



DISCOVERY  
africa

## Discovery Africa Limited

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4 April 2014

## DAF acquires a further exploration licence in Uganda

### Board of Directors

Danie Van Den Bergh  
(Executive Chairman)  
Kevin Nichol  
(Managing Director)  
Philip Thick  
(Non-Executive Director)  
Ian Lovett  
(Non-Executive Director)

### Company Secretary

Melanie Leydin

### Securities on Issue:

**DAF:** 200,734,698 ordinary shares

**DAFO:** 43,998,005 20c listed  
options

**DAFAK:** 12,500,000 9c unlisted  
options

**DAFAL:** 5,000,000 9c unlisted  
options

### About Discovery Africa Limited

Discovery Africa Limited ("Discovery" or "the Company") is an Australian public company that is focused on the exploration and development of the Kitgum Graphite Project in Uganda, Area 51 Graphite Project in Namibia, the Tanzanian Graphite Project and the Brandberg Lithium Project in Namibia.

The Directors of Discovery Africa Limited ('Discovery', 'DAF' or 'the Company') advise that they have now executed a Tenement Sale Agreement ('TSA') with respect to Exploration Licence No. 1173 ('EL 1173'), located in Uganda, Africa. The acquisition of this licence allows the Company to increase the area surrounding the Kitgum Project, which is highly prospective for Graphite, and allows the Company to carry out an assessment on further ground in Uganda.

### Acquisition terms

Below are the key terms of the TSA:

- Upon execution of the TSA, the Company will pay \$US 25,000 cash to the vendors;
- Upon execution of the TSA, the Company will issue 9,500,000 fully paid ordinary shares to the vendors.
- 12 months following execution of the TSA, the Company will pay US \$75,000 cash to the vendors.

The Board of Discovery Africa is proud to announce the acquisition of a further exploration licence which continues along strike of the Kitgum Project.

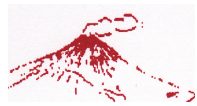
### Independent Valuation of EL 1173

Discovery Africa Limited (ASX: DAF) provides an Independent Valuation Report of Exploration Licence 1173, prepared by Minnelex Pty Ltd for release to the market. Minnelex is a professional geological consulting and valuations practice.

The attached Independent Valuation report have been prepared and being released to the market solely for the purpose of compliance with ASX Listing Rule 7.1A.3. None of the information in the reports is a forecast or projection of expected results or earnings guidance by or on behalf of DAF or any officer, employee or consultant of DAF.

### For further information, contact:

Kevin Nichol  
Managing Director



**MINNELEX PTY. LTD.**

GEOLOGICAL CONSULTING SERVICES & VALUATIONS

ABN 99 096 513 276

R. C. W. Pyper  
Principal, Minnelex Pty Ltd  
283 Huntingdale Street  
Pullenvale, Qld 4069  
Ph/Fx 07 33742443 M 04-19661342

4 April 2014

The Directors  
Discovery Africa Limited

**INDEPENDENT VALUATION OF THE KITGUM GRAPHITE PROJECT  
HELD UNDER EL1173**

At the request of Mr Kevin Nichol of Discovery Africa Limited [Discovery], Minnelex Pty Ltd [Minnelex] has prepared a valuation of EL1173 which is along strike of the Kitgum Graphite Project. No site visit for the assessment has been carried.

The EPM is an extension of the Kitgum EPM which was at a very early stage of exploration with little available information on its regional potential; currently it is valued at between \$302,000 and \$1,355,000, indicating a most likely value of around \$830,000. This project, with similar geology and mineral potential but one third the size is valued at between \$85,000 and \$430,000 with a preferred value of \$260,000

Minnelex and Robert Pyper have prepared a wide range of Independent Expert and Specialist's reports relating to the requirements of the ASX and ASIC. A list of Minnelex Independent Reports issued for valuation purposes is available.

The valuation does not provide an opinion as to share or corporate value but values the exploration tenements only.

The valuation has been carried out to be generally in accordance with the relevant requirements of the VALMIN Code of the AusIMM and the Australian Securities and Investments Commission [ASIC] Regulatory Guides, 111 and 112, however the valuation has not included an independent check of the tenement status or agreements (if any) with landholders and no field visit was undertaken. Insufficient information has been provided to give other than a general indicative value. The VALMIN Code sets out the principles and matters, which should be taken into account in preparation of an expert report concerned with mining assets. Regulatory Guide 111 provides guidance on how an expert can help security holders make informed decisions about transactions. Regulatory Guide 112 explains how ASIC interprets the requirement that an expert is independent of the party that commissions the expert report (commissioning party) and other interested parties.

The report has been prepared by R C W Pyper, BSc. FAusIMM, GAICD. Consultant Geologist.

Yours faithfully

A handwritten signature in cursive script, appearing to read "R Pyke". The signature is written in dark ink on a light-colored, textured background.

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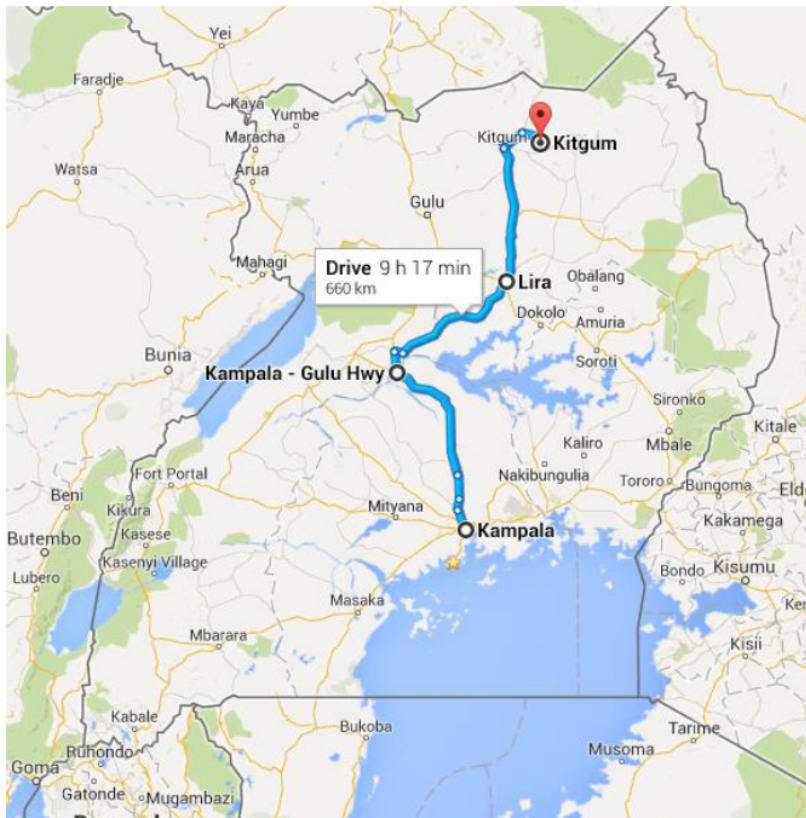
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**Introduction**

Discovery has an option over EL1173 of 93.508 sq km, located near Kitgum in Uganda covering a graphite prospect where the graphite is found in gneiss. The property is directly along strike from EL1025

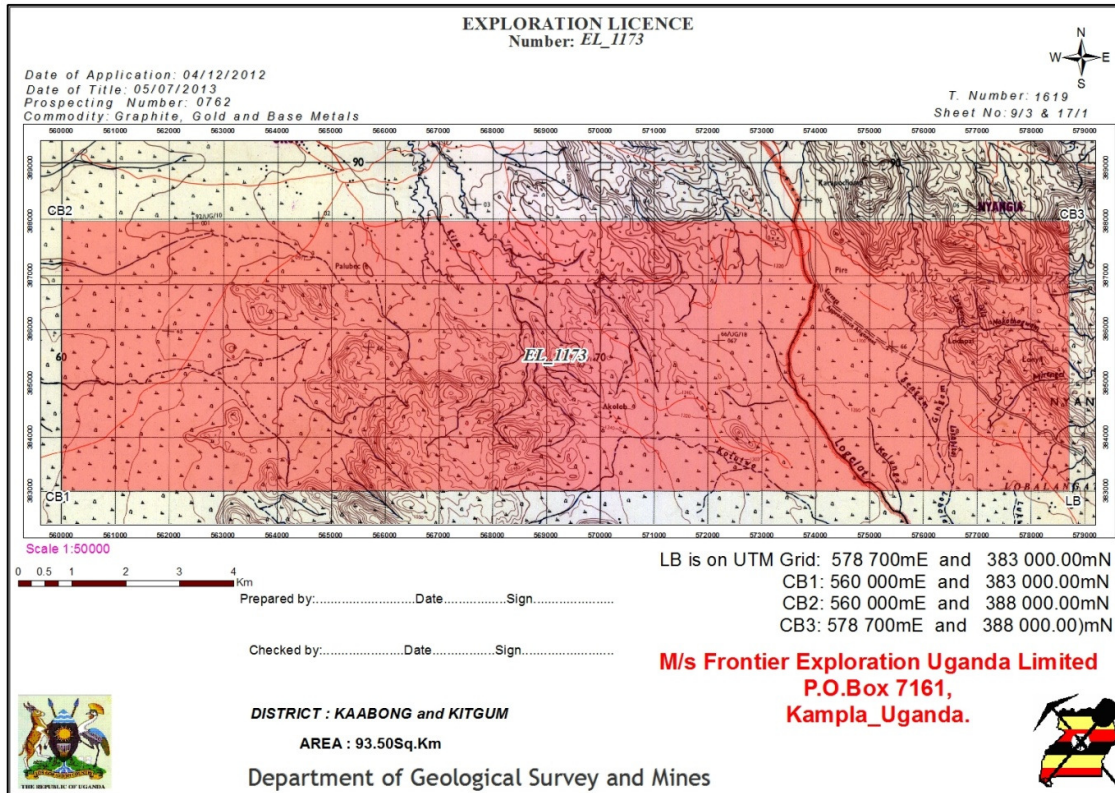
No substantive exploration activities for graphite have been carried out on the EL1173. The vendors (Consolidated African Ltd) of the property have undertaken a maiden program of pitting and sampling on EL1025, the adjacent property utilising the services of consultants TMTMining. This program included the digging and sampling of 29 pits that were completed between Dec/Jan 2013/2014

**Location**



**Figure 1: Location of Kitgum Town**

of 93.508 sq km



## Geology

The graphitic horizon on EL1025 is described as gneiss hosted flaky graphite. The mineralisation is hosted within rocks of Rom Mountain that are granulite or retrograde granulite facies, regionally metamorphosed rocks belonging to the Karamoja Group. The regional strike is to the NNW.

The following descriptions of the rock types within the tenement are based mainly on observations reported by Department of Geological Survey and Mines, Entebbe.

Over 95% of the exposures within the tenement comprise 3 main rock types that include alternating sequences of graphitic gneiss, quartzo-felspathic rocks and acid to intermediate pyroxene and hornblende granulites.

Less common rock types include:

- Amphibolites and basic pyroxene granulites which form several outcrops in the Lochoho pitting area.
- Intermediate medium to coarse grained hornblende bearing gneisses, uncommon in both areas.
- Graphitic or graphite poor gneisses with a bright green diopsidic pyroxene.
- Gneiss with abundant coarse orange garnets from one locality at Lochoho.

## Mineralisation

Initial exploration on the adjacent EL1025 included the digging of 29 pits averaging 2.5 m deep on three prospective areas which extending 3.5 km along strike and 1.5 km wide within a graphite trend that can be traced for 18 km along strike. Disseminated graphite was visible and 9 out of 16 samples collected by Discovery averaged above 10% total graphitic carbon (TGC).

Pits were designed to sample across a small section of the known strike of the mineralisation

- Rock chip samples were taken from pits that ranged in depth from 1.7m to 4.7 with an average depth of 3.0m
- Pits have an average width of 1.5m
- The samples were taken as composites from the pits combining 4 samples taken the walls of the pits that have been combined into one sample for analysis
- The samples are representative but selective of mineralised gneissic material only. The samples do not include any potentially barren material that may or may not have been encountered in the pit.
- The pits were excavated from three general locations within E11025 separated by 1.5km across strike and 3.5km along strike.
- At each sample locality the pits extend 400 to 500m along strike and 200 to 300m across strike
- At each sample locality the pits were dug in close proximity to each other on a local grid pattern approximately 100m apart. The grid pattern is not considered regular but determined by local topographic constraints
- The assay results show good local continuity between the mineralisation/graphitic gneissic bands between pits and are thus representative on a local scale
- On a larger tenement scale additional sampling and mapping is required to determine the extents and continuity of the mineralisation.
- The project is considered too early stage for Resource Estimation

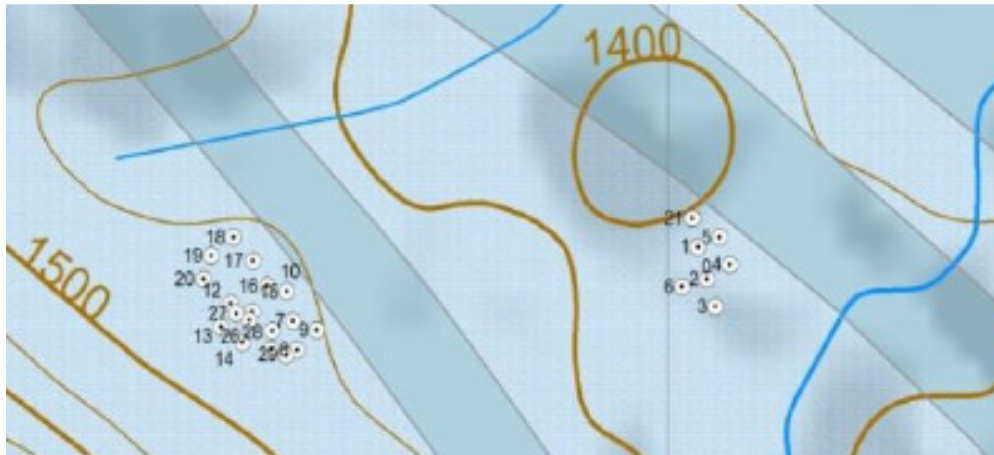


Figure 2: Location of pits in granulate



LEGEND

Table showing Sample results

Sample No.	Pit No.	Pit Depth (m)	East	North	RI	TGC (%)	Description
JJ1	-	-	570618	381582	1365	10.03	Graphite in oxidised outcrop
JJ2	-	-	570204	381619	1381	10.43	Graphite from bottom 3.4m of pit
JJ3	-	-	570119	381590	1389	8.24	Graphite from 0.5m
JJ4	2	4.2	570154	381478	1388	2.03	Low graphite from oxidised gneiss
JJ5	3	4.2	570181	381385	1384	4.73	Highly weathered gneiss
JJ6	-	-	570238	381535	1383	6.86	Highly weathered gneiss
JJ7	26	3.8	568421	381374	1471	13.9	Highly weathered gneiss
JJ8	27	4.6	568362	381368	1476	7.21	Moderately mineralised, weathered graphite gneiss
JJ9	14	2.8	568383	381265	1479	12.03	Well mineralised, highly weathered bed.
JJ10	12	1.9	568335	381393	1480	9.74	Vein like graphite in brecciated gneiss. Locally very high grade
JJ11	18	2.5	568344	381626	1468	25.3	High grade graphite in layers & veins
JJ12	17	2.6	568415	381549	1473	0.39	Low grade gneiss
JJ13	25	2	572450	379313	1469	15.07	Vein & disseminated graphite
JJ14	22	2.8	572413	379004	1522	15.57	Vein & disseminated graphite
JJ15	23	3.5	572103	378983	1491	11.5	Disseminated graphite in gneiss
JJ16	24	2.8	572000	378943	1476	15.23	Disseminated graphite in oxidised gneiss

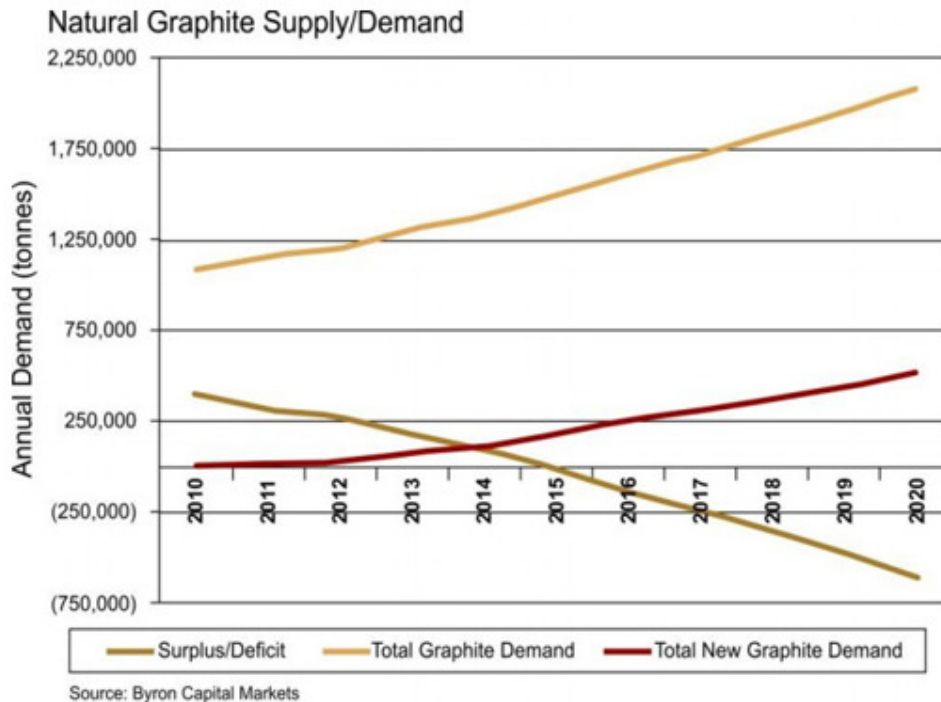
Table 1: Summary of data from pits visited

Note:

1. Datum: WGS:84
2. Zone: 36N
3. TGC analysis is the result of average 3 assay results from 3 splits from the same sample
4. Analysis completed by SGS for Total Graphitic Carbon (TGC) (Method CSA05V%)



## Graphite Economics



### Graphite prices

Like uranium, there is a posted price for graphite which provides a guideline with respect to longer term trends but transactions are largely based on direct negotiations between the buyer and seller. Prices exceeded US\$1,300/t in the late 80s but crashed to US\$600-750/t in the 90s as Chinese producers dumped product on the market. During this period there was essentially no exploration and as a result there are very few projects in the development pipeline.

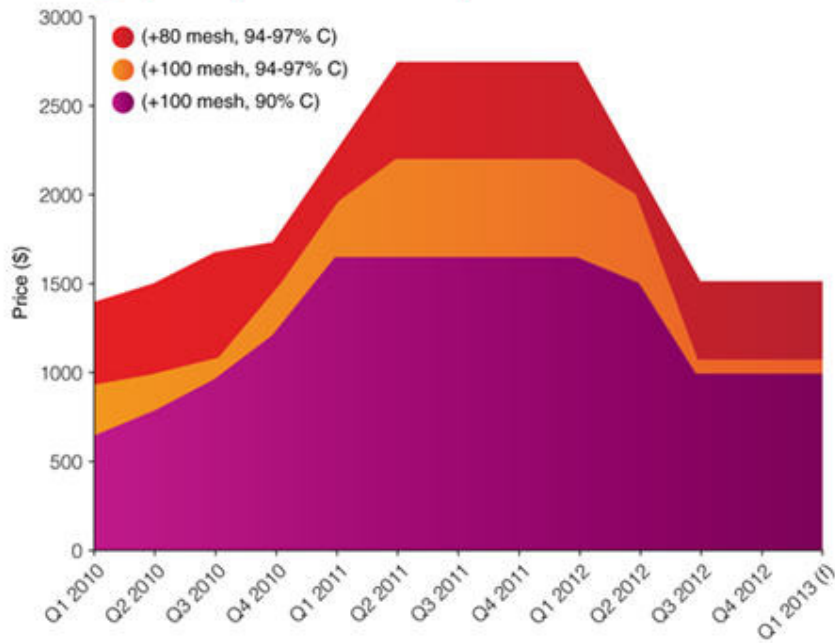
Graphite prices did not start to recover until 2005 and have surpassed US\$1,300/t with premium product rumoured to be selling at close to \$3,000/t as the supply of large flake, high carbon graphite is tight. Price appreciation is largely a function of the commodity super cycle and the industrialization of emerging economies as new, high growth applications such as Li ion batteries have not yet had a substantial impact on demand and consumption. Graphite prices have still not yet experienced anywhere near the price appreciation of other commodities and graphite must still be considered an overlooked and undervalued commodity in the context of the current super cycle.

The flake graphite market today is around 500,000 tonnes a year, and the price is around \$3,000 for premium product making it roughly a +\$1.2 billion industry. But this figure is rising with growing demand.

Prices are a function of flake size and purity with large flake (+80 mesh), 94% carbon varieties commanding premium pricing. In 2011, US\$ per tonne (94 - 97% Carbon) were:

- Large Flake - \$2,500 - 3,000 (+80 mesh)
- Medium Flake - \$2,200 - 2,500 (+100-80 mesh)
- Fine Flake - \$2,000 - 2,400 (-100 mesh)

**Flake graphite price trend comparison**



Source: Industrial Minerals Data

In May 28, 2013, the most commonly quoted grade, the +80 mesh, 94–97% carbon, the price was \$1,400/tonne. It has dropped about 50% since the highs of 2011 and 2012.

In June 2013 Indian graphite prices fell as cheap Chinese imports dominated the domestic market India’s flake graphite prices have fallen after low cost imports from China dragged down the price of higher quality domestic material. The price ranges for Indian flake graphite have dropped to:

+50 mesh, 90%-94% C, FOB India = \$1,700-\$1,800/tonne.

+80mesh, 90%-94% C, FOB India = \$1,450-\$1,550/tonne

**Graphite Production**

World production in of graphite in 2011 was 925 000t, with China being the largest producer (600 000t), followed by India (140 000t), then Brazil (76 000t). Natural graphite production was 1.1m tonnes worldwide in 2012. Of this total, flake accounted for 55%, amorphous 44% and vein 1%.

World demand increased during the second half of 2009, continuing to increase steadily throughout 2010 and 2011. Global consumption has increased from approximately 600 000t in 2000 to 1.1Mt in 2011. Demand from Brazil, Russia, India, China and emerging economies grew at approximately 5% per annum from 2000-2010. China produces over 70% of world graphite, mainly in a low-carbon powder or small flake form.

The market for graphite now exceeds one million tonnes per year (“Mtpy”), of which 60% is amorphous and 40% flake. Only flake graphite which can be upgraded to 99.9% purity, is suitable for making Li ion batteries. The graphite market is almost as large as the nickel market (1.3 Mtpy), far larger than the markets for magnesium (429 Mtpy), molybdenum (180 Mtpy) or tungsten (55 Mtpy), and more than 50 times the size of the lithium or rare earth markets.

## **Proposed Exploration**

To delineate the graphitic system within the EL, remote sensing will be used in conjunction with the regional interpretation of government magnetic data to determine the most prospective areas. These will be followed up with electromagnetic conductivity tests and/or IP. On completion, drilling, costeaning and pitting will be carried out to determine potential grades and tonnages of graphitic material.

## **Valuation**

There are few mines operating at grades of 5% TC or less and with new high grade discoveries coming on stream a grade of at least 5% or greater would probably be needed.

## **Geoscientific Rating**

The Geoscientific rating (or Kilburn approach) is an attempt by the Expert to quantify the various technical aspects of a property through the use of multipliers which are applied to a base (or intrinsic) value. This intrinsic value is the keystone of the method as it provides a standard base from which to commence a valuation. This intrinsic value is known as the basic acquisition cost (BAC) which represents "the average cost to identify, apply for and retain a base unit of area of title". Previous valuations using the method in Australia have determined that the BAC is to be applied to a tenement of average area and average tenure period (i.e. the total average expenditure per standard unit area, typically per block or per sq km). It is important to note that different practitioners use slightly differing approaches to calculate the BAC.

To arrive at a value for each property the valuer then grades four key technical attributes which either enhance or downgrade the intrinsic value of each property. The factors comprise off-property attributes, on-property attributes, anomalies and geology. The attributes are given incremental, fractional or integer ratings to arrive at a series of multiplier factors. These multipliers are then applied sequentially to the BAC to estimate the Technical Value of each mineral property. A fifth factor reflecting the current state of the market is then applied to estimate the Market Value.

The market component may be estimated according to the expert's knowledge of the particular property. This can include a discount by considering conceptual exploration target models for the area.

The geoscientific rating approach makes an attempt to implement a system that is both systematic and defensible. It demands a degree of detached rigor whilst endeavouring to account for the key factors that can be reasonably considered to impact on the exploration potential of a property. There is a body of theory that can be used to support that judgement. However, it is important to note that application of the method should be undertaken by qualified valuers and supported by other valuation methods otherwise there can be a tendency for a "value by numbers" approach.

### **Assumptions**

The valuation of an asset using the geoscientific rating method is based on a standard cost for a typical exploration project, to which a series of multipliers are applied to determine the Technical Value. This is then adjusted for local market conditions to determine the Fair Market Value of the project as at the effective valuation date. Components of the BAC include the identification costs and retention costs, application fees (including lodging caveats and assigning) rental, administration costs, security costs, heritage expenditure, rehabilitation and the expenditure commitment required by the Department for one year.

Given the nature of the exercise, there is inevitably a degree of subjectivity in making assessments regarding the applicable multipliers and base acquisition costs. Consequently another party may not necessarily reach the same conclusions as the selection of the appropriate costs and market factors to apply to the geoscientific rating method is fundamentally a matter of judgement. However, one of the major

benefits of the geoscientific rating method is that it discloses in clear, unambiguous terms the subjective judgements made by the valuer in assessing the merits of the project tenements.

**Metals Multiplier Table**

Multipliers or ratings and the criteria for rating selection are summarised in the table below. In determining the technical value for the tenements, the company's equity interest in the property is taken into consideration, if they are subject to either a farm-in, joint venture or option to purchase arrangement. In arriving at a fair market value, Minnelex has considered the current market for graphite and considers that the current market is unlikely to pay a premium for these early stage projects.

**Table 5 Metals Rating Criteria**

Rating	Off Property Factor	On Property Factor	Anomaly Factor	Geological Factor
0.1				Unfavourable geological setting
0.5			Extensive previous exploration gave poor results	Poor geological setting
0.9			Poor results to date	Generally favourable geological setting, under cover
1.0	No known mineralisation in district	No known mineralisation on lease	No targets outlined	Generally favourable geological setting
1.5	Minor workings	Minor workings or mineralised zones exposed	Target identified, initial indications positive	Favourable geological setting with structures or mineralised zones
2.0	Several old workings in district	Several old workings or exploration targets identified	”	
2.5	”	”	Significant grade intercepts evident but not linked on cross or long section	”
3.0	Minor abundant workings with significant previous production	Minor abundant workings with significant previous production	”	Significant mineralised zones exposed in prospective host rocks
3.5	”	”	Several economic grade intercepts on adjacent sections	
4.0	Along strike from a major mine(s)	Major mine with significant historical production		
5.0	Along strike from a world class mine	”		
10.0		World class mine		

The BAC for overseas tenements is much higher than for those in Australia because of the difficulties in getting established and estimates range from around \$2000 to over \$3000/ sq km.

**Geoscientific Valuation Results**

In the geoscientific calculation three calculations have been used

- 1) Area 1 of 6 x 1.5 sq km which contains the main graphite horizon
- 2) Area 2 of 93 sq km less area 1; this comprises the remainder of the EL

Assuming a BAC between \$2500 and \$3500 the project value (rounded) is tabulated below using the multiplication factors for the prospectivity of each zone.

	Sq Km	BAC	L	H	\$ x 1000	\$ x 1000
Area 1	9	2500	5.47	15	123	338
Area 2	84.5	2500	0.12	0.44	24	92
Totals					147	430

The geoscientific value range is between \$147,000 and \$430,000 for the EL. The large range of the valuation spread comes from the methodology where the factors used in early stage exploration areas are not constrained by potential grade and tonnes. Using the midpoint value the project currently has a value of around \$290,000.

At this early stage no other valuation methods are suitable for valuing the tenement.

## Qualifications and Experience

Minnelex is a geological consultancy, which has had considerable experience in the valuation of exploration properties. The person responsible for this report is:

R.C.W. Pyper. BSc. (geol.). GAICD. FAusIMM. Consulting Geologist

Mr Pyper is the Principal of Minnelex and is a geologist with 50 years of industry experience and 30 years of consulting practice in precious metals, base metals, coal, bauxite, gemstones, industrial minerals, iron ore, dimension stone and mineral sands.

## Disclaimer of Interests

At the date of this report and currently, Minnelex does not have, nor has had any relationship with Discovery other than as may have occurred as a result of providing consultancy services in the ordinary course of business. Minnelex and R C Pyper have neither relevant interest in, nor any interest in the acquisition or disposal of any securities of Discovery. Minnelex has no pecuniary or other interest that could be regarded as being capable of affecting its ability to give an unbiased opinion in relation to the acquisition of the mineral interests of Discovery.

Neither Minnelex nor Mr Pyper has received or may receive any pecuniary or other benefits, whether direct or indirect or in connection with the preparing of this report other than normal consultancy fees based on fee time at normal professional rates plus out-of-pocket expenses. The cost of this valuation was \$550.

## Competent Person Statement

The report is based on and fairly represents information and supporting documentation originally prepared by Mr Brendon Cummins for the adjacent EL1025 and released to the ASX on 19 February, 2014 (**Announcement**). Mr Cummins is a member of the Australian Institute of Geoscientists and qualifies as a competent person under the 2012 edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves” (**JORC Code**). Mr Cummins is a Member of the Australian Institute of Geoscientists and is a Consultant to Discovery Africa. The details contained in this document that pertain to exploration results or estimates of mineral resources or ore reserves are based upon information (**Information**) compiled by Mr Robert Pyper. Mr Pyper is a Fellow of the AusIMM and is a Consultant to Discovery Africa. Mr Pyper has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the JORC Code. Mr Pyper has consented to the inclusion in the report of the matters based on the Information in the form and context in which it appears. Discovery Africa is not aware of any new information or data that materially affects the information in the Announcement and all assumptions and technical parameters underpinning the estimates in the Announcement continue to apply and have not materially changed.

## References

Introduction to Natural Graphite:  
<http://www.asbury.com/Natural-Graphite.html>

Bedford Graphite Project:  
<http://www.megagraphite.com/assets/files/newbedforddetailedsummary.pdf>

Graphite One Resources: [http://graphiteoneresources.com/investors/graphite\\_101/](http://graphiteoneresources.com/investors/graphite_101/)

ASX submissions by Discovery:

31/12/13

22/1/14

28/1/14

7/2/14

19/2/14