

LUCAPA

ASX Announcement 19 November 2021

## THREE NEW HIGH-INTEREST TARGETS AT BROOKING

#### **KEY HIGHLIGHTS**

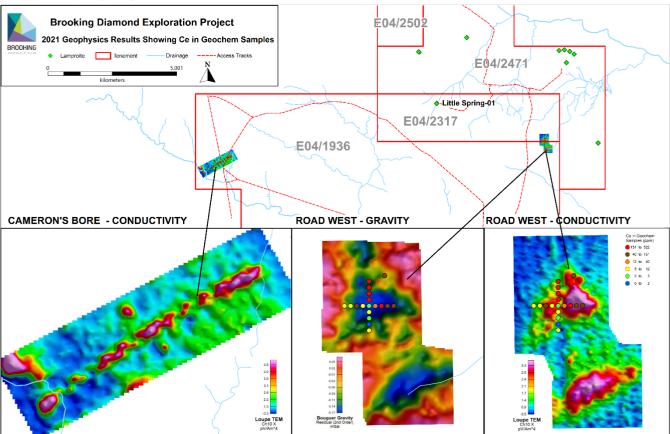
- Gravity and ground electromagnetic geophysical surveys completed at Brooking
- Three new high-interest primary source lamproite targets identified
- Similar signatures resulted in the discovery of the diamondiferous Little Spring Creek lamproite

Lucapa Diamond Company Limited (ASX: **LOM**) ("Lucapa" or "the Company") and its partner, Leopold Diamond Company Pty Ltd, are pleased to report the results of gravity and electromagnetic surveys that have identified three new high-interest primary source lamproite targets at the Brooking Diamond Project ("Brooking") in Western Australia's West Kimberley lamproite province.

The areas targeted in this campaign at Brooking were identified from satellite photo and airborne geophysics interpretation in areas where seven micro- and macro-diamonds and 72 chrome spinels ("chromites", a diamond indicator mineral) were recovered by Lucapa in the 2020 loam and stream sampling program (refer ASX announcement 21 December 2020).

In the Road West survey area, two high-interest targets have been identified. The coincident gravity lows and conductive highs signatures are typical of other lamproites previously discovered in the area. The signatures suggest the targets to be up to ~225 metres in diameter.

In the Cameron's Bore survey area, a high-interest target has been identified from a linear electromagnetic signature of ~1,100 metres in length (dyke like) near where diamonds and indicator minerals were recovered in previous sampling programs.



A linear high-interest target at Cameron's Bore (left) and the two high-interest targets at Road West (right)

**Managing Director Stephen Wetherall said**, "The recommencement of the Brooking exploration program has yielded early rewards by identifying three new high-interest primary source targets. We look forward to drilling or pitting them in the 2022 field season."

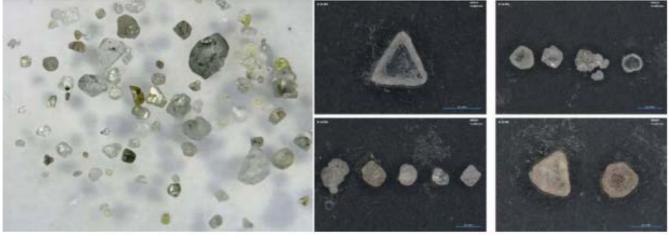
"As the diamond market continues to rebound, Lucapa is well positioned to deliver strong value as we progress our unique mix of exploration, mine development and niche high-end producing assets."

As part of this campaign, drone airborne magnetic surveys will also be conducted. The drone surveys are expected to be completed prior to the end of the year.

Interpretation of the combined geophysics and sampling results of the Road West anomaly indicate the probable presence of two new lamproites. One of the targets has similar soil geochemistry to previously discovered lamproites at Brooking. The second target at Road West has a similar geophysical signature but has not been part of any previous sampling campaign.

Follow-up drilling and/ or pitting on the high-interest targets will commence once required heritage clearance approvals are received in 2022.

As per the ASX announcement on 28 August 2018, Lucapa and its partners have already identified diamondiferous lamproite at Brooking where over 1,200 micro- and macro-diamonds were recovered from a drill program on the Little Spring Creek lamproite discovery (pictured below).



Micro- and macro-diamonds recovered from Lucapa's drilling programs in 2018 at Brooking's Little Spring Creek lamproite

Authorised by the Lucapa Board.

## STEPHEN WETHERALL MANAGING DIRECTOR

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#### **ABOUT LUCAPA**

Lucapa Diamond Company Limited is an ASX listed diamond miner and explorer with assets in Africa and Australia. It has interests in two producing diamond mines in Angola (Lulo) and Lesotho (Mothae). The large, high-value diamonds produced from these two niche diamond mines attract some of the highest prices per carat for rough diamonds globally. Lucapa and its project partners are also exploring for potential primary source kimberlites or lamproites at the prolific Lulo concession in Angola, the Brooking project in Australia and the Orapa Area F project in Botswana.

The Lulo mine has been in commercial production since 2015, while the Mothae mine commercial production in 2019.

Lucapa has signed a binding agreement to acquire the Merlin Diamond Project in the Northern Territory of Australia. It consists of a 24km² mining lease and a 283km² exploration lease encompassing the mining lease. The mining lease contains 11 previously discovered kimberlite pipes in three kimberlite clusters with an existing 4.4 million carat JORC 2012 compliant resource. There are two known diamondiferous kimberlites on the exploration lease.

The Board, management and key stakeholders in Lucapa have deep global diamond industry experience and networks all through the value chain from exploration to retail.

### **Competent Person's Statement**

Information included in this announcement that relates to exploration results and resource estimates is based on and fairly represents information and supporting documentation prepared and compiled by Richard Price MAusIMM who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Price is an employee of Lucapa Diamond Company Limited. Mr Price 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 Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves. Mr Price consents to the inclusion in the announcement of the matters based on this information in the form and context in which it appears.

#### **No New Information**

To the extent that this announcement contains references to prior exploration results and Mineral Resource estimates, which have been cross referenced to previous market announcements made by the Company, unless explicitly stated, no new information is contained. The Company confirms that it is not aware of any new information or data that materially affects 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.

#### **Forward-Looking Statements**

This announcement has been prepared by the Company. This document contains background information about the Company and its related entities current at the date of this announcement. This is in summary form and does not purport to be all inclusive or complete. Recipients should conduct their own investigations and perform their own analysis in order to satisfy themselves as to the accuracy and completeness of the information, statements and opinions contained in this announcement.

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## Appendix 1

# THREE NEW HIGH-INTEREST TARGETS AT BROOKING – JORC Code (2012) requirements –

## **Sampling Techniques and Data**

Criteria	JORC Code Explanation	Lucapa Commentary
Sampling techniques	<ul> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>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.</li> </ul>	<ul> <li>No sampling was undertaken.</li> <li>Ground electromagnetic surveys were undertaken by Atlas Geophysics. 38-line kilometres of data was acquired using a 50m line spacing over 5 rectangular blocks.</li> <li>The data was collected using a Loupe Portable EM profiling system. Loupe is a portable time-domain electromagnetic (TEM) system designed for near-surface conductivity measurements Loupe incorporates a 3-component coil sensor with 100 kHz bandwidth, fast-switching transmitter loop, simple user-interface and the ability to navigate and recover position using RTK GPS.</li> <li>Ground gravity surveys were undertaken by Atlas geophysics using a Scintrex CG-6 gravimeter. Data was collected on a 50m line spacing and 25m station spacing. Four blocks were surveyed.</li> <li>Gravity station locations were surveyed using a RTK GPS.</li> </ul>
Drilling techniques	<ul> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face- sampling bit or other type, whether core is oriented and if so, by what method, etc.).</li> </ul>	No drilling was undertaken.
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	No drill samples were taken.

Criteria	JORC Code Explanation	Lucapa Commentary
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	No drilling or logging was undertaken.
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all subsampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	No sub-sampling was undertaken.
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul>	No sample treatment or analysis was undertaken.
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	No verification of samples has been undertaken.
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Survey station sites were located using a built in RTK GPS on the Loupe EM system for the EM surveys.</li> <li>Gravity stations were surveyed using a Leica Geosystems RTK (GNSS/GLONASS) GPS.</li> <li>The grid system is MGA (GDA 1994).</li> </ul>

Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>The survey types, station locations and spacing was adjusted according to the type and size of the target being investigated and the survey technique being used.</li> <li>No mineral resource is being estimated based on the results presented.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	Where appropriate the station spacing and line orientation were adjusted to be perpendicular to the strike of the target being surveyed.
Sample security	The measures taken to ensure sample security.	No samples were taken.
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>No audits were undertaken.</li> <li>The data was reviewed by Terra Resources Pty Ltd.</li> </ul>

## Reporting of Exploration Results

Criteria	JORC Code Explanation	Lucapa Commentary
Mineral tenement and land tenure status	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The Brooking Diamond Exploration Project comprises Exploration Licences E04/1936, E04/2317 E04/2471 and E04/2502.</li> <li>The Project area is located approximately 55km NNW of Fitzroy Crossing in the West Kimberley region of Western Australia on the Lennard River 1:250,000 (SE51-08) and Leopold Downs 1:100,000 (3692) map-sheets. The project area straddles the boundary between the Brooking Springs and Leopold Downs pastoral leases.</li> <li>On 13 October 2016, Lucapa announced that it had agreed to acquire 80% of the project from Leopold Diamond Company. At the time the project consisted of E04/1936 and E04/2317.</li> <li>On 6 June 2017 Lucapa was granted E04/2471 for a period of 5 years.</li> <li>On 11 June 2018 Brooking Diamond Company was granted exploration license E04/2502.</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	<ul> <li>The project area has been continuously explored for diamonds since 1976; following the discovery by the Ashton Joint Venture, of the Big Spring Cluster of sub-economic, variably diamondiferous, dykes, pipes and sills of Miocene-aged olivine lamproite and leucite-lamproite at Big Spring, 5 km NNE of the Brooking Project area. The Ashton Joint Venture also recovered diamonds and fresh to fresh-worn lamproitic indicator minerals suggestive of derivation from at least one local provenance; from stream-sediment and soil samples collected from the tributaries of</li> </ul>

the Brooking, Homestead and Cajuput Creeks which drain the black-soil covered Devonian limestone reef complexes forming the Oscar Plateau.

 These positive results provided the stimulus for persistent exploration between 1976 and 2002 by Stockdale Prospecting, Metana Minerals NL, Mr Manning, Moonstone Diamond Corporation, Diamond Rose NL. Thundelarra Exploration Ltd/Resource Exploration and Diamond Exploration Consultants/Alcaston Mining. Historic exploration programmes have involved the acquisition of aerial photography and Landsat/ Spot imagery, airborne magnetic, resistivity and radiometric surveys, ground magnetic traverses, regional streamsediment, soil and loam sampling and associated geochemistry, lamproitic indicator mineral observation and associated mineral geochemistry and shallow percussion drilling. In 2002, following a regional HEM survey, Rio Tinto Exploration Pty Ltd discovered Leopold 1; a Miocene-aged poly-phase dyke of olivinephlogopite lamproite and olivine-leucite lamproite. This discovery, although barren of diamonds, provided impetus for continuing exploration for similar lamproites concealed under the transported Quaternary black-soils developed over the Devonian limestone karst topography forming the Oscar Plateau.

#### Geology

 Deposit type, geological setting and style of mineralisation.

- The targets for this exploration program are diamondiferous lamproites similar to the nearby Little Spring Creek, Big Spring lamproite pipes or the Ellendale bodies to the WNW.
- Like kimberlite, lamproite magma originates at upper mantle depths of 150 – 200km and may entrain diamonds and other minerals from the upper mantle during its rapid ascent to the earth's surface.
- The interaction of the hot magma with groundwater results in a highly explosive eruption that, in the case of the Ellendale lamproite field, has generally resulted in large, flared champagne glass shaped pipes near surface with a narrow pipe stem extending to depth.
- Minerals commonly present within lamproites include olivine, clinopyroxene, phlogopite, leucite and amphibole. Xenoliths and xenocrysts, including pyrope garnets and rare diamonds (of upper mantle origin) may also be present. The presence of these xenocrysts is dictated by the mantle lithologies sampled by the lamproite magma on its ascent to surface.
- Lamproites can only be diamondiferous if the lamproite magma intersects and samples diamondiferous mantle lithologies during its ascent, and if the conditions within the

		lamproite magma are such that the entrained
		<ul> <li>lamproite magma are such that the entrained diamonds are preserved once emplaced near or on the earth's surface (by rapid cooling of the lamproite to limit diamond resorption).</li> <li>The subcrop geology of the area consists of Devonian limestones and related rocks.</li> </ul>
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level - elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth hole length.</li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul> </li> </ul>	No drilling was undertaken.
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	No drilling was undertaken.
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	No drilling was undertaken.
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	Appropriate map and plans for the reported data with scale and north points are included with the text of the report.
Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	Results reported are complete.

## Other substantive exploration data

- Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.
- The areas targeted in this campaign at Brooking were identified from satellite photo and airborne geophysics interpretation in areas where seven micro- and macrodiamonds and 72 chrome spinels ("chromites", a diamond indicator mineral) were recovered by Lucapa in the 2020 loam and stream sampling program.

#### Further work

- The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).
- Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.
- Drone-borne magnetics will be conducted over these and other targets within the project area.
- Follow up drilling and/ or pitting on the highinterest targets will commence once required heritage clearance approvals are received in 2022.
- A further review of the satellite photo and airborne geophysics data will be undertaken to select additional targets based on the knowledge gained from this phase of work.