titaniumsands LTD

ASX RELEASE

11 February 2019

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ASX: TSL

TITANIUM SANDS TRIPLES HEAVY MINERAL SANDS JORC RESOURCE

- **Contained valuable heavy mineral sands have increased to nearly 300% of the previous JORC resource at Mannar Island.**
- **Total Inferred Resource now 53.08Mt at 6.7% THM.**
- **Includes a new high grade zone of 9.85Mt at 9.06% THM.**
- **Leucoxene, potentially a higher value titanium bearing mineral is a significant value component of the heavy mineral suite.**
- **The resource is exposed at surface with essentially no overburden.**
- **Slimes/silt contents average 1.1%.**
- **Large resource expansion potential below the shallow (1-3m) to water table drilling to date, and on the remaining 50% of the tenure considered prospective.**
- **Substantial infill and depth extension drilling to commence as soon as a suitable drilling rig can be mobilised.**
- **Scoping study commencing shortly to ensure expedited project timeline.**

11 February 2019 – Perth, Australia: Titanium Sands Ltd (the "**Company**", **ASX: TSL)** is pleased to announce an updated Inferred mineral resource at its Mannar Island Project in Sri Lanka of 53.08 million tonnes at 6.67% heavy minerals (Table 1) (Figure 1). The contained valuable heavy mineral resource has increased to nearly 300% of the previous resource statement reported to the ASX on 22 April 2015*. Correspondingly the resource tonnage has increased to 500% of the previously reported tonnage.

The heavy mineral suite is dominated by ilmenite and leucoxene with minor but valuable rutile and zircon components. Contained within the resource are two higher grade zones, Domain 0 (10.33Mt @11.86%THM) and Domain 2 (9.85Mt @ 9.06%THM, Figure 2 and Table 1). Resource drilling to date has only been down to the water table which in the interior of Mannar Island occurs at a depth of 1 to 3m below the land surface. The heavy mineral sequences are exposed at surface and there is essentially no significant overburden on the resource.

Acquisition of the Mannar Island Project by Titanium Sands Ltd was formally concluded and the Company re-instated to trading on the Australian Securities Exchange on 18th December 2018**following a $6 million fundraising.

Dr James Searle, Managing Director commented: *We are delighted at this significant upgrade to our maiden JORC Resource at Mannar Island. Titanium Sands will now fast track further infill and extension resource drilling to provide sufficient definition for a comprehensive scoping study. We have commenced metallurgical test work components of the scoping study, and will progress to resource extension and deeper drilling to test for resources below the water table. This is an exciting development for the project which we believe is located on highly prospective tenure with the potential for further resource definition.*

Table 1: Block model inferred mineral resource at a 2% total heavy mineral cut off reproduced from Table 3 below and from the GeoActiv Pty Ltd resource report contained in Appendix 2.

Domain	Licence	Vol (Mm^3)	Tonnes (M)	THM %	Silt %	Oversize %	Ilm %	Leu %	Rut %	Zir %
0	EL180	2.23	3.91	11.81	1.87	11.68	6.11	0.87	0.16	0.24
	EL182	3.27	5.73	11.82	2.21	6.55	6.06	0.78	0.27	0.29
	EL370	0.17	0.30	15.80	2.96	11.10	8.83	1.08	0.24	0.35
	EL371	0.23	0.40	10.05	2.07	1.03	4.73	0.94	0.26	0.21
	Sub Total	**5.91**	**10.33**	**11.86**	**2.10**	**8.41**	**6.11**	**0.83**	**0.23**	**0.27**
1	EL182	5.07	8.92	5.16	1.88	9.76	2.45	0.45	0.12	0.13
	EL370E	1.43	2.52	3.01	0.55	3.80	1.29	0.24	0.07	0.05
	EL370W	11.35	19.98	4.16	0.56	1.50	1.86	0.35	0.10	0.09
	Sub Total	**17.85**	**31.42**	**4.35**	**0.93**	**4.03**	**1.98**	**0.37**	**0.11**	**0.10**
2	EL180	0.15	0.25	3.62	0.50	8.11	1.20	0.18	0.04	0.03
	EL181	1.60	2.78	12.81	0.63	24.08	6.45	0.96	0.16	0.25
	EL182	0.001	0.001	5.36	1.22	10.34	2.63	0.99	0.09	0.15
	EL370E	3.92	6.82	7.74	0.87	20.85	3.58	1.17	0.12	0.17
	Sub Total	**5.66**	**9.85**	**9.06**	**0.80**	**21.43**	**4.32**	**1.08**	**0.13**	**0.19**
3	EL370W	0.85	1.48	3.55	0.40	0.65	1.66	0.31	0.09	0.08
	Sub Total	**0.85**	**1.48**	**3.55**	**0.40**	**0.65**	**1.66**	**0.31**	**0.09**	**0.08**
Total		**30.27**	**53.08**	**6.66**	**1.12**	**8.02**	**3.21**	**0.59**	**0.14**	**0.15**

Note: Domain 0 in the table represents the inferred mineral resources previously reported in full to the ASX on the 22nd of April 2015*. For this updated resource statement additional mineralogical information enabled minor refinements of the mineral components of the THM%.

Wind sorted heavy mineral ripples, Mannar Island

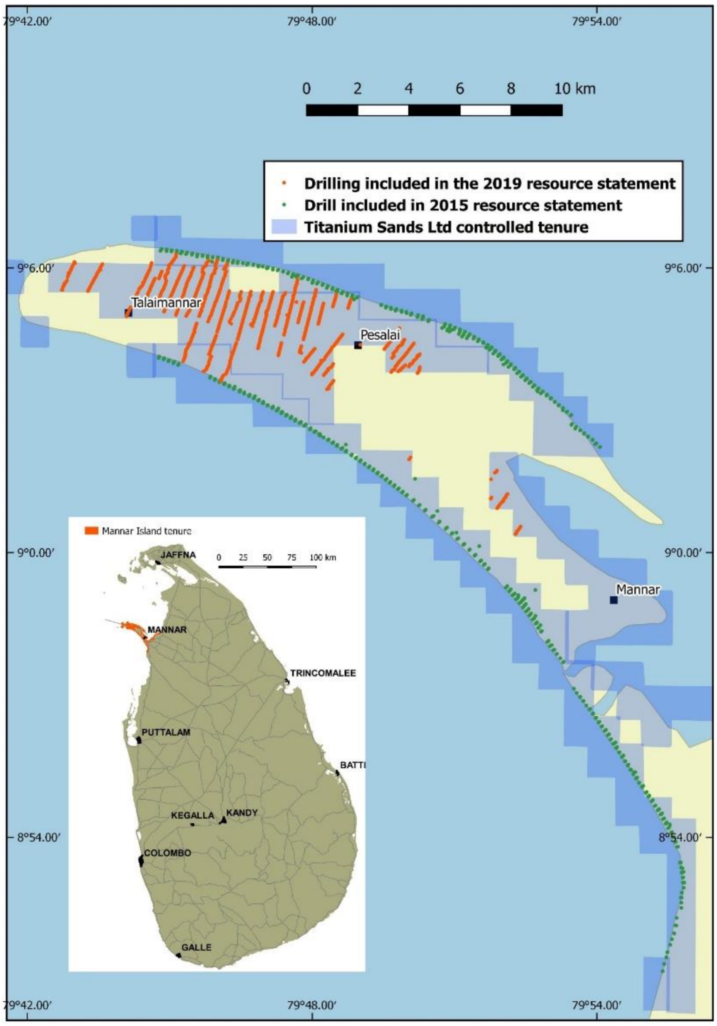


Figure 1 Location of the Mannar Island Project and resource drill hole locations.

ABOUT THE MANNAR ISLAND ILEMENITE-LEUCOXENE HEAVY MINERAL DEPOSIT

The Mannar ilmenite-leucoxene heavy mineral deposit is located on a 25 kilometre long by 5 kilometre wide sand island in the dry North West of Sri Lanka and the mainland coast up to 10 kilometres south (Figure 1). The island is joined to the mainland by a road and rail causeway. Mineral sand deposits occur elsewhere along the Sri Lankan coast but only the Government owned Lanka Mineral Sands on the North East coast at Pulmoddai is operational. The known deposits vary in geology and mineral composition.

Mannar Island is a low lying young (less than 10,000 years old) largely unconsolidated sand island. Only locally are elevations 3m above mean sea level. The heavy mineral deposits are contained are within extensive sheets of 1 to 3m thick beach and back beach sands along the coast and up to 3 kilometres inland. The heavy mineral sand deposits are exposed at surface and extend down to the water table 1 to 3m below the land surface. No drilling has so far been conducted below the water table.

The heavy mineral assemblage at Mannar is dominated by ilmenite and higher value leucoxene. Even higher value rutile and zircon are present in minor concentrations. The host beach and back beach sequences are young and free running, there are no significant areas of calcareous or ferruginous cementation. The original depositional conditions of the beach face and back beach means that the deposit contains less than 1-2% slime and silt sized components.

Heavy mineral sands in the Titanium Sands Ltd tenure on the mainland coast.

RESOURCE ESTIMATION

Resource estimation for the Mannar Project has been undertaken by independent mineral sands consultants GeoActiv (Pty) Ltd of Johannesburg, South Africa in compliance with the JORC Code (2012). Compliance information based on the criteria set out in Table 1 of the code is contained here in Appendix 1 to this announcement. GeoActive prepared the initial resource report for the Mannar Project reported to the ASX on 22 April 2015*. The resource model developed in that report is still current with respect to the block model, total tonnes and total heavy minerals. This updated resource announcement is based on drilling subsequently undertaken inland from the 2015 resource model (as reported in full to the Australian Securites Exchange on 30 January 2018***). For clarity in tables and illustrations the original 2015 resource is termed Domain 0, the further resource modelling reported in this announcement is referred to as Domains 1, 2 and 3 (Figure 2).

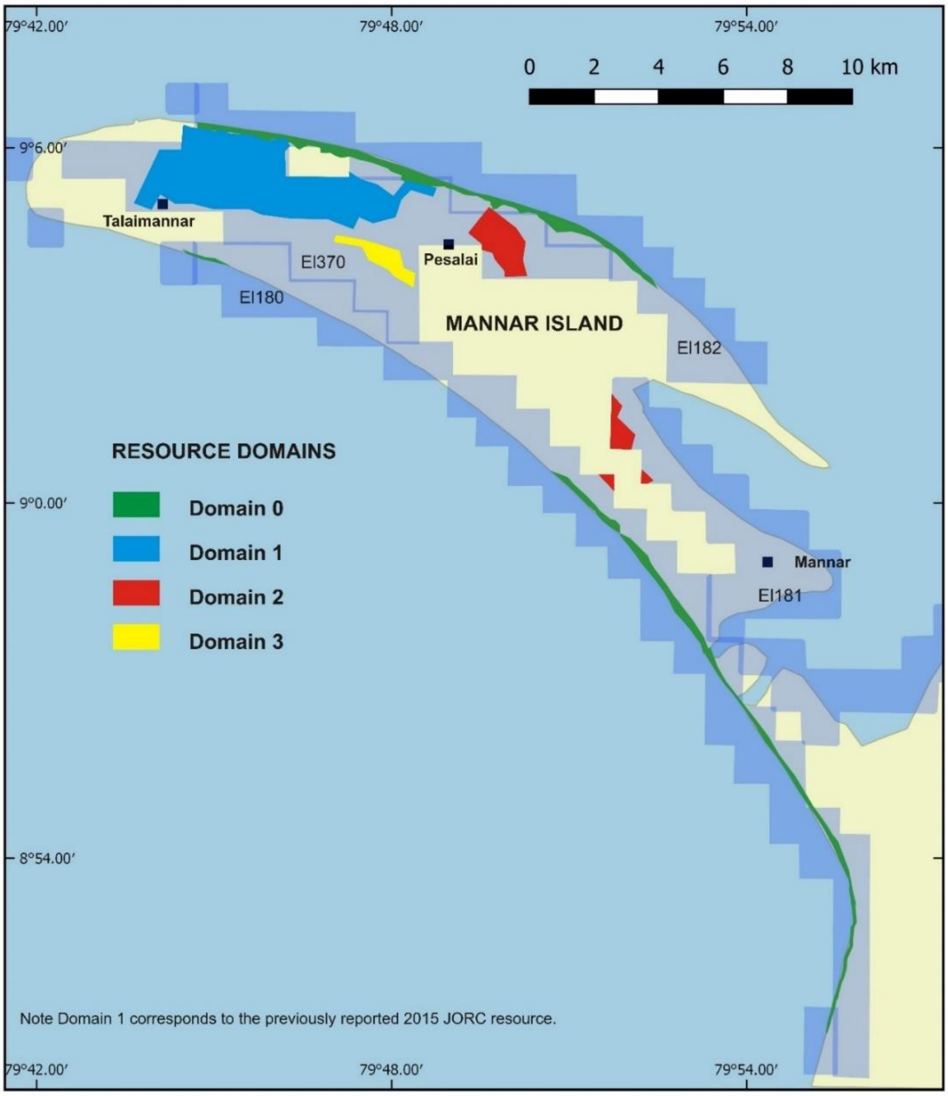


Figure 2 Resource domains. Note Domain 0 represents the previously reported 2015 JORC resource*, Domains 1, 2 and 3 represents the additional resources reported here. The new high grade zone is represented by Domain 2.

Resource Drilling

Resource drilling*** was carried out using hand driven (Dormer) shell augers. The sample collection shell being 75mm in diameter. This mode of drilling was very effective in the 1 to 3m thick heavy mineral bearing sand sheet above the water table. Excellent sample recoveries and precise sampling intervals were uniformly achieved. A total of 1,075 drill holes were drilled. Drilling was undertaken on lines 400m apart and with drill hole separations of 50m. Sampling was on 0.5m intervals. All holes were terminated at the water table below which hole integrity and sampling precision could not be guaranteed. Quality Assurance and Quality Control (QAQC) drilling was undertaken by the resource consultants GeoActiv. A total of 51 holes were twinned.

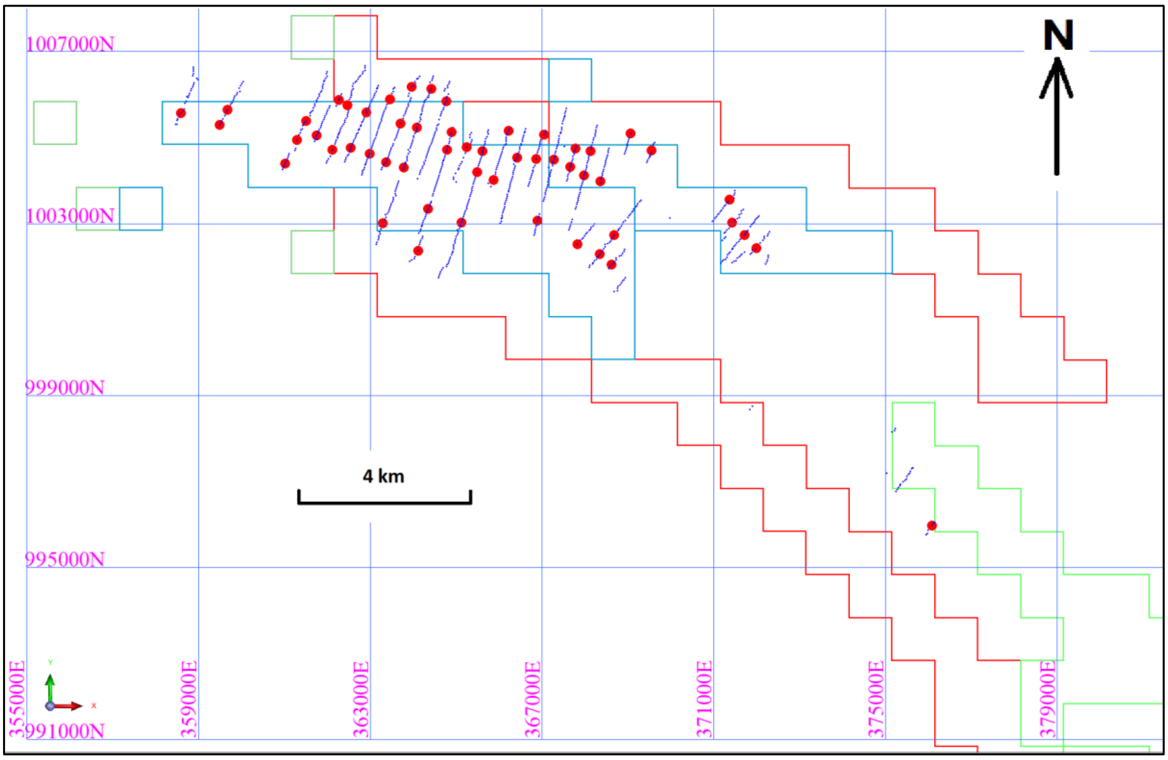


Figure 3 Resource drilling in blue, and twinned drill holes shown in red.

Sampling

Samples were collected every 0.5m, except where holes were terminated before reaching a complete 0.5m interval in which case the sample interval would be less than 0.5m. Sample documentation and labelling ensured tracking and tracing of all samples from the drill site to arrival at the analytical laboratory.

Total Heavy Mineral Analysis

Sample preparation to remove the plus 1mm and -45 micron size fractions was undertaken at a dedicated facility on Mannar island. Samples were then shipped to Scientific Services laboratory in Cape Town, South Africa for analysis. QA/QC duplicate samples were selected by GeoActiv for analysis at Diamantina Laboratories of Perth, Western Australia. In addition laboratory blanks and standards were inserted into the laboratory processing sequence of the samples.

Initial Laboratory analysis involved standardized heavy media separation using tetrabromoethane (TBE) to obtain separation of the total heavy mineral component (THM).

Heavy media (TBE) separation funnels.

Total heavy mineral contents of the whole sample were then calculated using the size fraction data. The THM sinks recovered from each separation were retained for subsequent mineralogical analysis.

Mineralogical Analysis

The next stage of mineralogical analysis involved magnetic separation of the heavy mineral into components as an initial stage of determining the mineralogical composition. All samples from 48 drill holes spread through Domains 1,2 and 3 were individually processed through a CARPCO high intensity lift magnetic separator to produce magnetic fractions termed, highly magnetic (HM), crude ilmenite (CI), magnetic others (MO), and nonmagnetic (NO).

Magnetite reports mainly to the magnetic fraction and ilmenite to the crude ilmenite fraction. Zircon, rutile and sillimanite predominantly report to the non-magnetic heavy mineral fraction. Leucoxene may report here, as well as in the magnetic “others” fraction. Actinolite and pyrope predominantly reports to the magnetic other fraction.

Composite samples representing the magnetic fractions were then prepared from the magnetic fractions for further analysis by:

- Sub-set 1 for X-ray fluorescence (XRF) analyses.
- Sub-set 2 for X-ray diffraction (XRD) analyses.
- Sub-set 3 for polished section preparation for microscopic examination.

XRF and XRD analyses provide chemical and crystallographic indications of the mineral suites present.

CARPCO high intensity lift magnetic separator.

Further resolution of the mineralogical components was undertaken at the Laboratory for Microscopy and Microanalysis at the University of Pretoria, using quantitative optical microscopy supplemented by SEM (scanning electron microscopy) and energy dispersive x-ray analyses (EDX).

Resource Modelling

With the exception of a few isolated drill holes all drill holes were used in the resource modelling, with domains being defined by drill holes with over 2% THM. The mineralised geometry in the domains were further defined by a digital terrane model of the land surface and for the lower surface a wireframe of the end of hole depths of the drill holes.

Block modelling of the mineralisation was undertaken using SURPAC software with primary block sizes of 100m x 100m x 2m and minimum sub block sizes of 25m x 25m x 0.5m. The block model was then constrained by the mineralised geometry of the DTM and the base of drill hole wireframe.

Grade interpolation was implemented with hard boundary conditions by domain area. The 0.5 m composite data per domain was used for the estimation of the THM, silt and oversize. The 0.5 m composite data of the magnetic separation and XRF data were used for the estimation of the variables; CI_yield, MO_yield, NM_yield, CI_TiO2, MO_TiO2, NM_TiO2 and NM_ZrO2. Inverse distance to the power of 3 was used for *in situ* grade interpolation for all the variables in the three domains.

Increased data from the determination of mineralogical components from chemical, EDM and SRX data used in the mineral grade interpolation for Domains 1, 2 and 3, has also enabled a minor revision of the THM component minerals in the block model for Domain 0 previously reported (*refer ASX announcement on the 22 April 2015**). The THM% in the previously reported resource remains the same, but ilmenite and rutile have increased and leucoxene decreased.

Relative density data from 53 sites within the 3 domains were applied to the blocks based on domain, 1.74 for domain 1, 1.75 for domain 2 and 1.75 for domain 3.

Figure 4 shows the grade block model and Figure 5 illustrates the good correlation between the block model section and drill hole data.

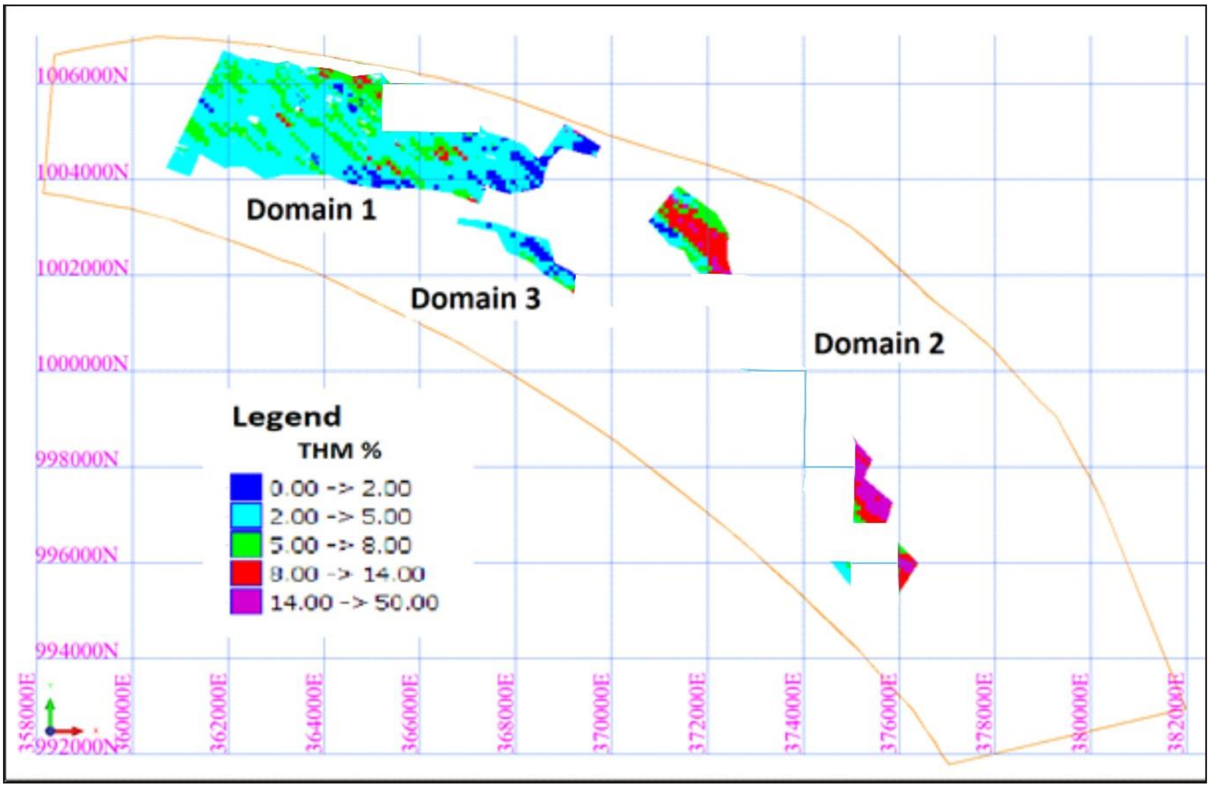


Figure 4 THM % estimates in the block model for the updated resource.

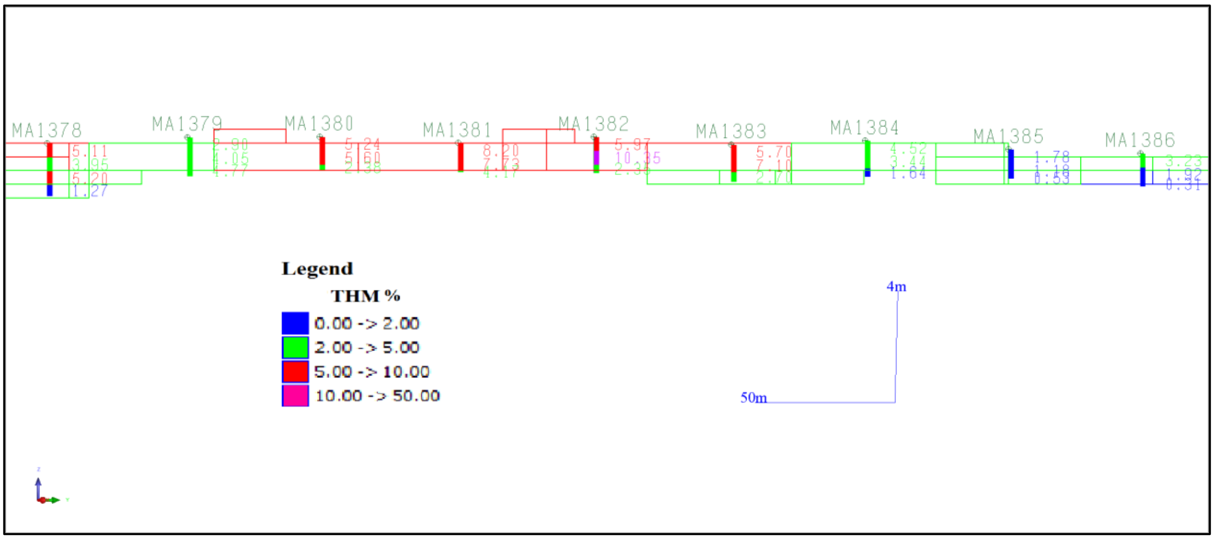


Figure 5 Cross section showing good correlation between block model input drill holes and resource blocks.

Resource Classification and Statement

The resource classification was primarily based on the drill hole density and the variability of the data. The drill hole lines were generally 400 m apart and the drill holes 50 m apart on the drilling lines. This gave a good coverage of the areas to be able to create the three domains. The high variances of the variables lower the confidence of the estimates in the block model. The high variability of the field duplicates, referee lab duplicates and between the twinned drill holes, result in a lower confidence in the estimates. The highest variances were within the oversize % and it directly influences the THM %. No QAQC were done on the oversize %, except with the twinned drill holes where the precision and accuracy was poor. With all the above taken into account, all the Mineral Resources were classified as Inferred.

Table 2: The February 2019 Inferred mineral resource estimations for the Mannar Project without a lower cut-off. Summarised from the GeoActiv report resource tabulations in Appendix 2.

Domain	Licence	Vol (Mm^3)	Tonnes (M)	THM %	Silt %	Oversize %	Ilm %	Leu %	Rut %	Zir %
0	EL180	4.03	7.06	6.87	3.25	9.6	3.44	0.5	0.09	0.14
	EL182	3.81	6.66	10.27	2.44	6.56	5.24	0.68	0.23	0.25
	EL370	0.17	0.31	15.69	2.95	11.02	8.77	1.07	0.24	0.35
	EL371	0.23	0.4	9.98	2.06	1.02	4.69	0.93	0.26	0.21
	Sub Total	**8.25**	**14.43**	**8.71**	**2.83**	**7.98**	**4.42**	**0.61**	**0.17**	**0.19**
1	EL182	5.25	9.25	5.04	1.89	9.77	2.39	0.44	0.12	0.12
	EL370E	2.34	4.11	2.41	0.53	4.05	1.02	0.19	0.06	0.04
	EL370W	12.78	22.5	3.85	0.56	1.86	1.72	0.32	0.1	0.08
	Sub Total	**20.37**	**35.86**	**3.99**	**0.9**	**4.15**	**1.81**	**0.34**	**0.1**	**0.09**
2	EL180	0.21	0.37	2.98	0.47	12.82	0.98	0.15	0.03	0.03
	EL181	1.65	2.86	12.48	0.62	24.79	6.27	0.94	0.16	0.24
	EL182	0	0	2.4	1.98	21.91	1.17	0.43	0.04	0.06
	EL370E	4.53	7.88	6.91	0.9	21.46	3.19	1.04	0.11	0.15
	Sub Total	**6.39**	**11.12**	**8.21**	**0.81**	**22.03**	**3.91**	**0.98**	**0.12**	**0.17**
3	EL370W	1.08	1.88	3.15	0.43	0.67	1.49	0.27	0.08	0.07
	Sub Total	**1.08**	**1.88**	**3.15**	**0.43**	**0.67**	**1.49**	**0.27**	**0.08**	**0.07**
Total		**36.09**	**63.29**	**5.78**	**1.31**	**8.06**	**2.76**	**0.51**	**0.12**	**0.13**

Table 3: The 2019 Inferred mineral resource estimations for the Mannar Project with a 2%THM lower cut-off. Summarised from the GeoActiv report resource tabulations in Appendix 2

Domain	Licence	Vol (Mm^3)	Tonnes (M)	THM %	Silt %	Oversize %	Ilm %	Leu %	Rut %	Zir %
0	EL180	2.23	3.91	11.81	1.87	11.68	6.11	0.87	0.16	0.24
	EL182	3.27	5.73	11.82	2.21	6.55	6.06	0.78	0.27	0.29
	EL370	0.17	0.30	15.80	2.96	11.10	8.83	1.08	0.24	0.35
	EL371	0.23	0.40	10.05	2.07	1.03	4.73	0.94	0.26	0.21
	Sub Total	**5.91**	**10.33**	**11.86**	**2.10**	**8.41**	**6.11**	**0.83**	**0.23**	**0.27**
1	EL182	5.07	8.92	5.16	1.88	9.76	2.45	0.45	0.12	0.13
	EL370E	1.43	2.52	3.01	0.55	3.80	1.29	0.24	0.07	0.05
	EL370W	11.35	19.98	4.16	0.56	1.50	1.86	0.35	0.10	0.09
	Sub Total	**17.85**	**31.42**	**4.35**	**0.93**	**4.03**	**1.98**	**0.37**	**0.11**	**0.10**
2	EL180	0.15	0.25	3.62	0.50	8.11	1.20	0.18	0.04	0.03
	EL181	1.60	2.78	12.81	0.63	24.08	6.45	0.96	0.16	0.25
	EL182	0.001	0.001	5.36	1.22	10.34	2.63	0.99	0.09	0.15
	EL370E	3.92	6.82	7.74	0.87	20.85	3.58	1.17	0.12	0.17
	Sub Total	**5.66**	**9.85**	**9.06**	**0.80**	**21.43**	**4.32**	**1.08**	**0.13**	**0.19**
3	EL370W	0.85	1.48	3.55	0.40	0.65	1.66	0.31	0.09	0.08
	Sub Total	**0.85**	**1.48**	**3.55**	**0.40**	**0.65**	**1.66**	**0.31**	**0.09**	**0.08**
Total		**30.27**	**53.08**	**6.66**	**1.12**	**8.02**	**3.21**	**0.59**	**0.14**	**0.15**

Heavy minerals concentrated in a panning dish, Mannar.

Newly refurbished rail track through the centre of Mannar island that links with the mainland rail system.

About Titanium Sands Ltd (http://titaniumsands.com.au)

Titanium Sands Ltd (ASX:TSL) is focussed on defining and developing high grade, high value and low capital heavy mineral sands projects. The Company's 100% owned Mannar Island Project is located in North West Sri Lanka. Mannar Island is a 30km long and 5km wide sand island joined to the mainland shore by a road and rail causeway. A major heavy mineral sand resource has been defined within the 166km^2 of tenure on Mannar island and the adjacent mainland coast. The Company is progressing with resource extension drilling and a scoping study.

The island nation of Sri Lanka is situated close to the south eastern tip of the Indian subcontinent. For over three millennia Sri Lanka has been centrally located on major trade and migration routes. International trade and engagement have been an integral part of the nation's history and remain so today in the rapidly evolving economic environment of Asia. Sri Lanka is only one of two South Asian nations to be ranked as high on the Human Development Index (HDI), an index that is a composite statistic of life expectancy, education, and per capita income. Major infrastructure and related construction projects to total of US$18 billion are currently underway in the capital Colombo and elsewhere, emphasising the attractive foreign investment friendly environment in Sri Lanka.

Competent Persons and Compliance Statements

Except where indicated, exploration results above have been reviewed and compiled by James Searle BSc (hons), PhD, a Competent Person who is a Member of the Australian Institute of Mining and Metallurgy, with over 37 years of experience in metallic and energy minerals exploration and development, and as such has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Dr Searle is the Managing Director of Titanium Sands Limited and consents to the inclusion of this technical information in the format and context in which it appears.

The statements relating to the estimation of mineral resources above and related QA/QC investigations have been undertaken by Mr Kobus Badenhorst and Mr Bernhard Siebrits. Mr Kobus Badenhorst is a director of GeoActiv (Pty) Ltd. and is registered with the South African Council for Natural Scientific Professionals (SACNASP). Mr Siebrits is a consultant, registered with SACNASP and a Member of the Australasian Institute of Mining and Metallurgy. Mr Badenhorst and Mr Siebrits has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Badenhorst and Mr Siebrits consent to the inclusion in this report of the matters based on his information in the form and context in which it appears.

References to ASX releases included in this report.

This report includes information that relates to Exploration Results and Mineral Resources prepared and first disclosed under JORC Code 2012. The information was extracted from the Company's previous ASX announcements as follows:

**An initial JORC inferred mineral resource of 10.3 Mt with total heavy mineral (THM) of 11.86% compiled by independent consultants was reported in full to the Australian Securities Exchange on the 22nd April 2015. This resource was based on a historical drill hole data base of 785 auger drill holes and from the 115 holes drilled in early 2015. The drilling and the defined resource envelope was largely confined to within 150m of the Mannar Island shoreline. This resource equates to Domain 0 referred to in this updated resource, in which tonnes and THM% remain unchanged but there has been minor changes to the mineral species allocation to the components of the block model due to additional chemical data generated during this current resource update.*

***Acquisition of the Mannar Island Project by Titanium Sands Ltd was formally concluded and the Company re-instated to trading on the Australian Securities Exchange on the 18th of December 2018. This followed the closing of a prospectus to raise A$6million confirmed to the Australian Securities Exchange on 14th December 2018 .*

****Results from drilling on the Mannar Island Project undertaken subsequent to 22nd April 2015 resource statement and used in this present resource update were reported to the Australian Securities Exchange on the 31st January 2018.*

These announcements are available to view on the Company's website www.titaniumsands.com.au

The Company confirms that it is not aware of any new information or data that materially affect the information included in the relevant market announcements and, in the case of estimates of Mineral Resources that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the relevant original market announcements.

Forward-Looking Statements

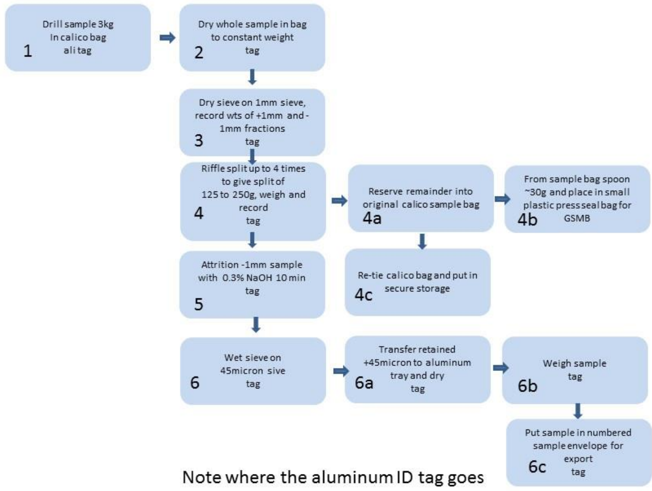
This document may include forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning the Company's planned exploration program and other statements that are not historical facts. When used in this document, the words such as "could," "plan," "expect," "intend," "may", "potential," "should,", "further" and similar expressions are forward-looking statements. Although the Company believes that its expectations reflected in these forward- looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that further exploration will result in additional Mineral Resources.

APPENDIX 1

The JORC Code (2012) describes a number of criteria, which must be addressed in the Public Report of Mineral Resource estimates for significant projects. These criteria provide a means of assessing whether or not parts of or the entire data inventory used in the estimate are adequate for that purpose. The resource estimate stated in this document was based on the criteria set out in Table 1 of that Code. These criteria are discussed in the tables below.

JORC Code Assessment Criteria	Comments
Section 1	**Sampling techniques and data**
Sampling Techniques *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	A Dormer hand-auger was used for auger drilling. The bucket was designed to be able to do 0.5 m samples per drill run. Sampling was therefore done on 0.5 m intervals, unless penetration problems caused incomplete samples at the end of holes. Where some minor penetration problems were experienced, smaller sample runs were done. The full sample from the auger bucket was collected in a calico sample bag and assigned an Alpha numerical sample number. All samples were transported to the site office / Prep Lab sample prep facility in Pesalai on Mannar Island. The Prep Lab will receives samples up to c 2.4kg in weight / sample.. All samples from the drilling program were prepped, even samples perceived to be low grade. Reference / residual samples for samples sent to the analytical laboratory are safely stored at the site office. Permits for the export of the samples were sourced in Sri Lanka, on receipt of the permits the samples were couriered via air freight to Johannesburg where clearance took place for the samples. They were then air freighted to Cape Town where a representative from the laboratory, Scientific Services CC, collected the samples.
Drilling Techniques *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.), and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether*	A Dormer hand-auger was used for auger drilling. The bucket has a diameter of 75mm. The auger bucket was designed to drill 0.5 m samples per drill run. Larger samples would have become too heavy and would have resulted in sample falling out of the bucket. One meter drill rod extensions were used, with sufficient extensions on site to drill to 9m. The deepest auger holes drilled were MA176 and MA302, both drilled to 6.00m.

JORC Code Assessment Criteria	Comments
core is oriented and if so, by what method, etc).	
Drill Sample Recovery	
Method of recording and assessing core and chip sample recoveries and results assessed. *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	Detailed measurements were done during drilling prior to and after the removal of the drill bucket during drilling. This was to ensure that there were no collapse of the sidewalls. Re-drilling took place where this was not the case, or the hole and sampling stopped where sample recovery or hole collapse became a problem. Recoveries were estimated and recorded for each 0.5m drill interval. The sample recovery or penetration problems were purely linked to the shallow water table.
Logging	
Whether core and chip samples have been geologically and geotechnically *logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc), photography.* *The total length and percentage of the relevant intersections logged.*	Each sample was geologically logged for mineral composition, grain size, sorting, visual silt %, induration, and a rough visual estimate of the dark heavy mineral % component. Paper log information was transferred every night to an excel spreadsheet.
Sub-Sampling Techniques and Sample Preparation	
If core, whether cut or sawn and whether quarter, half or all core taken. *If non-core, whether riffled, tube sampled, rotary split, etc, and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	The Prep Lab will receives samples up to c 2.4kg in weight / sample that have to be dried, sieved on a 1mm aperture vibrating sieve, the +1mm and -1mm fractions weighed, then the –1mm fraction riffle split to a sub-sample of c 125-250g and the remaining material retained in storage. The 125-250g sample is weighed then undergoes rotary light attritioning in a 0.3-0.5% NaOH solution. The subsample will then be wet sieved on a 45 micron vibrating sieve with retained +45 micron material being dried then weighed and packaged for export. A duplicate sample was riffled from every 20th sample, i.e. 5% of the total. The riffler was thoroughly cleaned after each sample.

JORC Code Assessment Criteria	Comments
Whether sample sizes are appropriate to the grain size of the material being sampled.	
Quality of Assay Data and Laboratory Tests *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	The initial drying (at between 80 to 105 degrees C via gas oven), de-sliming and oversize removal was conducted at the site Prep Facility on Mannar Island. The procedures are shown below.  Analytical work on the tetrabromoethane (TBE) based THM determination and subsequent magnetic separation work was done by Scientific Services C.C., Cape Town. XRF work was done on the fractions of the magnetic separation samples • The determination of THM % sample concentrate using TBE at a specific gravity (SG) of 2.95, are as follows: • TBE is placed into the glass flask up to the indicated mark. • Place approximate 1 scoop of sample into the flask. • Wash down the sides of the flask and impeller with TBE to ensure all material is in the TBE. • Run the mixer for about 10 seconds. • Wash down again to ensure no material is ‘hung’. • Run the impeller mixer repeatable in 10 second bursts until sure that all heavies have been liberated. • Allow to stand for 5-10 minutes or until no more material cascades to bottom. • Once the discharge pipe is clear of suspended material release the tube to allow the concentrate to be captured in the filter paper. Store this labeled filter paper. • Process any remaining sample as above ensuring no concentrate is lost. • Finally flush out the floats by opening the tube and allowing the floats to fall into filter paper – allow this to stand capturing all the TBE which will be reused at a later stage. • Wash all concentrates and floats thoroughly with acetone to reclaim as much TBE as possible.

JORC Code Assessment Criteria	Comments
	• After the concentrate filter is acetone rinsed and dried, transfer the concentrate very carefully into a bag by opening the filter paper ensuring nothing is lost. • Place the floats into the waste drums unless specified by the client to do otherwise. • Check the SG of the TBE with the density tracers provided and re-use as appropriate.
Verification of Sampling and Assaying *The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	Kobus Badenhorst did twin and test holes on c 5% of the drilling done during the program. QA/QC of all the work done was performed by Bernhard Siebrits of GeoActiv.
Location of Data Points *Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	Data and work was done in UTM, WGS84. A hand held Garmin GPS was used for the positioning and final position of the auger holes. The X and Y coordinates were collected and entered into the project spreadsheet. The handheld GPS Z data were found to be very inaccurate. Consequently a GeoEye satellite based Digital Terrain Model (DTM) study that covers the entire Mannar Island was done in 2015, the data interpretation and manipulation for the areas covered by the resource update was done by a highly qualified land surveyor during 20117. The X and Y coordinates of the drillholes was used to elevate the drillholes to the DTM surface prior to resource modelling taking place. This will supply significantly more accurate Z data as the DTM is based on 13 Differential GPS derived points.
Data Spacing and Distribution *Data spacing for reporting of Exploration Results.* *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	The drilling program for the updated resource was conducted at 400m inter-drill line spacing, with 50m inter-drillhole spacing on the lines. .
Orientation of Data in Relation to Geological Structure *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to*	Drilling took place in fences perpendicular to the interpreted strike of the mineralized ore bodies, this was confirmed during modelling.

JORC Code Assessment Criteria	Comments
which this is known, considering the deposit type. *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	
Sample Security	All sampling, prep and packing work took place under supervision of a site geologist. A representative from the Analytical laboratory, Scientific Services CC, collected the samples from the airport in Cape Town, South Africa.
The measures taken to ensure sample security.	
Audits and Reviews	Statistical analyses of the QA/QC samples were conducted by GeoActiv. A Prep Facility (on Mannar Island) and lab audit at Scientific Services was conducted by Kobus Badenhorst and Bernhard Siebrits of GeoActiv.
The results of any audits or reviews of sampling techniques and data.	
Section 2	**Reporting of exploration results**
Mineral Tenement and Land Tenure Status	The acquisition of the Mannar Island Project and all the exploration licenses from Srinel Holdings Ltd by Titanium Sands Ltd (acquired 100% of the Srinel shares) was formally concluded and the Company re-instated to trading on the Australian Stock Exchange on the 18th of December 2018.
*Type, reference name/***number***, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	
Exploration Done by Other Parties	Work post 2015 was all conducted by Srinel staff, supervised by TSL (James Searle).
Acknowledgment and appraisal of exploration by other parties.	
Geology	There is general consensus that the heavy minerals in Sri Lanka were derived from Precambrian (Proterozoic) high-grade metamorphic rocks that account for more than ninety percent of the island. These crystalline basement units are subdivided into 3 major litho-tectonic subdivisions, namely the Highland, Wanni and Vijayan Complexes. The heavy minerals ilmenite, rutile, zircon, sillimanite and garnet commonly occur in the coastal sands. Mineralization is high in the tidal, beach and berm areas, with significant inland mineralization proven on Mannar Island.
Deposit type, geological setting and style of mineralisation.	
Drill hole information	Drill hole information used in this resource update has previously been reported in full to the ASX (30th January 2019) including • Drill hole identification,

JORC Code Assessment Criteria	Comments
	• Collar locations. • Dip, all holes vertical. • Down hole length and intercept depth • Hole length
Data Aggregation Methods	• Weighted averages of intercept length and grade were used. • No cut off grades were applied to drill hole data. • Cut off grades were only applied to the block model of the mineralised zone.
Relationship betweenmineralisation widths and intercept lengths	Mineralisation a horizontal blanket, drill holes all vertical.
Diagrams	Drill hole diagrams, and sections included with scale and locations.
Balanced reporting	All drill hole results reported
Other substantive exploration data	None
Further work	As stated further drilling will target depth and lateral extensions to the modelled mineralisation.
Section 3	**Estimation and reporting of mineral resources**
Database Integrity *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	The data was captured in Excel spreadsheets. GeoActiv performed validation checks on all the data and analyses before it was used in modelling.
Site Visits *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	One of the Competent Persons, Kobus Badenhorst, visited the exploration sites during the auger drilling phase in 2017.
Geological Interpretation *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in*	All the drillhole intersections with the THM above 1% were considered as the mineralization envelope from surface to the end of holes. The domain boundaries of the mineral sand resource were extended to half the drill line spacings. The current drill spacing provides sufficient degree of confidence in the interpretation and continuity of grade for an Inferred Mineral Resource.

JORC Code Assessment Criteria	Comments
guiding and controlling Mineral Resource estimation. *The factors affecting continuity both of grade and geology.*	
Dimensions	
The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The Inferred Resource was divided into 3 Domains, due to different locations. The extents of the mineralization were within **Domain 1**: 7,500 m x 2,500 m x 2 m, **Domain 2**: 9,500 m x 1,000 m x 2m and **Domain 3**: 4,000 m x 400 m x 2m.
Estimation and Modelling Techniques	
The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters, and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *The assumptions made regarding recovery of by-products.* *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. 20ulphur for acid mine drainage characterisation).* *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *Any assumptions behind modelling of selective mining units.* *Any assumptions about correlation between variables.* *Description of how the geological interpretation was used to control the resource estimates.* *Discussion of basis for using or not using grade cutting or capping.* *The process of validation, the checking process used, the comparison of model data to drill*	The block sizes that were created were100 m X 100 m X 2 m and with minimum sub blocking of 25 m X 25 m X 0.5 m. Inverse distance to the power of 3 was used for *in situ* grade interpolation for all the variables. The general aspects of the estimation were as follows: • The variogram ranges of the THM % were used for all the variables in the respective domains 1 and 2 and for domain 3 the ranges of domain 1 was used; • A minimum of 3 samples and a maximum of 15 samples were used for all inverse distance runs, except for the third pass when a minimum of 2 samples and a maximum of 15 samples were used; • Pass 1: search radii set to 268 m for the major and 2 m for the vertical for domain 1 and 3 and search radii set to 325 m for the major and 2 m for the vertical for domain 2; • Pass 2: search radii set to 402 m for the major and 3 m for the vertical for domain 1 and 3 and search radii set to 488 m for the major and 3 m for the vertical for domain 2; • Pass 3: search radii set to 1000 m for the major and 10 m for the vertical for all three domains; • Block discretisation was set to 4(X) by 4(Y) by 4(Z); • An octant search estimation method was used with the maximum of 3 adjacent empty octants in pass 1, a maximum of 5 adjacent empty octants in pass 2 and a maximum of 7 adjacent empty octants in pass 3; and • No sample limits per drillhole were applied. The mineral associations for ilmenite (ilm), leucoxene (leu), rutile (rut) and zircon (zir) were calculated with an expression as a calculated attribute in the block model. The model was validated visually and statistically. The result of the validation shows that the interpolation has performed as expected and the model was a reasonable representation of the data used and the estimation method applied.

JORC Code Assessment Criteria	Comments
hole data, and use of reconciliation data if available.	
Moisture	
Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	All tonnages were based on dry basis, volume measurements converted to tonnes using a dry bulk density of 1.76 for domain 1, 1.74 for domain 2 and 1.75 for domain 3.
Cut-off Parameters	
The basis of the adopted cut-off grade(s) or quality parameters applied.	The tabulated resources are based on a no cut-off basis, but also using lower cut-off grades of 2%THM.
Mining Factors or Assumptions	
Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. *It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	No assumptions were made regarding possible mining methods.
Metallurgical Factors or Assumptions	
The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	The analytical results and mineralogical analyses could be the basis for the metallurgical extraction methods.
Environmental Factors or Assumptions	GeoActiv has not investigated and was not aware of any environmental issues that would affect the eventual economic extraction of the deposit.

JORC Code Assessment Criteria	Comments
Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk Density	The Relative Density (RD) or specific gravity was determined by digging pits of roughly 0.8m by 0.8m by 0.5m deep at 55 locations throughout the drilling area, then accurately weighing the sand and determining the volume of the holes by inserting and accurately measuring the volume of water inserted in the pits (after using a very thin lining in the pits). RD measurements of between 1.74 of 1.76 were calculated and used in different domain areas for the Mannar deposit.
Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	
Classification	Resources were classified in accordance with the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC, 2012). The classification of Mineral Resources was completed by GeoActiv based on the geological confidence criteria, drill spacing, quality of drilling, sampling information, grade continuity and confidence in estimation of heavy mineral content and mineral assemblage. The high variances in the THM %, oversize % and the silt % resulted in a lower confidence on the estimates. All the Mineral Resources has been classified as Inferred.
The basis for the classification of the Mineral Resources into varying confidence categories. *Whether appropriate account has been taken of all relevant factors, i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data.* *Whether the result appropriately reflects the Competent Person(s)' view of the deposit.*	

JORC Code Assessment Criteria	Comments
Audits or Reviews	No independent reviews of the Mineral Resource estimate have been conducted to date. An in-company review by James Searle has taken place.
The results of any audits or reviews of Mineral Resource estimates.	
Discussion of Relative Accuracy/Confidence	This is a global resource with no production data.
Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	

APPENDIX 2

GeoActive (Pty Ltd) Resource Statement Memorandum

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Memo

To: James Searle
Managing Director
Titanium Sands Limited (ASX TSL)

From: Kobus Badenhorst
Managing Director
GeoActiv Pty Ltd

Date: 06 February 2019
Re: **Titanium Sands Limited – Updated Resource Statement, Mannar Island Project, Sri Lanka**

GeoActiv Pty Ltd (GeoActiv) provided Titanium Sands Limited (TSL) with an updated resource model and Mineral Resource statement for the Mannar Island heavy mineral sands deposit at the 6th of February 2019, deposit based on Mannar Island in north-western Sri Lanka. A resource model and Mineral Resource statement was provided by GeoActiv (with the same authors as the updated resource model and Mineral Resource statement) on the 22nd of April 2015, the updated statement covers significant work that was carried out on the project subsequent to the initial statement in 2015 and prior to end 2018.

Exploration work conducted and reported on during the 2015 Mineral Resource statement focused on a narrow strip of mineralization on and adjacent to the current strand / beach area (see Tables 1 and 2 for 2015 Inferred Resource statement without a lower THM% cut-off and using a 2% lower THM% cut-off respectively, as well as the Domain 0 in Figure 2). Subsequent to 2015 significant hand-auger exploration drilling, totaling 1,075 boreholes was conducted on inland heavy mineral sands mineralization. Drilling was conducted at 400m inter-drill line spacing; 50m inter borehole spacing on the lines and at 0.5m sample intervals. Drilling was conducted under strict recovery protocol, with drilling taking place up to the current water table; with the average borehole depth c. 1.5m (deepest hole was drilled to 6m).

GeoActiv, via Kobus Badenhorst during on site work, conducted a QA/QC process and drilled 56 twinned and check hand-auger boreholes throughout the drilled area. In most cases the original borehole that was being twinned was clearly visible.

A Relative Density (RD) determination program was also initiated and initially supervised by Kobus Badenhorst. The RD was determined by digging pits of roughly 0.8m by 0.8m by 0.5m deep at 55 locations throughout the drilling area, then weighing the sand and determining the volume of the holes by inserting and accurately measuring the volume of water inserted in the pits (after using a very thin lining in the pits). RD measurements of between 1.74 of 1.76 were calculated and used in the different domain areas for the Mannar deposit.

Additional mineralogical studies, building on work done during the 2015 resource model and Mineral Resource statement work, were conducted by GeoActiv as part of the mineral assemblage determination for the updated model and Resource statement. The updated January 2019 block model Resource statement supplied can be seen in Tables 2 and 3 (showing both the Inferred resource without a lower THM% cut-off and using a 2% lower THM% cut-off respectively), with Figure 1 showing the additional (sans the 2015 Inferred resource material) Inferred resource within the exploration licenses, the mineral assemblage reflects the additional mineralogical work conducted.

Table 1: *The2015 Inferred Mineral Resources estimation for Mannar without a lower cut-off.*

Licence	Volume (Mm^3)	Tonnes (M)	THM %	Silt %	Oversize %	Ilm %	Leu %	Rut %	Zir %
180	4.03	7.06	6.87	3.25	9.60	3.44	0.50	0.09	0.14
182	3.81	6.66	10.27	2.44	6.56	5.24	0.68	0.23	0.25
370	0.17	0.31	15.69	2.95	11.02	8.77	1.07	0.24	0.35
371	0.23	0.40	9.98	2.06	1.02	4.69	0.93	0.26	0.21
Total	**8.25**	**14.43**	**8.71**	**2.83**	**7.98**	**4.42**	**0.61**	**0.17**	**0.19**

**Block model and Total THM % for 2015 Inferred resource unchanged in this update, valuable mineral assemblage reflects additional mineralogical studies completed.*

Table 2 *The2015 Inferred Mineral Resources estimation for Mannar with a 2% THM lower cut-off.*

Licence	Volume (Mm^3)	Tonnes (M)	THM %	Silt %	Oversize %	Ilm %	Leu %	Rut %	Zir %
180	2.23	3.91	11.81	1.87	11.68	6.11	0.87	0.16	0.24
182	3.27	5.73	11.82	2.21	6.55	6.06	0.78	0.27	0.29
370	0.17	0.30	15.80	2.96	11.10	8.83	1.08	0.24	0.35
371	0.23	0.40	10.05	2.07	1.03	4.73	0.94	0.26	0.21
Total	**5.91**	**10.33**	**11.86**	**2.10**	**8.41**	**6.11**	**0.83**	**0.23**	**0.27**

**Block model and Total THM % for 2015 Inferred resource unchanged in this update, valuable mineral assemblage reflects additional mineralogical studies completed.*

Table 3: *The2019 Inferred Mineral Resources estimation for Mannar without a cut-off.*

Domain	Licence	Volume (Mm^3)	Tonnes (M)	THM %	Silt %	Oversize %	Ilm %	Leu %	Rut %	Zir %
1	EL182	5.25	9.25	5.04	1.89	9.77	2.39	0.44	0.12	0.12
	EL370E	2.34	4.11	2.41	0.53	4.05	1.02	0.19	0.06	0.04
	EL370W	12.78	22.50	3.85	0.56	1.86	1.72	0.32	0.10	0.08
	Sub Total	**20.37**	**35.86**	**3.99**	**0.90**	**4.15**	**1.81**	**0.34**	**0.10**	**0.09**
2	EL180	0.21	0.37	2.98	0.47	12.82	0.98	0.15	0.03	0.03
	EL181	1.65	2.86	12.48	0.62	24.79	6.27	0.94	0.16	0.24
	EL182	0.00	0.00	2.40	1.98	21.91	1.17	0.43	0.04	0.06
	EL370E	4.53	7.88	6.91	0.90	21.46	3.19	1.04	0.11	0.15
	Sub Total	**6.39**	**11.12**	**8.21**	**0.81**	**22.03**	**3.91**	**0.98**	**0.12**	**0.17**
3	EL370W	1.08	1.88	3.15	0.43	0.67	1.49	0.27	0.08	0.07
	Sub Total	**1.08**	**1.88**	**3.15**	**0.43**	**0.67**	**1.49**	**0.27**	**0.08**	**0.07**
Grand Total		**27.84**	**48.86**	**4.92**	**0.86**	**8.09**	**2.28**	**0.48**	**0.10**	**0.11**

Table 4 *The2019 Inferred Mineral Resources estimation for Mannar with a 2% THM lower cut-off.*

Domain	Licence	Volume (Mm^3)	Tonnes (M)	THM %	Silt %	Oversize %	Ilm %	Leu %	Rut %	Zir %
1	EL182	5.07	8.92	5.16	1.88	9.76	2.45	0.45	0.12	0.13
	EL370E	1.43	2.52	3.01	0.55	3.80	1.29	0.24	0.07	0.05
	EL370W	11.35	19.98	4.16	0.56	1.50	1.86	0.35	0.10	0.09
	Sub Total	**17.85**	**31.42**	**4.35**	**0.93**	**4.03**	**1.98**	**0.37**	**0.11**	**0.10**
2	EL180	0.15	0.25	3.62	0.50	8.11	1.20	0.18	0.04	0.03
	EL181	1.60	2.78	12.81	0.63	24.08	6.45	0.96	0.16	0.25
	EL182	0.001	0.001	5.36	1.22	10.34	2.63	0.99	0.09	0.15
	EL370E	3.92	6.82	7.74	0.87	20.85	3.58	1.17	0.12	0.17
	Sub Total	**5.66**	**9.85**	**9.06**	**0.80**	**21.43**	**4.32**	**1.08**	**0.13**	**0.19**
3	EL370W	0.85	1.48	3.55	0.40	0.65	1.66	0.31	0.09	0.08
	Sub Total	**0.85**	**1.48**	**3.55**	**0.40**	**0.65**	**1.66**	**0.31**	**0.09**	**0.08**
Grand Total		**24.36**	**42.76**	**5.41**	**0.88**	**7.92**	**2.51**	**0.53**	**0.11**	**0.12**

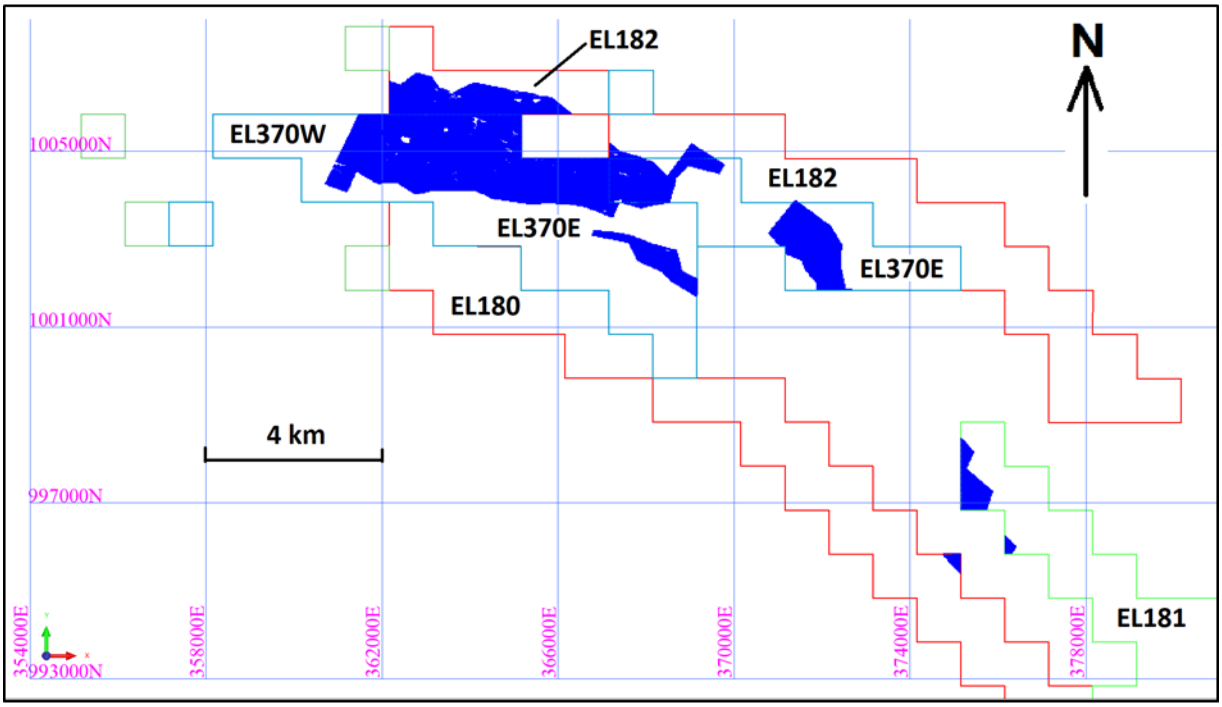

Figure 1: *The 2019 Inferred Mineral Resources for Mannar within the exploration licences.*

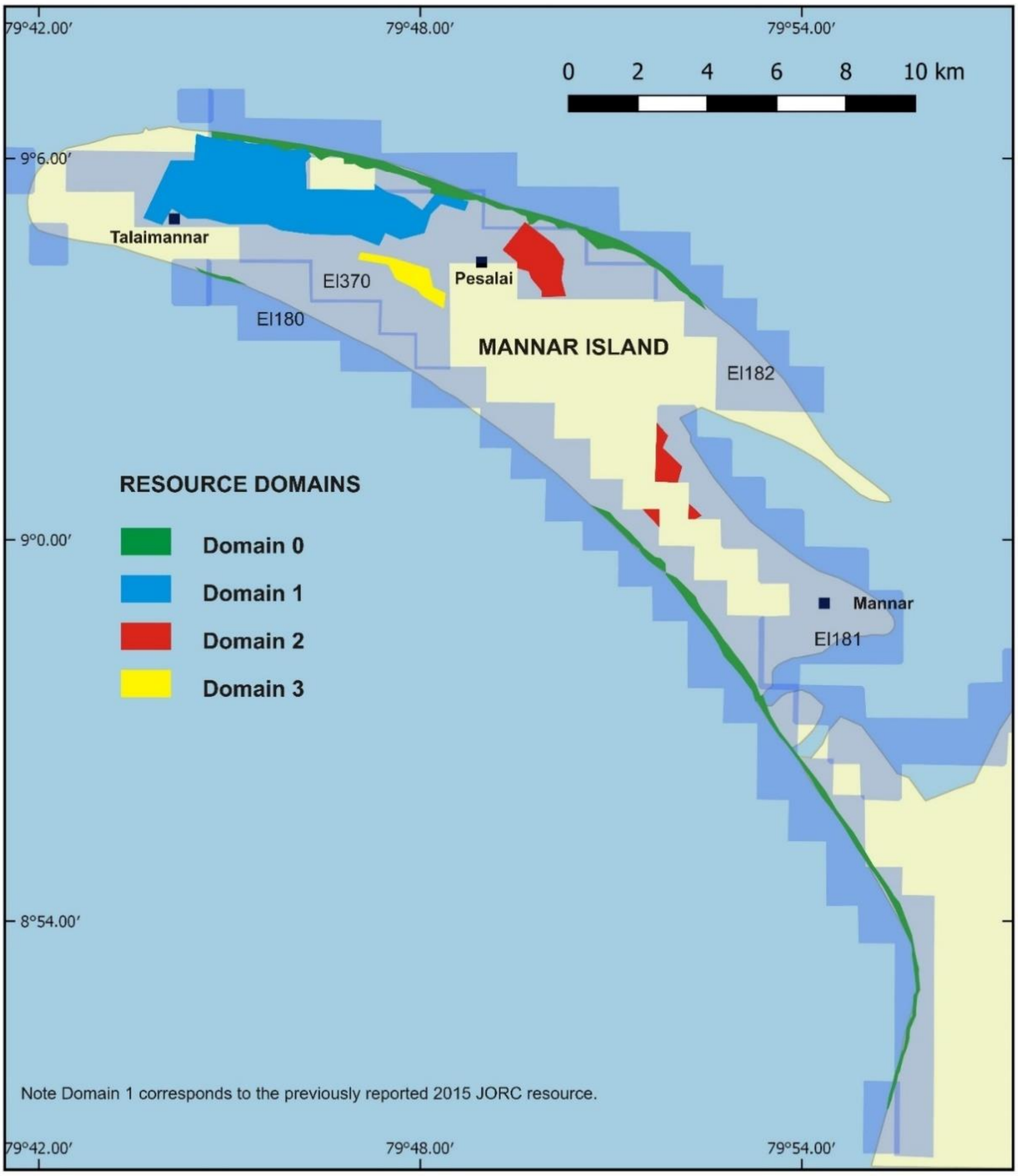

Figure 2: *Resource domains. Note Domain 0 represents the previously reported 2015 JORC resource.*

The extents of the mineralization within the 3 domains in this update were within **Domain 1**: 7,500 m x 2,500 m x 2 m; **Domain 2**: 9,500 m x 1,000 m x 2m and **Domain 3**: 4,000 m x 400 m x 2m.

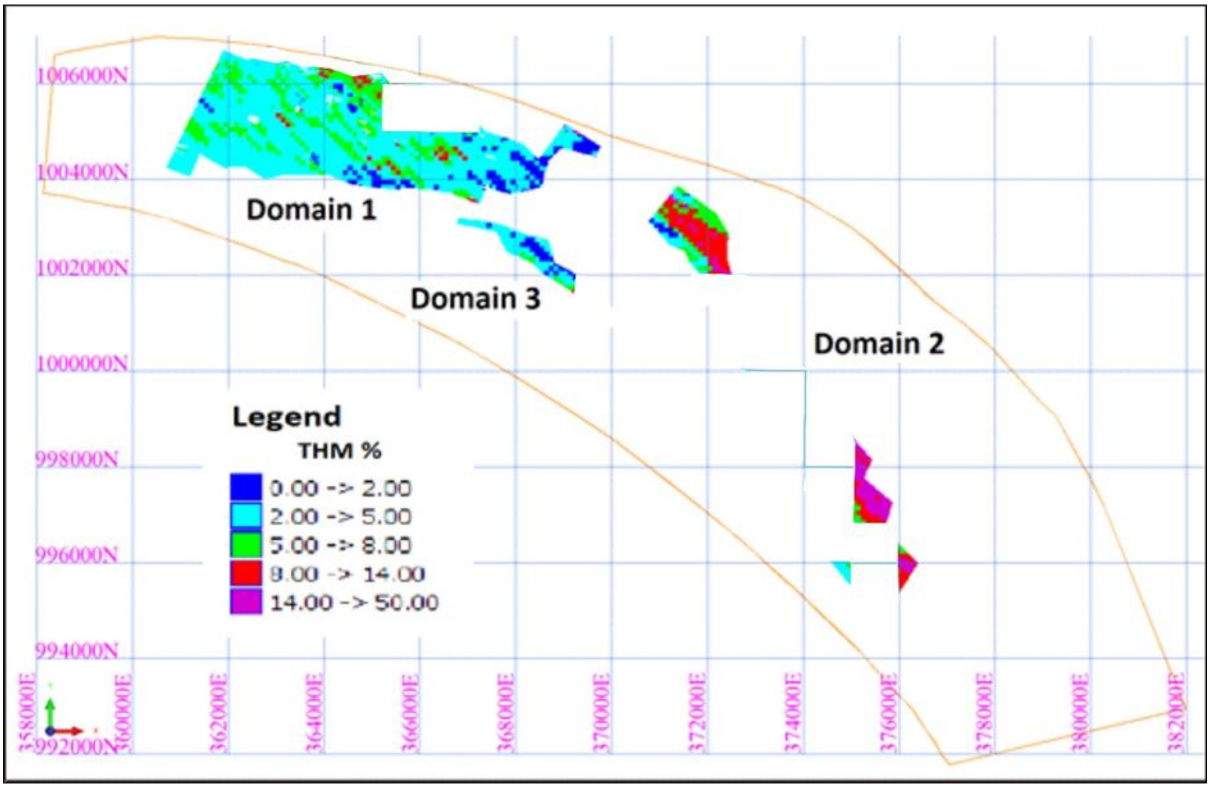

Figure 3: *The THM % estimates in the block model for the updated resource, with the Domains also indicated.*