL laboratory also has an internal QA_QC regime involving the analysis of: • an in house HM standard sample; • an in house magnetic separation standard; • a sizing analysis standard material; and • an in house XRF standard(s). The laboratory standards are analysed on every day and night shift with the exception of the sizing standard which is processed on a daily basis. The QA/QC data from the 2019 and 2020 exploration programmes indicates no significant bias is apparent although precision is modest. The data is acceptable for supporting the Sembehun Mineral Resource estimate.
Verification of sampling and assaying	All results are reviewed by the members of the onsite Geology Team before data is presented for loading to the GDMS. Historical data from the 1980s and retained in SRL spreadsheets was compared to the original data retrieved from site following the insurrection. A high level review of the data for Benduma, Dodo and Kibi Deposits was carried out by Optiro Mining Consultants prior to resource estimation for these deposits. Minor issues were noted

Criteria	Commentary
	and these were either corrected or data annulled for resource estimation. A total of 511 twinned drill hole locations are noted in the Sembehun dataset. The large number of twinned drill holes are a result of: • shifting of the 1980s drill collars resulting in these being co-located with more recent holes; • deliberate redrilling of older holes in more recent programmes; and • deliberate twinning with holes drilled contemporaneously in time and space. Only 150 valid twinned pairs have viable data for comparison as the 2012 drill holes do not have reliable rutile values and were excluded. A direct sample comparison is not possible because of differing sample lengths resulting from imperial and metric recording regimes so weighted average statistics were compared. The pairs drilled recently and in concurrent programmes returned a reasonable comparison for TiO_2 analysis (3.79 v 3.74) and rutile grade (1.06 v 1.02). The geomean for the rutile values was 0.83 v 0.82 indicating some outliers exist in the twinned dataset. Three chronologically distinct databases existed at SRL at the time of acquisition by Iluka: • a historical analogue database, which comprises analogue records for reconnaissance drilling completed in the early 1970's. It comprises various reports and maps which contain the information supporting the resource estimates for the "satellite" deposits including a small portion of the Gbap Deposit. • a historical digital database which contains information from drilling conducted over ML011/72 and ML105/72 prior to 1995. The information is preserved as text files containing drill hole interval, lithology, limited assay data, and historical point count data. The information in this database was originally recorded as imperial units of measurement. Check drilling was carried out during 2002 by MDA which verifies this information. • the "pre-acquisition" digital database which retains records for data collected since 2002 in a metric data format. The data was hosted in MS Excel spreadsheets monitored by the site resource geologist. Since acquisition a concerted effort has been made to collate all available assay data into Iluka's Geology Data Management System (GDMS), operating via an acQuire^{TM} software interface. Where available, original digital assay data was imported to ensure the data is accurately recorded and free of any transcription or spreadsheet manipulation errors. Otherwise the digital data was imported directly from the spreadsheets. Validation of the data against historical information was carried out as datasets were imported. This process resolved some errors in the historical data, mostly relating to absent data and rounding/truncation errors. It also allowed for the "digital" capture of additional information not included in the spreadsheets. Currently field logging data is entered directly into Toughbook field computers which is digitally transferred to the Geology Database with upload managed with the acQuire^{TM} Database Management Software. Laboratory data is presented in spreadsheet files exported from the laboratory's CCLAS database and loaded into the GDMS. Some additional automated validation routines are run on the data during loading to ensure correct hole identifier and sample identifiers, and analytes added to 100 percent where expected. No adjustment is made to the data within the datasets. Adjustment to the TiO_2 grades from the 2015 – 2017 analyses used in the grade interpolation was done to compensate for the low TiO_2 bias associated with the XRF analysis on pressed pellets employed at that time for cost efficiency and time expediency. The pressed pellets were demonstrated to be prone to a low bias due to matrix and mineralogical effects. Analysis of over 250 duplicate samples from a number of deposits using alternative techniques, such as Wet Chemical analysis or XRF of fused beads, has shown a significant low bias for TiO_2 resulting in an under-call of rutile by about 10% to 15%. This method of analysis was used during exploration of the Kamatipa and Gbap Deposits from 2015 to

Criteria	Commentary
	2017. A correction factor was applied to the rutile assays generated during this time on Kamatipa and Gbap. The correction factor is based on a statistical study in 2015 by Mark Button, an independent geological consultant to SRL. Two linear algorithms were developed by Button to adjust the TiO2 data: • for Pressed Pellet TiO_2 >1%: Adjusted TiO_2 = (0.937) * Pressed Pellet TiO_2 + 0.948 • for Pressed Pellet TiO_2 <1%: Adjusted TiO_2 = (90.815) * Pressed Pellet TiO_2 + 0.217 TiO_2 values from pressed pellet applied to 4743 samples in the Sembehun dataset of which 4589 were used in resource estimation equating to 17% of all the rutile values supporting the Mineral Resource estimate for the Sembehun Group Deposits. These are solely from exploration of the Kamatipa and Gbap deposits during the period from 2015 to 2017. Wet chemical analysis of duplicate samples included a number of samples from Kamatipa, which confirmed a low bias for the pressed powder TiO_2 XRF analyses at Sembehun. Based on the repeat TiO_2 analysis using more reliable methods, general agreement with infill drilling and reconciliation data from active mine sites, the adjusted TiO2 value for exploration from 2015 to 2017 was adopted in the rutile estimates for Kamatipa and Gbap. 
Location of data points	Each borehole position is located using company owned Leica Viva GS10 GPS equipment, with X, Y, Z accuracy of +/-0.5m. Historically SRL worked within the Clarke 1880 datum, but has subsequently converted all survey information into the World Geodetic System (WGS) 1984. All data points are recorded in the UTM Zone 28 (Northern Hemisphere) using the Sierra Leone National Grid as per the transformation given below.

<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td></td><td>
<table>
<tr><th>Survey Descriptor</th><th>Projection Information</th></tr>
<tr><td>Coordinate system</td><td>UTM Zone 28, Northern Hemisphere</td></tr>
<tr><td>Earth projection</td><td>8, 104, “m”, -15, 0, 0, 9996, 500000, 0”</td></tr>
<tr><td>Projection</td><td>Transverse Mercator (Gauss-Kruger)</td></tr>
<tr><td>Datum</td><td>World Geodetic System, 1984</td></tr>
<tr><td>Ellipsoid</td><td>WGS 84</td></tr>
<tr><td>Units</td><td>Metres</td></tr>
<tr><td>Origin, Longitude</td><td>-15”</td></tr>
<tr><td>Origin, Latitude</td><td>0”</td></tr>
<tr><td>Scale factor</td><td>0.9996</td></tr>
<tr><td>False Easting</td><td>500,000</td></tr>
<tr><td>False Northing</td><td>0</td></tr>
</table>
<p>During 2013 LiDAR surveys were conducted over the SRL Mining Leases producing data with a vertical resolution of +/- 0.15 m. Drill collar points are projected to the LiDAR surface for the purpose of resource modelling. This provides a solid foundation for the spatial location of data points and subsequent mine planning.</p>
<p>Review by company geologists of the historical holes drilled in the 1980’s twinned with recent drill holes at Sembehun alluded to a poor correlation of collar height, hole depth and assay grades. It was concluded from a correlation of the historically surveyed RL’s and the LiDAR elevation values that the historical collar locations had been shifted by a Grid unit (400ft/~122m to the south east). The shifted collar positions were adopted and used in the current resource estimate. The correction of the historical collar locations resulted in a more rational basement position and improved geological and grade continuity.</p>
</td></tr>
<tr><td><i>Data spacing and distribution</i></td><td>
<p>Exploration results are not being reported.</p>
<p>The drilling prior to 1995 was conducted on regular grid spacing to define the mineralisation and support Mineral Resource and Ore Reserve estimation. Initial drilling is conducted on a 488m by 488m (1600ft) grid array which is progressively infilled to 244m (800ft) by 244m and to. 122m by 122m grid spacing, often with an additional hole at the centre of each 122m grid block.</p>
<p>Post 2002 drilling campaigns were phased, starting with a 240m by 240m drill spacing with subsequent infill to 120m by 120m spacing. Drilling was done at a 60m by 60m spacing, determined from geostatistical analysis as adequate to support a JORC Code Measured Resource Classification. The drill spacing in conjunction with rutile kriging variance is used to support the application of an appropriate resource classification. Typically a drill grid spacing of 60m by 60m or less supports a Measured Resource classification, while drilling from 60 to about 200m spacing supports an Indicated Resource classification. Mineral Resources defined by drilling spaced at greater than ~200m are typically awarded an Inferred Resource classification. Note that other factors are also considered when allocating a JORC Code Resource Classification.</p>
<p>Variography was done on the Sembehun dataset to provide an estimate of grade continuity. Normal scores variograms show ranges of up to 1000m in the along strike (040^{O} orientation) and 250m across strike (130^{O} orientation) for the mineralised host unit. If 2/3rd the population variance (the sill) is used</p>
</td></tr>
</table>

Criteria	Commentary
	as a guide for supporting Measured Resources, then the drilling grid should be spaced at no more than 80m by 80m to support Measured Resources.   Compositing of samples was used to assist in assemblage determination. Weighted composites of the HM fractions from either individual drill holes or geologically similar units are combined and subject to magnetic fractionation and XRF analysis of the magnetic and non-magnetic components. The mineral assemblage, including rutile, ilmenite and zircon content is currently determined from weighted HM composites of the geologically similar materials, often from several adjacent drill holes. The rutile (and other assemblage components) is then assigned to individual samples on the basis of the HM content of each sample.
Orientation of data in relation to geological structure	All drilling has been done vertically, which is perpendicular to the mineralisation and geology orientation so no bias is present.
Sample security	At the time of logging, duplicate aluminum tags were inserted into the sample bag. Bags are placed in sacks labelled with the corresponding drill hole ID. The geologist in charge prepares a sample dispatch form usually on a daily basis, which is presented to the laboratory with the samples corresponding to that period of drilling. All samples were transported directly from the site of drilling to the SRL onsite laboratory ensuring custodianship was maintained.
Audits or reviews	No external review of the sampling techniques is known. All sampling is conducted as per internal site procedures under the supervision of the on-site geologists. The data was reviewed prior to resource estimation to exclude data considered unreliable or redundant. The data from the 2012 exploration drilling programmes had the rutile and other assemblage values annulled although the slimes, sand, OS and HM values were retained. Twinned drill hole pairs were reviewed with one removed prior to grade interpolation.

Section 2: Reporting of Exploration Results - Sembehun Group Deposits

(Criteria listed in the preceding section also apply to this section.)

<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td><i>Mineral tenement and land tenure status</i></td><td>
<p>The Sierra Leonean Rutile deposits are covered by 7 Mining Leases which are wholly owned by Iluka through its subsidiary company Iluka Investments (BVI). At the time of reporting it is noted that IFC holds a 10% equity interest in Iluka Investments (BVI). The Sembehun deposits are within 2 tenement areas (ML015/72 and ML015/72-Ext) under License Number 2134.</p>
<table>
<tr><th>Licence Name</th><th>Licence Number</th><th>Area (km²)</th><th>Date Issued</th><th>Expiry Date</th></tr>
<tr><td>ML011/72 – Area 1</td><td>2134</td><td>290.60</td><td>01-Jul-1984</td><td>23-Jan-2039</td></tr>
<tr><td>ML012/72 - Gambia</td><td>2134</td><td>17.50</td><td>01-Jul-1984</td><td>23-Jan-2039</td></tr>
<tr><td>ML013/72 - Jagbahun</td><td>2134</td><td>20.65</td><td>01-Jul-1984</td><td>23-Jan-2039</td></tr>
<tr><td>ML014/72 - Nyandehun</td><td>2134</td><td>5.64</td><td>01-Jul-1984</td><td>23-Jan-2039</td></tr>
<tr><td>ML015/72 - Sembehun</td><td>2134</td><td>73.63</td><td>01-Jul-1984</td><td>23-Jan-2039</td></tr>
<tr><td>ML015/72 – Sembehun Ext</td><td>2134 Ext</td><td>125.10</td><td>17-Sep-1991</td><td>23-Jan-2039</td></tr>
<tr><td>ML016/72 – Taninahun Boka</td><td>2134</td><td>12.47</td><td>01-Jul-1984</td><td>23-Jan-2039</td></tr>
<tr><td>ML017/72 - Mosavi</td><td>2134</td><td>13.32</td><td>01-Jul-1984</td><td>23-Jan-2039</td></tr>
<tr><td>Total</td><td></td><td>558.91</td><td></td><td></td></tr>
</table>
<p>The tenements give the right to mine rutile, zircon, ilmenite, monazite, columbite, graphite, garnet and other titanium bearing minerals. Provision to mine is made under the Sierra Rutile Agreement (Ratification) Act of 2002, whereby payment of Surface Rent is made on all land used by the company, with rental payments distributed to the landowner, Paramount Chiefs and Native Administration.</p>
<p>Each of the 7 Mining Licenses is valid for a period of 33 years from the commencement of mining in 2006 and may be extended by a further (minimum) term of 15 years.</p>
</td></tr>
<tr><td><i>Exploration done by other parties</i></td><td>
<p>The author acknowledges the considerable effort by many teams and individuals to carry out the exploration over the Sembehun area since discovery in the 1960s. All this work was done under the Sierra Rutile Limited company name. In the compilation of the mineral estimates, the subject of this report, information from the following qualified reports was used and accordingly are acknowledged:</p>
<p>ACA Howe, 2005: “Sierra Rutile, Sierra Leone; Scoping Study on the Mogbwemo Wet Plant Tailings and Other Satellite Deposits”. ACA Howe, Unpubl. Rpt.</p>
<p>Author unknown. 1996. “Mineral Sands Mining in Sierra Leone”. Internal SRL Rept. Unpub.</p>
<p>Boli, C., 1982. "Regional Reconnaissance Exploration". Internal SRL Rept. Unpub.</p>
<p>Button, MTG., 2016. “Competent Persons Report, Mineral Resource Statement November 2016”. Internal SRL Rept. Unpub.</p>
<p>Button, M., 2016: “Pressed Pellet TiO2 Bias”. Unpublished SRL file note.</p>
<p>Hanvey, DAR:, 1973: “SRL Project Phase II Report On Exploration”. Internal SRL Rept. Unpub.</p>
</td></tr>
</table>

Criteria	Commentary
	Hirshberg, 1970: “Various maps of Stitz drilling and Rutile Grades”. Internal SRL Rept. Unpub. Mackenzie, DH Dr. 1961. Geology and Mineral Resources of Gbangbama Area. Geological Survey of Sierra Leone, Bulletin No. 3. Mining Development Associates (MDA) 2002,"Resource Estimates of the Lanti, Gangama, Gbeni, and Sembehun Heavy Mineral Sands Deposits, Sierra Leone. MDA 2002, unpub. Mining Development Associates (MDA) 2003, "Sierra Rutile Limited, Resources, Reserves, Mine Plans, Site Observations”. MDA 2003, unpub. Ransome, I., 2010, “Resource and Reserve Estimates, Sierra Rutile Limited”. Internal SRL Rept. Unpub.
Geology	The Sierra Leonean rutile mineralisation is hosted within alluvial and fluvial sedimentary facies of the Bullom Group Sediments. Mineralisation was derived by the erosion of quartzo-feldspathic gneiss of the Precambrian Kasila Group during the Tertiary and redeposited in pre-incised channel systems and alluvial fans flanking topographically elevated areas of the Kasila Group. The host sediments are typically poorly sorted clayey sand and sandy clays with irregular high clay and sand layers. Rubbly surficial laterite development is prevalent through the near surface material of the Bullom Group but does not hinder mining. Friable to competent blocky laterite, which is problematic for mining, is often developed along the margins and flanks of the alluvial material wedged up against variably weathered Kasila Group .
Drill hole Information	The Sembehun database comprises 33,679 records representing 48,422.4m of drilling from 5,048 drill holes . As such it is impractical to provide a tabulation of all the significant intercepts. Significant intercepts are not presented due to the large number of drill holes and (in the context of the disclosure of the Mineral Resource estimate(s)) is not material. The Competent Person confirms that this exclusion does not detract from the understanding of the Report, on the basis that all relevant drill hole information was used in the estimation of the reported Mineral Resources. The distribution of drill holes is presented in Figure 2 in the accompanying text for this announcement. All holes are drilled vertically and as such are perpendicular to the mineralisation.
Data aggregation methods	No cutting of the mineral grades was applied to the modelling for the Gbap, Kamatipa and Komende sub areas. Minimal top cutting of rutile and HM grades was done for Benduma, Dodo and Kibi during resource estimation by Optiro. A total of 22 rutile values and 29 HM values were identified by Optiro as being anomalous and were cut to a grade commensurate for the zone hosting the sample. Cutting of the rutile grades will have virtually no impact on the Mineral Resource estimate for Sembehun. No exploration results are being reported. No metal equivalent values were used in the reporting of mineralisation intercepts or Resource Estimates. The Sembehun Mineral Resources were reported using a 0.25% rutile lower cut-off grade. This has been applied in conjunction with a rutile grade x thickness value of 1. This equates to a minimum thickness of at least 4m of material grading in excess of 0.25% rutile to qualify as reported resource (or for example 2m of material grading greater than 0.5% rutile). This criteria was applied to exclude thin low grade mineralisation that is unlikely to be economic.
Relationship between mineralisation	The geology and geometry of the Sierra Leonean rutile deposits is well understood. The drilling is all done vertically which is perpendicular to the mineralisation orientation, and as a result the intercepts represent true thickness of the mineralisation.

Criteria	Commentary
widths and intercept lengths	No exploration results are being reported.
Diagrams	Drill hole location plans and representative cross sections are presented in the accompanying summary text of this release to assist in the understanding of the rutile mineralisation for Sembehun.
Balanced reporting	Mineral Resource estimates are presented which consider the grade distribution and supersede the reporting of exploration results. No exploration results are being reported as part of this Mineral Resource update.
Other substantive exploration data	The density for different lithology types was determined using a sand replacement technique which was done on mineralised areas in the early 1970s. A number of 3 foot deep test pits were excavated. About a 1 cubic foot volume of material was removed and the volume of the hole determined through sand replacement. This in conjunction with the dry weight of the material removed from the test volume was used to calculate the density of the dry in situ material. The dry density of materials encountered in the Sierra Leone rutile deposits was found to range from 1.57 t/m^3 to 1.73 t/m^3. Composite samples were taken from the HM sink fractions from the HM determinations. The composited samples generate between 40g and 100g of HM which is then subjected to magnetic separation with XRF analysis of the magnetic and non-magnetic fractions to determine the principal valuable mineral species. Substantial bulk samples were collected using large diameter diamond coring in the Kamatipa sub-area. Metallurgical testwork was carried out at Light Deep Earth LDE laboratory in South Africa. Typically the rutile mineralisation is hosted in unconsolidated to mildly cemented or compacted sediments and has been mined with conventional equipment including excavators or bucket ladder dredge for nearly 50 years. Some minor induration is associated with the development of surficial laterite but this rarely impedes mining. The drill logs for Sembehun refer to the formation of harder "blocky laterite" in places. Interpretation of areas dominated by blocky laterite are flagged in the model to allow consideration during optimisation and mine planning. Based on the current interpretation less than 5% of the reported resource is blocky laterite and will not have a significant impact on mining. No deleterious elements are known of. However, significant euxinic iron sulphide development is known to be present in the lower lying portions of the Sembehun deposits adjacent to intertidal/swampy environments. The sulphide is removed using flotation equipment installed at the Mogbwemo MSP and re-deposited below water to prevent oxidation and acidification.
Further work	Future exploration on the Sembehun group deposits will focus on proving up the current mineralisation in a timely manner to support the development of the Sembehun deposits. Exploration will also be carried out to close-off mineralisation which is open in many places. Areas of potential mineralised extension include: • East of Benduma; • Along strike to the south-west of Benduma, Dodo and Kibi where exploration has been restricted by swampy areas associated with the Bagru River; • West of Kibi where a favourable geomorphology is present and drilling has not closed of the mineralisation. Mineralisation in this area may even

Criteria	Commentary
	continue through and join with the Gbap deposit 1 to 2 km to the north west; • To the north west as possible up strike extension of Dodo and Kamatipa; and • In all directions around the Gbap deposit. It is envisaged that exploration for additional mineral resources will be carried out in a timely manner to support future mining operations.

Section 3: Estimation and Reporting of Mineral Resources - Sembehun Group Deposits

(Criteria listed in section 1, and where relevant in section 2, also apply to this section in relation to the resource estimation for the Sembehun Group Deposits.)

Criteria	Commentary
Database integrity	The data undergoes several levels of verification prior to modelling. This includes the interrogation of data for outliers such as: • Non-resource units with lab numbers; • Sample prep vs XRF submissions; • Collar duplication; and • Missing assays. Other forms of interrogation include mineral ratios such as: • The portion of rutile>ilmenite>zircon is seldom violated; • The VHM % (rutile + ilmenite + zircon) is < than the THM %; • Sizing fractions add to 100%; and • The mags + non-mag sand per centages add up to 100%. Also a spatial review of the data is done by viewing plans and cross sections to ensure the drill holes are in valid locations and the assay values corroborate with the lithological distribution. Drill holes in errant locations are easily detected as the line and grid number form part of the hole identifier. Due to the age of the dataset it is apparent that a number of the older analytes were not analysed. In most instances these values are presented as absent but in some instance a “0” value has been errantly substituted for HM%, HM(+70), HM(-70), Fe_2O_3, ZrO_2 and possibly Sulphide. This does not have any impact on the magnitude or robustness of the Mineral Resource estimate for rutile. Statistical analysis was undertaken to check the validity of assay data.
Site visits	A site visit was undertaken by Brett Gibson for 2 days during May 2016. A further two visits were made during August and September 2019. The site visit witnessed the geological structure of the Sierra Leone rutile deposits, the exploration activities and ongoing mining operations. Prior to this the Competent Person (Mark Button) visited the site 2 or 3 times per year and compiled resource risk reviews and site visit reports. Numerous other site visits were undertaken by other Competent Persons since the commencement of mining operations in 1967.
Geological interpretation	The geology of the style of mineralisation under consideration is well understood from supporting exploration data and exposure by mining over the past 50 years. All relevant information was sourced from the drill samples and the interpretations were developed over successive drill campaigns which have included both in-fill drilling within known resources and extensions on the margins of the known deposits. A considerable portion of the data is quite old having come from exploration during the 1980’s. Original hard copies of the drill logs and assay results were destroyed during civil unrest and the only remaining reference to this exploration is from digital files saved from old computer hard drives and a small number of plans and hard copy reports. The assumption is that the survey, geology and assay data in these digital files is correct as there is no way of verifying although modern exploration typically emulates the historical data. The data contained in spreadsheets at the time of acquisition was verified

Criteria	Commentary
	against historical records in Iluka's possession from when Renison Goldfields Corporation (RGC) held a 50% interest in Consolidated Rutile Limited (CRL). Given the current detail afforded by the geological dataset and mining over the past 50 years no other geological interpretation has been considered for the Sierra Leonean rutile deposits. The geological data from borehole logs was used to create a basement wireframe surface, which in conjunction with the topographic surface, is used to constrain the mineralisation to the intersected host alluvial and fluvial sediments. Statistical analysis of each deposit was also undertaken to determine if sub-domaining was required. As a result a low rutile grade zone which is present in the upper part of the stratigraphy, particularly in the south west of the modelled area, was domained separately. Some inconsistency in the depth to basement has resulted from logging in programmes carried out at different times. The 2012 AC exploration drilling at Benduma indicated a greater depth to basement but this was deemed inconclusive and it appears very weathered Kasila Gneiss was mis-interpreted as clayey sediment. Material of uncertain affiliation (Bullom Group as opposed to weathered gneissic basement) was domained separately in the current block model. The sediments hosting the mineralisation appear to become more "mature" with distance from the source topographic highs. As a rule, the rutile content in the sediments decreases with distance from the source. Near the source the host sediments tend to be present as structurally controlled incised valley fill or remnant alluvial terraces. As distance from the source increases and the basement gradient decreases, the deposits tend to present as alluvial fans accreting on a topographically benign coastal plain.
Dimensions	The mineral resources under consideration have a wide variation in physical dimensions. The deposits vary from a few metres to over 20m in thickness, averaging about 7m. The deposits vary in width from 100m to over 2,000m in places. If the leading edge (to the south west) of the Sembehun group of deposits is considered as a single mineralised entity, then the width of the mineralisation is over 5,000m. The deposits length varies from about 1,000m to over 6,000m. The deposits vary significantly in mass from a few million tonnes to over 150 million tonnes. In general the mineralisation is present from surface. Some poorly mineralised interburden layers are present towards the south/west portion of the Benduma, Dodo and Kibi sub-deposits.
Estimation and modelling techniques	The resource modelling and estimation for the Sembehun rutile deposits was done using Datamine Software. The three dimensional solid formed between the topographic and basement surfaces defines the volume to be interpolated for each deposit. The wireframes were typically extended from the outer boreholes by several hundred meters to allow for extension of the models into geologically favourable areas, which currently have little or no drilling. Sub-domaining was carried where justified by supporting statistical analysis and geological interpretation of the data. A uniform parent cell dimension of 30m by 30m by 1.5m was adopted for all the modelled sub-areas with an allowance for sub-celling to 5m by 5m by 0.15m to allow improved resolution along zone boundaries. While the parent cell dimensions are smaller than what might be typically adopted in areas of relatively widely spaced drilling at Benduma, Kibi and Gbap, this does not impact the overall Mineral Resource estimate. Grade for all analytes was interpolated using the Inverse Distance Squared (ID^2) method, with the exception of Lithology, Colour and density which were interpolated using a Nearest Neighbour algorithm. A primary search ellipse dimension of 150 x 250 x 3m was used by Iluka for interpolating grades for Gbap, Kamatipa and Komende. Optiro in modelling of the Benduma, Dodo and Kibi sub-areas selected ranges corresponding to the total variability (range of the variogram) for definition of the search ellipse dimensions. A maximum of 16 and minimum of 4 samples were used to inform the grade in the model cells for Kamatipa and Komende while Optiro adopted a maximum of 20 and minimum number of 8 samples for estimating Benduma, Dodo and Kibi.

Criteria **Commentary**

Datamine's dynamic anisotropy functionality was used, allowing alignment of the search orientation with geological and grade trends to improve localised grade estimation. Increased search volumes, by factors of 2 and 3 were used for successive search runs when the interpolation failed to find sufficient data to satisfy the requirements of the primary search volume.

Deposit	Cell Dimension			Interpolation Method	Search Ellipse Dimension			2nd Search Vol Factor	3rd Search Vol Factor
	East	North	RL		X	Y	Z		
Benduma	30	30	1.5	ID2	230	260	3	2	3
Dodo	30	30	1.5	ID2	280	460	3	2	3
Gbap	30	30	1.5	ID2	360	500	3	2	3
Kamatipa	30	30	1.5	ID2	150	250	3	2	3
Kibi	30	30	1.5	ID2	360	500	3	2	3
Komende	30	30	1.5	ID2	150	250	3	2	3

Variography was carried out on the Sembehun data to verify the appropriate search ellipse dimensions. The variograms provide information on the continuity of the rutile and other grade variables which in turn was used to support the JORC Mineral Resource Category assigned.

No assumptions were made in relation to the recovery of by-products. The confidence in the grade of the ilmenite and zircon is considered to be lower than the confidence in rutile as less attention was paid in confirming the accuracy and precision of the methods used for determining the quantity of ilmenite and zircon. Confidence in the ilmenite and zircon content is at an Indicated level of confidence in areas where the confidence in rutile is considered Measured. Otherwise the confidence for ilmenite and zircon is Inferred.

A parent cell with dimensions of about half the dominant drill hole spacing was adopted. In many areas the drill hole spacing is considerably wider but retaining the 30m by 30m by 1.5m parent cell dimension will not have any impact on the Mineral Resource estimate.

No assumptions were made in relation to modelling of selective mining units in the estimation of the Sembehun rutile resource. The parent cell dimension and sub-celling used will adequately support economic analysis for most considered mining methods.

No assumptions were made during the resource modelling in relation to correlation of grade variables.

The extent of mineralisation was controlled through the use of interpreted surfaces defined to emulate the base of alluvial material, and top of Kasila Group Gneiss. Closed surfaces were also used to encompass areas of low rutile grade sediments and blocky laterite. A model boundary defined around areas of drilling was also used to limit the extent of mineralisation.

A small number of high grade outliers were noted for rutile and HM and top cut values were selected on a zone by zone basis by examining histograms, log probability plots, population interrogation and population statistics. A total of 29 HM and 23 rutile values were cut which has had a negligible change to the overall population statistics and virtually no change to the overall Mineral Resource estimate.

The resource models were validated by:

Criteria	Commentary
	• visually comparing the interpolated model grades to the drill hole grades; • comparing basic statistics for the model to the input assay data on a zone by zone basis; and • creating swath plots to compare the input grades to the model grades. Optiro also created ordinary kriged models for rutile to validate of the ID^2 estimates for the Benduma, Dodo and Kibi.
Moisture	All tonnages are estimated using dry in situ density factors.
Cut-off parameters	The Mineral Resources were reported using a 0.25% rutile cut-off grade in conjunction with delimiting mineral resource outlines which reflects a potential lower economic cut-off. A rutile grade * material thickness lower cut-off value of 1 was also applied to restrict the reporting of thin low grade mineralisation unlikely to ever be economic. This means that at least 4m thickness of material with a minimum grade of 0.25 is required to qualify for reporting as Mineral Resource (or 2m thickness grading at least 0.5% rutile). The rutile cut-off grade is slightly lower than that considered economic under current mineral pricing conditions but allows for: • potential mineral price increases; • the recovery of ilmenite and zircon credits; • consideration of more cost effective mining methods (e.g. dredging or hydraulic mining); and • efficiencies gained from increased mine throughput.
Mining factors or assumptions	Historically the Sierra Leone rutile deposits were primarily dredge mined. From 2016 only about 30% of the rutile production was from dredge mining, with 70% attributable to dry mining which commenced during 2014. Dry mining using truck and shovel or dozer push became the sole mining method following decommissioning of the Lanti Dredge in early 2019. Dry mining is considered to be a higher cost method but affords improved selectivity and lower capital set up costs. It also allows access to mineralisation in deposits not morphologically suitable for dredge mining. The geomorphological traits of the Sembehun deposits vary considerably and it is feasible that a combination of mining methods are used to optimise access to the mineralisation although truck and shovel is the current selected option.
Metallurgical factors or assumptions	Mining on the Sierra Leonean rutile deposits has been carried out semi-continuously over the past 54 years. The metallurgical amenity of the deposits is reasonably well understood from this historical mining. As a result the metallurgical recoveries are factored on the basis of historical recoveries. Many modifications to the processing method and equipment were made to optimise the recovery of the rutile and to some extent ilmenite and zircon. Bulk lithological composites were collected from the Kamatipa, Dodo and Komende sub-areas during the 2019 exploration programme for metallurgical testing which was done at Light Deep Earth (LDE) in South Africa. A total of 32 samples were selected for analysis of the geological properties with a further 11 selected for more detailed metallurgical analysis including particle size distribution, material handling properties, slimes characterisation and scrubbing performance. The rutile grade from the metallurgical testing of the bulk samples was similar to the expectation from exploration drill data although some variability was observed. This was attributed to localised variability and slightly different sample intervals being represent by the exploration and metallurgical datasets.
Environmental factors or assumptions	Current mining practice is to return all waste materials to the mine void as soon as reasonably possible after mining. After mining the surface is re-contoured to as reasonably close to original as possible and revegetation or some other acceptable land use is established. Some areas along the south-west margin of the currently defined mineral resource are in relatively low lying terrain close to sea-level. While there is no

Criteria	Commentary
	restriction to these areas, a sound mining technique which works with the local hydrology such as dredging may be required, along with comprehensive planning for rehabilitation.
Bulk density	The density for different lithology types was determined using a sand replacement technique. A number of 3 foot deep test pits were excavated within the SRL rutile deposits. About a 1 cubic foot volume of material was removed and the volume of the hole determined through sand replacement. This in conjunction with the dry weight of the material removed from the test volume was used to calculate the density of the dry in situ material. The dry density of materials encountered in the Sierra Leone rutile deposits was found to range from 1.57 t/m^3 to 1.73 t/m^3 depending on the sediment type. The original source data supporting the density testwork was destroyed during the rebel insurgency in 1995. Testwork is being undertaken at the current mine sites on geologically similar host material to ratify the historically accepted dry material density factors. The sand replacement method adequately takes into consideration the potential for void space between sediment grains and has also been carried out on a number of different materials encountered in the mineral deposits. The density value is assigned in the drill data file in line with the logged lithology and then interpolated into the model using a Nearest Neighbour algorithm.
Classification	The Mineral Resource estimates were classified as Measured Indicated or Inferred and reported in accordance with the guidelines of the JORC Code (2012 Ed.). The classification was assigned to the rutile models on the basis of confidence in geological and rutile grade continuity and taking into account data quality, data density and confidence in estimation of rutile block grades. In addition, kriging quality metrics from the ordinary kriged estimate for rutile (used to validate the inverse distance estimate) were used to define areas of high, moderate and lower confidence for the Benduma, Dodo and Kibi sub-areas by Optiro. This classification is applicable for the rutile and HM resource models. There was less focus on the precision and accuracy for the Ilmenite and zircon resulting in lower confidence grades for these mineral species. For the Benduma, Dodo and Kibi sub-area model Optiro applied the following resource classification assignment: • Measured Resources were defined within areas where grade estimation of the upper alluvial sequence (zone 1) was generally within the first search pass, where the rutile data is supported by drilling from 2019 and 2020 and where the drill spacing is generally 60 m by 60 m. Indicated Resources within zone 1 were defined in areas where the drilling containing rutile data is at a spacing of 120 m by 120 m; • Mineral Resources within the saprolite, blocky laterite and lower grade zones (2, 4 and 9) were classified as Indicated at best and Indicated Resources were defined in areas for these zones where the drilling is generally at a spacing of 60m by 60m; and • Inferred Resources were defined within areas of zone 1 where the drill spacing is wider than 120m by 120m, and within zones 2, 4 and 9 where the drilling is at wider spacing than 60m by 60m. For Gbap, Kamatipa and Komende a similar classification was adopted with: • a Measured Resource classification applied to zone 1 where the drill spacing was 60m by 60m; • an Indicated Resource classification was applied to zones 2, 4 and 9 within areas with a drill spacing of 60m by 60m and also to zone 1 where the drill spacing was up to about 200m by 200m; and • an Inferred Resource classification was applied to mineralisation within the confining strings and where the drill spacing was greater than about

Criteria	Commentary
	200m by 200m for all zones. The bedrock domain (zone 200) was not classified and is excluded from resource reporting. It is the view of the Competent Person(s) that the frequency and integrity of data, and the resource estimation methodology are appropriate for this style of mineralisation and the Resource Classification applied.
Audits or reviews	The Mineral Resource for Gbap, Kamatipa and Komende were modelled and estimated in-house by Iluka and externally reviewed by Optiro as per Iluka governance protocols. The Mineral Resource for the Benduma, Dodo and Kibi sub-areas were estimated by Optiro and reviewed by Iluka as part of normal 180^{O} validation process adopted by Optiro and Iluka.
Discussion of relative accuracy/ confidence	It is the view of the Competent Person(s) that the frequency and accuracy of the data and the process in which the Mineral Resources have estimated and reported are appropriate for the style of mineralisation under consideration. The relative accuracy of the estimates is reflected in the reporting of the Mineral Resources and the Resource Category assigned as per the guidelines set out in the JORC Code (2012 Ed.). The statement refers to global estimates of tonnage and grade. No mining of the Sembehun mineralisation has taken place to date so no reconciliation is available.

Section 4: Estimation and Reporting of Ore Reserves – Sembehun Group Deposits

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	Commentary
Mineral Resource estimate for conversion to Ore Reserves	The Mineral Resource estimate is based on an updated resource model completed in September 2021 by Iluka Resources (Iluka). The resource model is called “mdsem2021b” and was compiled by Iluka Resource Development Geologists and reviewed and approved by the company’s Competent Person (CP) for Mineral Resources. The updated resource estimate was used as the basis for the conversion to an Ore Reserve. The Ore Reserves were compiled by Iluka Mine Planning Engineers and reviewed and approved by the company’s CP for Ore Reserves. Mineral Resources are reported inclusive of the Ore Reserves.
Site visits	The CP has visited the site on numerous occasions, the last in September 2019. Covid-19 has restricted travel to site since this time. No additional site issues were found that could impact the Ore Reserves.
Study status	Existing operations are continuing at the nearby SRL Area 1 site, located approximately ~30km to the south east of Sembehun. Mineral separation of the Sembehun Heavy Mineral Concentrate (HMC) is expected to utilise existing infrastructure and final product transported via the existing Nitti Port. A Prefeasibility Study (PFS) was completed for Sembehun in 2017 by Iluka. The Iluka Board approved funding for a Definitive Feasibility Study (DFS) which commenced in April 2018. During the DFS it became apparent that the financial returns for the project, whilst still positive, were not to the levels that the Iluka Board would approve development funding. As such, the DFS was placed on hold whilst alternative mining and processing methods were assessed to improve the projects financial returns. A study was commissioned to re-assess development options. Following the option assessment phase, a short list of 4 options were selected to study in further detail to determine the preferred option to proceed with into future feasibility studies. The preferred option was truck and shovel mining with a centralised WCP and thickener. The Sembehun PFS contained technically achievable mine plans that are considered economically viable and were the basis for the current study phase and financial modelling. Modifying factors such as costs, product revenues, recoveries have been applied based on DFS estimates and test work and actual site costs. The project is financially viable at the current forecast prices anticipated by Iluka/SRL. The basis of cost estimates were the previously developed PFS/DFS assessments and factored and escalated as appropriate.
Cut-off parameters	Variable cut-off grades have been calculated using optimization software and individual cut-off grades applied to each block within the model. The calculations consider strip ratios, overall HM grade and individual assemblage product values, operating costs, recoveries and other modifying factors. An economic optimization is performed to determine if a block is viable to mine, and therefore be included in the Ore Reserves.
Mining factors or assumptions	Pit optimisations were conducted by Iluka Mine Planning Engineers using Minemax mine planning software. Areas of the deposit excluded from Ore Reserve calculations including material inside the 1 in 10 year flood level as well as material below -10mRL. This is due to limited confidence of extracting this material due to seasonal flooding and expected wet mining conditions.

	The selected mining method is truck and shovel (T&S) for both ore and waste. This method has successfully been used at the existing SRL operations for a number of years and is considered low risk. Ore is placed into trucks and transported to a run-of-mine (ROM) stockpile or placed directly into the mining unit plant (MUP) hopper. Budget pricing was obtained from 3x mining contractors with experience locally in West Africa with the average price utilised for the Ore Reserve estimate. Pre-strip is minimal in most areas however overburden and interburden (Bullom Sands mostly absent of HM) is encountered in some locations. The geotechnical assumptions used in the optimisation are based on historical observations of SRL operations. A conservative approach has been implemented, where an assumed Overall Slope Angle (OSA) for the open pit of 45 degrees. Slope angle changes do not have a material impact to the Ore Reserve optimising due the geometry of the ore body No mining loss or dilution factors have been applied in the Ore Reserve calculations as SRL operations generally experience a positive HM call factor in reconciliations to block model. Further penalty is therefore not justified. Pits have a minimum design floor width of 100m and all pits are outside of the 1 in 10 year maximum flood level. Inferred Mineral Resources are used in internal planning as well as for planning of future infrastructure but are not included in financial assessments of the Ore Reserve. There is existing infrastructure for the current mining and processing of the Area 1 deposits currently being mined which will also be utilised for Sembehun. This includes: • administration buildings; • workforce accommodation; • port loading and barging facilities; • power supply; • workshops and stores; • site access roads; and • mineral separation plant (MSP). Further infrastructure requirements for Sembehun include: • site access roads and bridges; • WCP; • process water and tailings storage dams; • power supply; and • workshop and stores.
Metallurgical factors or assumptions	The metallurgical process proposed has been utilised historically, is currently applied at SRL and represents low risk. The processing technology is utilised worldwide in the mineral sands industry.

	The ore is dry mined by truck and shovel operations. The first processing stage removes the oversize and slime by a combination of scrubbing, screening and cycloning. The remaining sand then passes through a series of spirals to remove the lighter fraction of the sand with the heavy mineral recovered stockpiled as HMC. The metallurgical separation process utilises known technology where the performance and recovery of the mineral products has been established by SRL and Iluka in current and past operations. The current mining operations produces a rutile product to specification with industry standard processing techniques and recoveries. Metallurgical test work has confirmed with a high level of confidence that a similar rutile product will be produced using similar processing techniques on declared Ore Reserves. Processing requirements for any deleterious elements present are in place at the current operations. No additional deleterious elements are expected. Continuation of existing controls are deemed sufficient for all unmined Ore Reserves. The number of bulk samples taken across the deposits is considered appropriate for the corresponding Mineral Resource classifications. Rutile produced at SRL is high quality and has been sold into the market for a long period of time. There is no evidence to suggest the rutile quality will change as the mine progresses. Tailings will be co-disposed sand and thickened fines. Current Area 1 operations utilise the co-disposal method successfully and the addition of a thickened fines will aid in water recovery as well as an improved mix of sand and fines. The tailings walls will be engineered and no upstream raising is planned.
Environmental	All environmental studies and approvals required under the Sierra Leone government have been granted and numerous agreements with the local landowners and communities are in place for existing Area 1 operations. Environmental studies, approvals and stakeholder agreements have proceeded and are in various stages of completion for the Sembehun project. There is a reasonable expectation that studies and approvals for the Sembehun project will be in place before the project is executed. An ESHIA was developed during DFS however placed on hold until the mining method was confirmed. Now that a mining method has been chosen, the ESHIA is able to be finalised and will be completed in line with required project timeframes. Critical habitat surveys have been completed and no areas of high significance have been identified on the mine path. No waste rock will be produced during mining or processing activities. Limited overburden exists on the deposits and the waste that will be mined does not create any environmental risks when stockpiled. Waste produced from the MSP tails stream will at times contain naturally occurring radioactive material (NORM) and will be managed as per SRL/Iluka current practices.
Infrastructure	Iluka/SRL holds secure tenure over the Ore Reserves. A proposed location for plant and infrastructure has been identified and is appropriate in size. Existing infrastructure is in place for current operations, some of which will in time be utilised for the Sembehun operations and workforce.
Costs	Capital estimates are based on a combination of estimates developed during the DFS as well as factorised estimates based on changed designs or quantities.

	Mining and power supply is proposed to be by toll contractors. Existing infrastructure will be utilized for mineral separation and some support services. The existing Nitti Port infrastructure will be utilized to export final product. Operating costs are primarily based on the SRL budget with the exception of mining and wet concentrator plant (WCP) processing which have been estimated based on plant size, power usage and expected maintenance costs. Mining costs were derived from budget estimates obtained from 3x contractors with West African mining experience. This estimate has been benchmarked against other West African mines to confirm appropriateness. The majority of the WCP processing downstream from the rougher head feed was based on the existing DFS design and costs. Thickening is an addition to the DFS design and costs are based on power consumption and maintenance estimates. Flocculant cost is based on consumptions derived from floc settling testwork and a quoted price. Cost and recovery penalties have been applied to deleterious elements in the optimisation and subsequent cost estimate. All costings are calculated in $US. Transportation charges are based on recent rates procured from existing SRL operations and factored to increases in distances. Treatment costs are largely based on actual operational costs including deleterious elements. Actual operating costs are used to benchmark the operating cost estimates. Appropriate allowance has been made for Sierra Leone Government and other private stakeholder royalties.
Revenue factors	Price assumptions are based on commercially available price forecasts by industry observers. Prices are in US dollars. Final product transportation costs are deducted from the revenue factors used in the optimisation. Revenue factors are flexed to establish pit sensitivities and to test for robustness of the Ore Reserve. A large proportion of current product sales are contracted and commercially sensitive and therefore not disclosed.
Market assessment	The global pigment market remains robust with demand in all regions outpacing supply. Pigment pricing momentum is continuing, with increases of US$175-200 per tonne announced by all major producers for Q4 2021. In China, the production of both pigment and titanium feedstocks was impacted by energy shortages throughout the period. Exports from China continue to be impacted by unprecedented logistics costs associated with container shortages. More broadly, pigment inventories are well below seasonal norms and long lead times persist as North American and European pigment producers continue to face shortages of chlorine. In order to manage high chlorine costs and constrained supply, pigment producers are increasingly looking to boost head grades in an attempt to reduce their requirements for chlorine. These developments are driving increased demand for high grade feedstocks such as synthetic rutile and natural rutile. All of Iluka's synthetic rutile and natural rutile is under contract for the remainder of 2021. The welding market remains strong as high levels of spending on infrastructure in both developing and mature economies continues to support underlying demand. Iluka/SRL establishes short, medium and long term contractual agreements with customers and these reflect the pricing and volume forecasts adopted. Contracts and agreements pertaining to Iluka/SRL project and the wider company are confidential.

	Iluka/SRL provides internal testing for clients. Clients are provided with reports in accordance with their required specifications. Customers are provided reasonable access to verify conformance with requirements.
Economic	Macro-economic assumptions used in the economic analysis of the mineral sands reserves such as foreign exchange, inflation and discount rates have been internally generated and determined through detailed analysis by Iluka/SRL and benchmarked against external sources where applicable. Cashflows from the optimised Ore Reserve are strong and underpin a robust evaluation. Price assumptions are based on commercially available price forecasts by industry observers. Sensitivity analysis is undertaken on key economic assumptions such as costs and price to ensure the reserves remain economic. Changes in product prices and costs have the potential to increase or decrease the total Ore Reserve.
Social	All agreements and approvals required for the current operations are in place. It is reasonable to expect that all agreements and approvals for Sembehun will be in place before operations commence. SRL has operated in country for over 50 years and is perceived to be part of the national social fabric. The community and operations are closely integrated with little exclusion of the public from the mining lease area over the five Chiefdoms the mining operation covers. Local villages on the mine path will be resettled over the course of the operation. A resettlement and livelihood restoration plan has been developed and will be implemented as the project progresses. Successful resettlements of village has occurred in Area 1. SRL/Iluka support a number of development programmes through donations. Most donations relate to infrastructure projects, including schools, churches and mosques.
Other	No identifiable naturally occurring risks have been identified to impact the Ore Reserves. The mineable extents of the pits are constrained in some cases by excavation depth due to presence and ability to dewater and operate in wet conditions. There are no known risks to the Ore Reserves due to any material legal or marketing arrangements. Government agreements and approvals for the Sembehun project have progressed and there is a reasonable expectation that these will be in place before the project is executed. Approval has been granted for access roads and watercourse crossings from Area 1.
Classification	Measured Mineral Resources are converted to Proved Ore Reserves and Indicated Mineral Resources are converted to Probable Ore Reserves. Inferred Mineral Resources are not included in the reported Ore Reserve. The results reflect the Competent Persons view of the deposit. None of the Probable Ore Reserves have been derived from Measured Mineral Resources.
Audits or reviews	No external audits have been undertaken on the Sembehun Ore Reserve.

Discussion of relative accuracy/ confidence	Iluka/SRL has considerable experience in reconciliation of its Mineral Resources and Ore Reserves. Actual results generally indicate very good agreement with the geological model and close reconciliation with rutile tonnes, ore tonnes and rutile percentage head grade. The risk of not achieving good physical Ore Reserve reconciliation is considered to be low. This is indicative of a robust estimation process. Operational metallurgical experience, relevant testwork and Iluka/SRL's experience supports the view that metallurgical risk is low. Mining and processing methods selected are typical for mineral sands and have been demonstrated in various other mineral sand operations, they are considered a low risk of impacting the Ore Reserves. No mining of the Sembehun mineralisation has taken place to date so no reconciliation is available.