

## Changes to Argyle Diamonds Ore Reserves and Mineral Resources

**2 March 2018**

Rio Tinto's 2017 annual report, released to the market today, includes significant changes in estimates of Ore Reserves and Mineral Resources at Rio Tinto's Argyle Diamond mine in the East Kimberley, Western Australia.

The updated Mineral Resources and Ore Reserves are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 (JORC Code) and the ASX Listing Rules. Supporting information relating to the changes is set out in this release and its appendix. Ore Reserves and Minerals Resources are quoted on a 100 per cent basis. Rio Tinto's interest is 100 per cent.

During 2017, estimated Argyle Ore Reserves decreased by 13Mt from 29Mt to 16Mt. This decrease includes depletion of almost 5Mt due to production activities in 2017. The balance of the reduction results from a more conservative view on future production performance, grade and economic shut-off criteria.

The remaining reserves underpin the operation until 2020, with opportunities to increase reserve estimates and extend the operational life subject to technical and financial performance.

Following further reviews of resource development potential, and with the reduction in the Argyle Ore Reserve and the limited remaining mine life, the other mineralised deposits at Argyle do not demonstrate economic prospects and are not scheduled for production. As such, Argyle Mineral Resources, exclusive of Ore Reserves, decreased from 15Mt to 0Mt.

## Schedule – Argyle Diamonds Ore Reserves

Type of mine	Proved ore reserves		Probable ore reserves		Total ore reserves 2017 compared with 2016				Rio Tinto share	
	at end 2017		at end 2017						Average	Recoverable
	(a) Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	mill recovery	Interest %
					2017	2016	2017	2016	%	
Diamonds (b)					millions of tonnes	millions of tonnes	carats per tonne	carats per tonne	millions of carats	
<b>Reserves at operating mines</b>										
Argyle (Australia) (t)	U/G		16	2.4	16	29	2.4	2.3	100.0	38.5

Notes

(a) Type of mine: O/P = open pit, O/C = open cut, U/G = underground, D/O = dredging operation.

(b) Reserves of bauxite, diamonds and iron ore are shown as recoverable Reserves of marketable product after accounting for all mining and processing losses. Mill recoveries are therefore not shown.

(t) The decrease in Argyle Reserve tonnes follows mining depletion and an updated life of mine plan. A JORC Table 1 in support of these changes will be released to the market contemporaneously with the release of this Annual report and can be viewed at [riotinto.com/JORC](http://riotinto.com/JORC). Argyle Reserves are based on a nominal 0.8 millimetre lower cut-off size and a final re-crushing size of 8 millimetres.

## Schedule – Argyle Diamonds Mineral Resources

Likely mining method (a)	Measured resources		Indicated resources		Inferred resources		Total resources 2017 compared with 2016				Rio Tinto interest
	at end 2017		at end 2017		at end 2017						
	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	%
							2017	2016	2017	2016	
Diamonds											
							millions of tonnes	carats per tonne	millions of tonnes	carats per tonne	
Argyle (Australia) (u)	O/P + U/G						-	15	-	3.2	100.0

Notes

(a) Likely mining method: O/P = open pit; O/C = open cut; U/G = underground; D/O = dredging operation.

(u) Argyle Resources have been written off following a revised economic assessment. A JORC Table 1 in support of these changes will be released to the market contemporaneously with the release of this Annual report and can be viewed at [riotinto.com/JORC](http://riotinto.com/JORC).

## **Summary of information to support the Ore Reserves and Mineral Resources estimates**

Argyle Diamonds is a mining operation comprising an underground mine and diamond processing plant located in the East Kimberley region of Western Australia. The operation has been in existence since 1983. Mining transitioned from open pit operations to underground operations in 2013.

Mineral Resource and Ore Reserve Estimates for Argyle Diamonds are supported by the information set out in the appendix to this release and also located at [www.riotinto.com/JORC](http://www.riotinto.com/JORC) in accordance with the Table 1 checklist in the JORC Code.

The following summary of information for Ore Reserve and Mineral Resource Estimates is provided in accordance with rule 5.8 of the ASX Listing Rules.

### Geology and geological interpretation

Primary mineralisation at Argyle comprises a volcanic lamproite intrusion. Argyle Diamonds has constructed a single geology model representing this mineralisation based on comprehensive data sets drawn from drilling data, surface outcrops, wall mapping during the open pit operation and mapping of exposures in the tunnels of the underground mining operation. In excess of 700 holes have been drilled into the deposit, totalling more than 157 000 metres of drilling.

In addition, surface mineralisation exists in the form of alluvial deposits, surface stockpiles and deposited tailings.

The previously reported Mineral Resources represent a subset of the interpreted mineralisation and is exclusive of reported Ore Reserves.

### Drilling techniques

Core drilling has been the primary drilling technique for both sample collection and geological definition. Large diameter core (200mm), PQ (85mm), HQ (63.5mm) and NQ (47.6mm) drilling techniques have all been used to define mineralisation over a number of campaigns drilled from the original surface, open pit benches and underground locations.

### Sampling, sub-sampling and sample analysis methods

Sample processing methods include bulk processing of the large diameter core and PQ samples through a small scale sample treatment plant, and caustic fusion of micro-diamond samples from the smaller diameter drill cores.

The resource model supporting the reported Ore Reserve largely relies on micro-diamond sampling techniques. Samples are collected in 20kg aliquots, digested and the residues are hand sorted for micro-diamonds larger than 0.106mm. The size distribution of stones from the mineralisation at Argyle and the relationship between commercially recoverable stones and micro-diamonds is known from the earlier bulk sampling campaigns as well as 30 years of operational diamond recovery. This relationship is used to estimate commercially recoverable grades from the micro-diamond samples. Reported resource grades are expressed at a bottom stone size of 0.5mm. Micro-diamond sample processing has been carried out over the years at Rio Tinto laboratories in Canning Vale and Belmont, Western Australia, and Thunder Bay, Ontario, Canada.

#### Mineralisation estimation methodology

Estimation constraints are defined for mineralisation boundaries and internal sub-domains representing different volcanic facies (lamproite units) classified by petrography, grade, stone size and quality distributions. Estimation is undertaken using ordinary kriging techniques within these sub-domains to interpolate sample grades into the block model. The estimated model is validated by visual checks of estimated grades against composite drill hole data. The model has been reconciled with actual production data over the history of the Argyle operation and the results are used to verify the key parameters used in both the development of the model and the estimation of grade within the model.

#### Reasonable prospects for eventual economic extraction

Reporting of Mineral Resources is aligned with the longer term Argyle strategic business plan and only includes mineralisation where reasonable prospects for eventual economic extraction have been demonstrated in Scoping Studies. Previously reported Mineral Resources have included material which could support various mine development opportunities in addition to the current block cave operation. Following a strategic review of development opportunities, work to advance these projects was not undertaken in 2017. Given the short remaining mine life and marginal economic potential of these development options, it is now considered unlikely that any of the options will proceed and there is no longer any reasonable prospect for economic extraction during the life of the existing operation. As such, Mineral Resources are not reported.

The Mineral Resource used for conversion to an Ore Reserve is not reported separately.

#### Ore Reserve estimation methodology

The majority of the reported Ore Reserve derives from an underground block cave mine while the balance is associated with a small stockpile of high grade tailings. The underground mine has been in operation for the last five years and all construction activity was completed in 2015.

Ore Reserves for the block cave operation are derived from an estimated schedule of production which incorporates the mixing of mineralised ore and waste dilution resulting from the caving process. Dilution is expected to increase over time as more waste rock from the old open pit walls mixes with the mineralised ore and is drawn from the cave in production operations. This mixing results in reduced ore grades. Predictive models used to estimate dilution entry and ore recovery are calibrated annually against production performance.

The Ore Reserve is estimated as that part of planned and scheduled production which meets economic shut-off criteria. Following operational challenges experienced in 2017, forecast production rates and expected mine grades have been reduced for the purpose of Reserve estimation. In addition, the current view on price growth over the remaining mine life has resulted in a change in the shut-off criteria resulting in less tolerance for higher levels of dilution (and lower grades) in the reported Ore Reserve.

The reported Ore Reserve estimated at the end of 2017 has decreased by 13 Mt from 29 Mt to 16 Mt. This decrease includes depletion of almost 5 Mt from mine production in 2017, a reduction of approximately 3 Mt due to revised future production expectations, and a reduction of just over 5 Mt due to the change in economic shut-off criteria combined with revised forecast grade estimates.

Shut-off criteria will be reviewed regularly against price, cost performance and demonstrated operational performance. The remaining reserves underpin the operation until 2020, with opportunities to increase reserve and extend the operational life subject to technical and financial performance.

#### Criteria used for Ore Reserve classification

Reserve classification is related both to the confidence in resource estimation and to the confidence in forecast mining behaviour. While nearly 60% of the Ore Reserve is derived from mineral resource classified at a 'Measured' level of confidence, the entire Ore Reserve has been classified at a 'Probable' level of confidence given continued uncertainty in cave behaviour, operational outcomes and economic shut-off. This classification reflects the Competent Person's view of the confidence of the mining and economic related modifying factors at this stage of mine operations and of the inherent risks and uncertainties involved in estimating block cave Ore Reserves.

#### Processing

Mined ore is processed through an existing ore treatment process and diamond recovery plant. The process comprises secondary crushing and high pressure rolls crushing, scrubbing and screening, degritting and desanding, heavy media separation, tailings disposal, x-ray sorting and diamond recovery and chemical cleaning of the recovered diamonds. The ore processing plant at Argyle has been operational since the mid-1980s with only minor modifications to its configuration over the last 10 years. The ore characteristics are relatively stable and well understood. The plant's flowsheet is tailored to suite the Argyle ore. Regular reviews of diamond recovery and grade reconciliation are undertaken and the results are incorporated in the Ore Reserves estimate.

### **Competent Persons Statement**

The information in this report that relates to Ore Reserves and Mineral Resources is based on information compiled by Stephen Brennan, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy, Murray Rayner, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy, and David Ford, a Competent Person who is a Member of The Australasian Institute of Geoscientists. All three persons are full-time employees of Rio Tinto.

Mr. Brennan, Mr. Rayner and Mr. Ford have 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 Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Each of Mr. Brennan, Mr. Rayner and Mr. Ford consent to the inclusion in the report of the matters based on the information that they have compiled in the form and the context in which it appears.

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## Argyle Diamonds - Table 1

The following table provides a summary of important assessment and reporting criteria used at Argyle Diamonds for the reporting of mineral resources and ore reserves in accordance with the Table 1 checklist in *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition)*. Criteria in each section apply to all preceding and succeeding sections.

### SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Diamond core drilling has been used to collect geological, geotechnical and hydro-geological information. Core sizes comprise Large Diameter Core (LDC) (200mm), PQ (85mm), HQ (63.5mm), and NQ (47.6mm).</li> <li>A variation in sample size and processing exists due to differing core diameter size. <ul style="list-style-type: none"> <li>LDC core was sampled in 20m lengths (weight ~1.5tonnes) and processed using a mkiii sample treatment plant (lower cut-off size of 0.5mm).</li> <li>PQ core was sampled in 20m lengths (weight ~0.3tonnes) and processed using a customised crushing circuit and mkiii sample treatment plant (lower cut-off size of 0.5mm).</li> <li>NQ/HQ core is sampled at a size of 20kg, (5m lengths for NQ or 2.5m lengths for HQ) and digested using a caustic fusion process to recover microdiamonds which are counted and weighed (lower cut-off size of 0.106mm).</li> </ul> </li> <li>Alluvial tailings samples range from 100kg to 10t and have been processed through the AK1 audit plant (lower cut-off size of 0.65mm).</li> <li>Coarse tailings samples range from 50t to 135t and have been processed using the mkiii sample treatment plant (lower cut-off size of 0.5mm).</li> <li>Further details can be found in section 5.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drilling is predominantly by diamond core drilling methods using LDC, PQ, HQ &amp; NQ core size over a number of programs drilled on both grids and in fans from the original surface, pit benches and underground tunnels. Refer to the table of drilling programs in Section 2 and the sample drilling sections in the appendix.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Diamond drill core recovery loss of 5 cm or greater is recorded by the driller. Overall recovery from diamond drill core has exceeded 95%.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>Standardised Rio Tinto diamond core logging systems are utilised for all drilling.</li> <li>Diamond drill core is logged to 1m intervals within geologically complex zones and intervals are terminated on geological boundaries. Zones of geological continuity may feature intervals of 20m or more.</li> <li>Older core has been photographed to various degrees of quality. Since 2001 each tray of core is photographed digitally in both wet and dry condition</li> <li>Remaining core (after sampling) from drilling programs since 2005 are stored in secure racks or core pods, while older core is stored on site in varying conditions</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>Sampling techniques are discussed above and in section 5.</li> <li>The processing of LDC and PQ samples was carried out in a customised crushing circuit and mkiii batch treatment plant at the mine site; the LDC sample grades formed the basis for the original resource estimate.</li> <li>The processing of all HQ and NQ samples that are used for the grade estimation in the current resource model (December 2017) was carried out at the Argyle Diamonds Laboratory at Canning Vale in Western Australia, the RTE (Rio Tinto Exploration) Belmont laboratory in Western Australia, or the Kennecott laboratory in Thunder Bay, Canada.</li> <li>Each laboratory used the same standard procedures. Samples were dried and weighed, then crushed and kiln-treated in caustic to dissolve all non-diamond material. The recovered diamonds were sized using standard Endecott sieve sizes down to +0.15mm. The numbers of stones per sieve size were counted and individual stones greater than 0.85mm were weighed.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>Samples are spiked with synthetic diamonds and diamond breakage is closely observed and documented as part of standard QA/QC procedures.</li> </ul>



Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The assay grade (carats/tonne) in the block model is empirically derived by development of stone size distributions for each ore domain. The LDC sample grades formed the basis for the original resource estimate and are known as the “mkiii grade”. The micro-diamond based sample grades are linked to the LDC sample grades by way of the continuous stone size distribution.</li> <li>LDC grades were calculated by dividing the weight of recovered stones greater than 0.6mm by the sample weight. This mkiii grade does not represent the total diamond content of the sample due to incomplete liberation of the smaller stones, some of which remain locked in the plant tailings. The final re-crushing size in the mkiii plant was set at 6mm, so a proportion of stones finer than this size would remain unliberated, with the losses becoming increasingly significant towards the finer sizes.</li> <li>PQ-method sample grades were calculated from the number of stones greater than 0.6mm (stones per tonne (SPT)), multiplied by the mean stone size of the LDC distribution. The distribution obtained from the PQ program differed significantly from the LDC distribution, most notably in the finer size classes, due to higher recovery of small stones from the PQ samples using a modified crushing and screening module in the mkiii plant. A factor was therefore applied to the PQ results to correct for this difference so as to arrive at grades that were comparable with the earlier LDC results.</li> <li>The microdiamond method recovers 100% of the contained diamonds for all size classes greater than 0.150mm. Stone-size distributions for individual samples are truncated because few commercial-size stones are obtained, due to the relatively small sample size. A ratio was therefore developed to convert the SPT in the microdiamond range +0.21 to +0.42mm size classes to an equivalent “mkiii” SPT, allowing the estimation of mkiii equivalent grades.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>All drill hole collar locations are surveyed to Geocentric Datum of Australia 1994 (GDA94) grid by Rio Tinto surveyors using Differential Global Positioning System (DGPS) survey equipment.</li> <li>Drill hole collars are compared to detailed topographic maps and underground development models to check that the collar survey data are accurate.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Drill hole spacing is predominately 25m (East-West) by 50m (North-South) throughout the deposit after numerous drill programs over the years.</li> <li>Due to access constraints, holes drilled from underground locations are drilled across established sections.</li> <li>Refer to the figures included in the appendix for the distribution of drilling.</li> <li>Alluvial tailings sample spacing is predominately 25-50m (East-West) by 25-50m (North-South).</li> <li>Coarse tailings sample spacing is predominately 50-100m (East-West) by 50-100m (North-South).</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Drilling is predominantly vertical to sub vertical intersecting a moderately dipping (45-50 degrees) ore body.</li> <li>The drill grid is east-west to north-south sub-perpendicular to the deposit strike.</li> <li>In cases where the relationship between the drilling orientation and the orientation of the ore body contact is considered to have introduced a sampling bias, these samples have been removed from the estimate.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>All samples are inspected by site security prior to being sealed in a drum for transportation.</li> <li>Overseas documentation (Commercial Invoice and Customs Declaration) accompanies samples en-route to Thunder Bay, Canada.</li> <li>Samples are tracked via an external contracted shipping company.</li> <li>Receipt of samples at the laboratory is confirmed and signoff takes place by both parties prior to sample weighing and analysis.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>An independent Resources and Reserves audit took place in 2014. Moderate level findings related to the storage condition of older drill core and the documentation of current logging procedures. Pre 2006 core storage is being progressively upgraded and logging procedures will be reviewed prior to any new drilling program.</li> <li>Revisions of the block model over the years have been subjected to critical internal peer review.</li> </ul>

## SECTION 2 REPORTING OF EXPLORATION RESULTS

Criteria	Commentary																											
Mineral tenement and land tenure status	<ul style="list-style-type: none"><li>The Argyle deposits together with the mining and processing operations are located in the East Kimberley region of Western Australia.</li><li>They are situated on mining lease M259SA granted in 1983 for a period of 21 years.</li><li>The lease was renewed in October 2003 for a further 21 years and is due to expire on 26 January 2025. The State Agreement Act which governs the operation allows for successive renewals of the mining lease.</li><li>The present lease duration is three years beyond the expected mine life of the currently approved operation. The reported ore reserves and mineral resources can be developed and mined within the present lease period without the requirement for a further lease renewal.</li><li>Argyle Diamonds is 100% owned by Rio Tinto Ltd.</li></ul>																											
Exploration done by other parties	<ul style="list-style-type: none"><li>No exploration undertaken by other parties is incorporated in the mineral resource estimates.</li><li>CRAE (now RT Exploration (RTX)) undertook initial creek sampling in 1979 resulting in alluvial discovery with subsequent identification of the primary AK1 pipe.</li><li>Multiple drillhole programs have been undertaken by Argyle Diamonds as outlined in the table below.</li><li>Some regional exploration was carried out by RTX over the period 2003-2008.</li></ul>																											
Geology	<ul style="list-style-type: none"><li>The primary Argyle deposit (referred to as the ‘AK1’) is a volcanic magmatic lamproite and lamproitic tuff intruded into a Proterozoic sequence of interbedded quartzite, siltstone and mudstone units that overlie dolerite and basalt units that in turn, overlie a granite basement.</li><li>Alluvial deposits, representing eroded material from the primary volcanic pipe, exist within the mining lease and have been exploited in the past. Currently no alluvial material is reported.</li></ul>																											
Drill hole Information	<ul style="list-style-type: none"><li>A summary of drilling data is presented below:</li></ul> <table><tr><th>Program and Year</th><th>Holes</th><th>Description</th></tr><tr><td>Ore Reserve Program 1980-82</td><td>312 holes: 9 300m LDC 3 500m open hole 29 000m NQ</td><td>LDC (200mm) drilling for sampling and NQ core for delineation. 50x50m spacing (Sth) to 100x100m spacing (Nth). Collared on original surface topography (approx. 10 350mRL). Depths to 10 100mRL</td></tr><tr><td>Deep Ore Resource Program 1989-90</td><td>67 holes: 18 900m</td><td>NQ core drilling for sampling and delineation. Sampling on 100x50m grid collared on open pit benches. Depths to 10 000mRL.</td></tr><tr><td>UG Mining Study 1994-95</td><td>49 holes: 14 400m PQ 7 000m HQ/NQ</td><td>PQ core drilling for sampling and HQ/NQ/PQ core drilling for delineation. One to two holes on 50m spaced sections collared on open pit benches. Depths to 9 700mRL.</td></tr><tr><td>Deep Exploration Program 1998-2000</td><td>31 holes: 19 200m</td><td>NQ core drilling for sampling and delineation. Collared on open pit benches. Depths to 9 300mRL.</td></tr><tr><td>UG Mining PFS Program 2002-2003</td><td>53 holes 12 100m</td><td>HQ core for sampling and geotechnical information. Collared on open pit benches and oriented to cross the pipe from HW to FW. Depths to 9 750mRL</td></tr><tr><td>Nthn Bowl and Sthn Tail Resource Program 2002, 2004-2005</td><td>74 holes: 18 200m</td><td>HQ and NQ core for sampling and delineation. Used to infill northern sampling to the same coverage as that in the south (25m E-W to 50m N-S). Collared on open pit benches. Depths to 9 800mRL</td></tr><tr><td>UG Geotechnical Program 2006-08</td><td>57 holes: 9 900m</td><td>HQ core drilling for cover drilling, geotechnical information and sampling. Collared in underground tunnels on the Exploration Level at a variety of locations and orientations. Fan drilling designed to intercept lamproitic contacts. Depths to 9 600mRL.</td></tr><tr><td>UG 2 Resource Program 2012-13</td><td>91 holes: 15 700m</td><td>HQ core drilling for sampling and delineation. Collared in underground tunnels at the base and beneath the block cave mine at a variety of locations and orientations. Fan drilling designed to intercept lamproitic contacts. Depths to 9 200mRL.</td></tr></table> <ul style="list-style-type: none"><li>Miscellaneous geotechnical, piezometer, hydrogeology and cover drilling programs are not included in this table.</li><li>Refer to the figures included in the appendix for the location of drilling.</li></ul>	Program and Year	Holes	Description	Ore Reserve Program 1980-82	312 holes: 9 300m LDC 3 500m open hole 29 000m NQ	LDC (200mm) drilling for sampling and NQ core for delineation. 50x50m spacing (Sth) to 100x100m spacing (Nth). Collared on original surface topography (approx. 10 350mRL). Depths to 10 100mRL	Deep Ore Resource Program 1989-90	67 holes: 18 900m	NQ core drilling for sampling and delineation. Sampling on 100x50m grid collared on open pit benches. Depths to 10 000mRL.	UG Mining Study 1994-95	49 holes: 14 400m PQ 7 000m HQ/NQ	PQ core drilling for sampling and HQ/NQ/PQ core drilling for delineation. One to two holes on 50m spaced sections collared on open pit benches. Depths to 9 700mRL.	Deep Exploration Program 1998-2000	31 holes: 19 200m	NQ core drilling for sampling and delineation. Collared on open pit benches. Depths to 9 300mRL.	UG Mining PFS Program 2002-2003	53 holes 12 100m	HQ core for sampling and geotechnical information. Collared on open pit benches and oriented to cross the pipe from HW to FW. Depths to 9 750mRL	Nthn Bowl and Sthn Tail Resource Program 2002, 2004-2005	74 holes: 18 200m	HQ and NQ core for sampling and delineation. Used to infill northern sampling to the same coverage as that in the south (25m E-W to 50m N-S). Collared on open pit benches. Depths to 9 800mRL	UG Geotechnical Program 2006-08	57 holes: 9 900m	HQ core drilling for cover drilling, geotechnical information and sampling. Collared in underground tunnels on the Exploration Level at a variety of locations and orientations. Fan drilling designed to intercept lamproitic contacts. Depths to 9 600mRL.	UG 2 Resource Program 2012-13	91 holes: 15 700m	HQ core drilling for sampling and delineation. Collared in underground tunnels at the base and beneath the block cave mine at a variety of locations and orientations. Fan drilling designed to intercept lamproitic contacts. Depths to 9 200mRL.
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Data aggregation methods	<ul style="list-style-type: none"> <li>Sample compositing for the HQ and NQ core has been applied, 20m is the nominal composite length, matching the length of the earlier PQ and LDC samples. Actual composite length may vary within an intersection to equalise the length of each composite in the intersection, thereby avoiding the creation of short “tails” at the intersection ends.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>Mineralised intercept lengths are not used as a determinant of mineralisation width.</li> <li>Current modelling of the mineralisation converted to ore reserves and mineral resource is supported by drilling programs which deliberately target the geological contacts to determine the true size of the lamproite pipe. The more recent UG drilling programs consist of fan drilling targeted across the orebody or from within the orebody targeting the lateral extents.</li> <li>The geometry of the lamproite pipe is understood from these drilling intersections with the geological contact as well as from mapping of open pit exposures and underground mine development. This modelled geometry is used to estimate tonnage.</li> <li>Refer to the diagrams in the appendix for sectional views and drillhole details.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>Refer to the diagrams appended to this Table 1 document</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>Not applicable. Argyle Diamonds has not specifically released exploration results for this deposit.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>Substantive geological exposures are available from 30 years of open pit mining and substantial underground development. Mapping of these exposures are used extensively to confirm orebody limits, shape and size.</li> </ul>
Further work	<ul style="list-style-type: none"> <li>Drilled mineralisation extends substantially beyond currently reported ore reserves and mineral resources (refer to the sections appended to the report). Mineralisation is open at depth, though the deposit is known to narrow with depth. No further drilling of the primary deposit is currently planned.</li> <li>Small scale sampling of surface alluvial deposits is expected to be carried out over the next few years to identify surface resource potential</li> </ul>

### SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

Criteria	Commentary
Database integrity	<ul style="list-style-type: none"> <li>All drilling data are securely stored in an Access Database using DataShed as a front end.</li> <li>Management of the data is restricted to two site based custodians (geoscience professionals).</li> <li>The database is housed on a site based SQL server and is backed up daily.</li> <li>Rio Tinto Diamonds regularly perform internal checks of the Vulcan datasets extracted from the Access database. Queried anomalies are rectified by the database custodians prior to modelling and Mineral Resource estimations.</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>A competent person regularly visits the Argyle Mine Site.</li> </ul>
Geological interpretation	<ul style="list-style-type: none"> <li>Geological modelling is undertaken by the principal geologist and all work is reviewed internally.</li> <li>The method involves interpretation of down-hole stratigraphy (using lithological core logging data, core photographs and assay data) and interpretation of underground development face and back-mapping.</li> <li>Five grade domains, based on stone size and quality distribution and relating to discrete phases of emplacement during the genesis of the deposit are interpreted from the geometry and geology of the pipe.</li> <li>Within and beneath the block cave a further sub-domain have been interpreted from different geological textures/units representing an internal high grade zone (maintaining same stone size distribution of the parent domain).</li> <li>Vulcan 3D software is employed to capture the interpretation of the pipe geometry in 3D and on East-West sections. Wall rock units and structural features are considered where these have influenced the pipe geometry. The digitised points are triangulated to form a three-dimensional “wireframe” model to represent the pipe geometry.</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>The Argyle mineralisation is a lamproite pipe of elongate shape in plan view and dips approximately 50 to 70 degrees from horizontal to the west. It has a 2km NNE strike and ranges from 150m-500m in width. The known pipe extends approximately 1km in depth from the topographic surface. The pipe tapers at depth and diverges into four distinct ‘roots’.</li> </ul>

Estimation and modelling techniques	<ul style="list-style-type: none"> <li>The block model is aligned to the mine grid that is 3 degrees off magnetic north.</li> <li>Block size is 25m (east-west) by 50m (north-south) by 15m (elevation). Sub-cells are used to improve the resolution of the volume near the domain boundaries and are maintained at a constant fraction of the parent cell size, with the smallest permitted sub-cell being 12.5m by 12.5m (in plan) by 15m (elevation).</li> <li>Beneath the block cave the sub-cell size is reduced to 6.25m (east-west) by 6.25m (north-south) by 5m (elevation) to provide additional resolution along internal domain boundaries.</li> <li>Blocks are estimated for the five mineralised domains (and any internal domains) in Vulcan using an Ordinary Kriging interpolator and a three pass search.</li> <li>The estimated model is validated using visual checks of the estimated blocks with composite drill hole data superimposed. Early development of the model incorporated statistical analysis on all five domains through an external consultant. This analysis enabled correct choice of search neighbourhood constraints to be applied.</li> <li>The model has been reconciled with actual production data and the results have verified the key parameters utilised both in the development of the model and in the grade estimation, in particular the use of hard domain boundaries and uncut composites.</li> </ul>
Moisture	<ul style="list-style-type: none"> <li>The resource model is quoted as dry tonnage.</li> <li>Production figures incorporate a moisture content of 5% for underground material and 3-4% for surface material.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>Cut off parameters are not used for the composite data in the model.</li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>Reporting of Mineral Resources is aligned with the longer term Argyle strategic business plan and only includes mineralisation where reasonable prospects for eventual economic extraction have been demonstrated in Scoping Studies.</li> <li>Previously reported Mineral Resources have included material which could support various mine development opportunities in addition to the current block cave operation. Given a depressed market outlook over the short to mid term, no work to advance these projects was undertaken in 2017.</li> <li>Given the short remaining mine life and marginal economic potential of these development options, it is now considered unlikely that any will proceed and there is no longer any reasonable prospect for economic extraction during the life of the existing operation. As such, no Mineral Resources, exclusive of those converted to Ore Reserve, are reported.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>It is assumed that any Mineralised Resources, if converted to Ore Reserves in the future, will be processed in the existing Diamond Process Plant at the Argyle mine site. Metallurgical factors and assumptions used in the scoping studies are based on historical performance.</li> <li>As Mineral Resources are no longer reported, these factors are no longer relevant.</li> </ul>
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>Any potential Mineral Resources will be developed on an existing brownfields site and little additional environmental impact is expected.</li> <li>The Environmental Protection Statement submitted in 2005 for the current underground development included potential further mine expansions including the mining of material beneath the current operation, together with the development of an additional tailings storage facility.</li> <li>As Mineral Resources are no longer reported, these factors are no longer relevant.</li> </ul>
Bulk density	<ul style="list-style-type: none"> <li>Bulk density is estimated into the model using an inverse distance interpolator over a three-pass search. A default value of 2.6 is assigned for the quartzite and mudstone waste rocks.</li> <li>Density measurements are now collected as standard practice from the laboratory when samples are submitted for assay analysis.</li> </ul>
Classification	<ul style="list-style-type: none"> <li>Resource classification is directly related to geological interpretation, drill hole and sampling density, and grade estimation of particular geological domains.</li> <li>Classification is also influenced by potential mining methods (bulk mining will see greater grade confidence than small scale selective mining as the extraction volumes would be better aligned with the size of the estimation blocks).</li> <li>In general, the resource classification decreases in confidence with depth and boundary blocks along the pipe contact are classified at no more than an Indicated level of confidence reflecting potential dilution along the margins.</li> <li>The Resource classification appropriately reflects the Competent Person's view of how well the deposit has been evaluated.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>Resource estimation has historically been subject to numerous internal peer reviews, though there has been limited recent review.</li> <li>An independent Resources and Reserves audit took place in 2014. No high or moderate level findings were made on the estimation processes.</li> </ul>

Discussion of relative accuracy/confidence	<ul style="list-style-type: none"> <li>Geological certainty is considered to be good for the majority of the resource. Due to the nature of the mineralisation, continuity between drill hole intersections can be assumed with a good degree of confidence. Along the ore body margins, there are likely to be local variations between the available drill hole intersections as minor fluctuations will occur along the contacts relative to the model shape.</li> <li>From historical production data the recovered grade has shown good annual reconciliation with the modelled target grade (+/-5%) suggesting that the Argyle Resource model is robust.</li> <li>There is greater uncertainty with the pipe size and shape at depth as the number of drill holes intersecting the contacts decreases significantly.</li> <li>Potential mining feasibility, dilution and recovery estimates and potential mining economics assessed in the various scoping studies are only understood to an order of magnitude level and are of insufficient certainty at this stage to provide assurance of development.</li> </ul>
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## SECTION 4 ESTIMATION AND REPORTING OF ORE RESERVES

Criteria	Commentary
Mineral Resource estimate for conversion to Ore Reserves	<ul style="list-style-type: none"> <li>The December 2017 resource model is used for the conversion to Ore Reserves. The portion of the model modified to produce the Ore Reserves is a 470m long, 250m high volume of the AK1 pipe below the completed southern section of the open pit (refer to Figure 1 in the appendix). Some 75% of the Mineralised Resource in this volume is estimated to a Measured level of confidence.</li> <li>No Inferred material exists within the Mineral Resource targeted for conversion to Ore Reserves.</li> <li>The resource model used for the 2017 Reserve estimate represents an updated version of the model used for Reserve estimation in 2016. The 2016 revision saw a reinterpretation of the pipe contact boundaries which affect lamproite volumes. The major change in the 2017 revision includes an interpretation of an internal high grade estimation domain. While grades within this small domain have been elevated, the impact of this latest change is to reduce the average grade estimate outside the domain.</li> <li>The Mineral Resources volume used for conversion to an Ore Reserve is not reported separately.</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>The Competent Person makes regular site visits and is conversant with the mine operations, mine design and operational and reconciliation performance. This knowledge is used in preparation of the Ore Reserve estimate.</li> </ul>
Study status	<ul style="list-style-type: none"> <li>Ore Reserves for the Argyle Underground were first reported on the basis of a completed Feasibility Study at the end of 2005. Subsequently, mine design has progressed to definitive stage and the mine brought into operation in 2013. Construction of the mine was completed in 2015. The block cave is fully operational.</li> <li>The stockpile component of the ore reserves (Recovery Rejects) is based on regular sampling of tailings, surveys and engineering works undertaken to 2017. Based on these studies, production of the stockpile is incorporated into the 2018 business plan.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>Diamonds are recovered to a nominal lower cut-off stone size of 0.8mm and Ore Reserves grades are reported on that basis, rather than as run-of-mine resource grades.</li> <li>The Ore Reserve is not based on a cut-off grade as mine design and planning adopts a 'whole-of-pipe' extraction strategy. 'Shut-off' criteria are used to determine the end-of-mine-life and hence the size of the Ore Reserve. Given the largely fixed cost nature of the operation, this shut-off criteria is applied as a minimum carat production quantity, rather than as a shut-off grade.</li> <li>For the 2017 Ore Reserve estimate, this shut criteria has been lifted from approximately 1.7 Mct/quarter to approximately 2.3 Mct/quarter, reflecting lower prices forecast for the final years of potential production. This has reduced the reported Ore Reserve by the equivalent of approximately one year's production.</li> </ul>

Mining factors or assumptions	<ul style="list-style-type: none"> <li>• The majority of reported the Ore Reserve come from an underground block cave mine in operation for the last five years.</li> <li>• Underground mining was adopted for further extraction of the Argyle diamond pipe beneath the economic open pit limits. The block caving mining method was selected in the 2003 Pre-Feasibility study as it best meets the constraints and requirements of the geotechnical environment, ore grade distribution, ore value and existing mine infrastructure and capacity.</li> <li>• Mining and geotechnical assumptions developed during the 2005 Feasibility Study and updated and revised during mine construction and operations are used to inform an Ore Reserves and production scheduling model. This model utilises industry standard software to simulate the dilution mixing behaviour of the block cave mine and reports diluted, recoverable production physicals. The Ore Reserve is estimated as the sum of this modelled mine production stream tested to an economic mine life shut-off.</li> <li>• The block cave mine consists of 241 drawpoints distributed over 15 extraction drives. The cave footprint is roughly rectangular with a length of approximately 460-470m and a span of some 130-170m. The footprint extends across the ore-waste interface in order to extract the dipping diamond pipe above the extraction level. At present, some 138 drawpoints are in production; the remainder have been prematurely closed due to ground convergence and are not operational. There are plans to attempt to recover a number of these closed drawpoints over the remaining mine life. Ore behind those closed drawpoints not identified for rehabilitation is excluded from the reported Ore Reserves.</li> <li>• Drawpoints are spaced at 16m along each extraction drive, with the drives spaced at 30m. This spacing is designed to achieve interaction between draw-columns.</li> <li>• Caving is initiated by undercutting the mining block using drill and blast techniques on an undercut level some 15m above the extraction level. All undercutting was completed by the end of 2014.</li> <li>• Geotechnical and caving assumptions used in the central estimate include forecast loss of drawpoints through stability or convergence risk, an assumption of major pit wall collapse during cave propagation, the exclusion of 'dead zones' between the assumed flow cones in the lower section of the cave and the preferential movement of finer waste material through the caved ore rockmass. These assumptions were reviewed in 2017 based on mining observations and reconciliation surveys made during the year.</li> <li>• Mining dilution factors are not explicitly used to modify the Mineralised Resource but are an outcome of dilution modelling processes. Some 26% of the current block cave Ore Reserve represents dilution originating from outside or above the cave. Some 6% of this dilution is expected to be diamondiferous lamproite (2% of the total reserve). Non-diamond bearing waste rock accounts for 28% of the Ore Reserve and includes waste internal to the block cave footprint as well as external dilution.</li> <li>• Production forecasts are an integral component of the Ore Reserve estimate. While the operational plan calls for a production target of 5.8Mt/year (dry), the Ore Reserve estimate is based on a more conservative assumption of 5.3Mt/year. Mine production in 2017 was 4.7Mt.</li> <li>• The underground block cave mine is supported by major infrastructure including: <ul style="list-style-type: none"> <li>◦ ore handling facilities comprising two underground gyratory crushers and inclined conveyors to surface;</li> <li>◦ dewatering systems capable of handling day to day water inflow as well as a separate system designed to handle heavy water inflows expected during the wet season typical of the East Kimberley location;</li> <li>◦ ventilation exhaust fans and a refrigeration plant facilitating mine air cooling; and</li> <li>◦ power and communications systems distributed throughout the mine.</li> </ul> </li> <li>• Reported ore reserves include a small 40kt stockpile of recovery tailings. During 2017, capital was approved for the construction of a recovery plant utilising Grease Belt technology to treat this stockpile. Production from the existing stockpile will be carried out over a two year period.</li> <li>• Tonnage and grade for the stockpile is estimated from tailings weightometer measurements and tailings grade samples split in to size categories. Only material accumulated on the stockpile up to mid 2017 is included in the Ore Reserve estimate.</li> <li>• Ore Reserves are sufficient to underpin operations till 2020, with opportunities to extend subject to technical and financial performance.</li> </ul>
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>• The existing diamond processing plant is being used to process the majority of Ore Reserve production. This plant comprises secondary crushing and high pressure rolls crushing, scrubbing and screening, degritting and desanding, heavy media separation, tailings disposal, x-ray sorting and diamond recovery and chemical cleaning of recovered diamonds.</li> <li>• The ore processing plant at Argyle has been in its current configuration for over 10 years; the ore characteristics are relatively stable and well understood. The plant's flowsheet is tailored to suite the Argyle ore. Grade reconciliation over the life of the project has been within +/-5% of expected.</li> <li>• In 2013 and 2015, the degrit screen apertures were changed in response to lower throughput requirements from the block cave mine. As a result, diamonds are now recovered to a lower stone cut-off size of 0.8mm (nominal) and Ore Reserves are reported to this size.</li> <li>• During 2016 and 2017 a major review of diamond recovery was undertaken examining more recent</li> </ul>

	<p>production results (Sep 2016-Apr 2017) leading to a change in recovery factor assumptions from 65% to 67% of the in-situ distribution (or 99% of the mkiii resource grade distribution). A review of grade reconciliation over the same period resulted in an adoption of a further reconciliation adjustment of 97% for the remaining block cave Ore Reserve which relates to uncertainty in block model grades and cave grade mixing assumptions.</p> <ul style="list-style-type: none"> <li>• Further changes to the re-crush sizing were undertaken in 2017 which should lead to higher diamond recovery; however as much of the year saw co-processing of tailings material, the impact of this change has not been properly evaluated and is not included in the current Ore Reserve estimate.</li> <li>• A small Grease Belt plant is being procured and constructed in order to recover diamonds contained in a small high grade stockpile of Recovery Rejects.</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>• The Argyle Mine is an existing operation and is run under WA regulatory approval and oversight. Approval for underground operations was granted under a set of ministerial conditions derived from an Environmental Protection Statement submitted in 2005.</li> <li>• Underground mining does not significantly add to the current waste dumps and process tailings will be accommodated in the existing tailings storage facility.</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>• The mine has been operating for some 32 years and the mine site includes the necessary infrastructure required to support the operation. This includes an operational diamond processing plant, power generation facilities, workshops, warehousing facilities, hydrocarbon storage, site accommodation facilities, office facilities, water extraction facilities and storage and a private operational airport used for fly-in, fly-out commuting, and currently servicing F100 jets.</li> <li>• The site is connected to the power grid from the Ord Hydro power scheme and has access to the Great Northern Highway providing road transportation links south to Perth and north to Kununurra and Darwin.</li> </ul>
Costs	<ul style="list-style-type: none"> <li>• Operating costs are estimated from production driven physicals and based on existing cost performance. Costs are reviewed as part of the annual planning process. Operating costs include the cost to mine, crush, convey and process ore and waste dilution material, as well as the cost to provide necessary mine services. There are no deleterious elements that result in penalties.</li> <li>• Transportation charges are included in the cost model but are not significant for a small volume commodity such as diamonds.</li> <li>• Downstream sorting and marketing are conducted in-house by Rio Tinto Diamonds and costs are estimated and reviewed in the annual planning process and are used in the cost model.</li> <li>• Royalty charges are agreed as part of the Argyle State Agreement and are included in the model.</li> <li>• Estimates for mine closure are based on the latest closure plans and provisions and are included in the evaluation, though closure costs are not included in the free cashflow assessment used to determine the end of mine life shut-off criteria</li> </ul>
Revenue factors	<ul style="list-style-type: none"> <li>• Diamond prices are estimated by Rio Tinto Diamonds and derived from short and long term price trends for particular diamond size and quality domains recognising current sales contracts, industry analysis, global commodity consumption and economic growth trends. This process generates a price growth curve, rather than a single price point. Price forecasts in the final years of production determine shut-off criteria.</li> <li>• The 2017 Ore Reserves are estimated using a mixed consensus price growth outlook which is weighted in favour of near term actual Argyle prices and not overly influenced by more optimistic growth forecasts for the diamond industry in general during the short remaining mine life. These lower price forecasts for 2020 and 2021 contribute to the earlier economic shut-point resulting in a reduction in reported Ore Reserves.</li> <li>• For annual Ore Reserve reporting, a carat weighted average single price point is derived from these curves and used for economic testing.</li> <li>• Exchange rates used to support the Ore Reserve estimate are taken from Rio Tinto annual project evaluation guidelines</li> </ul>



Market assessment	<ul style="list-style-type: none"> <li>An in-house team of Industry Analysts based in Antwerp monitors global rough diamond supply and polished diamond demand. The output from this team is used periodically by Rio Tinto Economics to review the longer-term prospects for rough diamond Real Price Growth (RPG). These reviews are known internally as commodity price reviews and are used with Project Evaluation Guidelines for generating future prices for longer-term revenue forecasts.</li> <li>Assessments of trends in the Antwerp, Indian and American markets are used to assist with short-term price setting. The pricebook for Argyle's diamonds is reviewed on a monthly basis and revenue forecasts are reviewed quarterly, with the added benefit of monthly diamond size/quality distribution (SQD) reconciliations (described in Section 5 below).</li> <li>The customer base is reviewed every two years.</li> <li>Competitor volume forecasts are captured in an in-house rough diamond supply database, and are based on public domain information from Company Annual Reports and in-house interpretive skills and knowledge.</li> </ul>
Economic	<ul style="list-style-type: none"> <li>Economic inputs such as foreign exchange rates, carbon pricing, inflation rates and investment discount rates are generated internally at Rio Tinto and are used to test the economics of the Ore Reserve estimate. The detail of this process is commercially sensitive and is not disclosed.</li> <li>Under current economic, cost, production and grade forecasts, production in the final year of planned operations (2021) cannot be shown to demonstrate positive cashflow and so is not included in the Ore Reserve estimate.</li> <li>Assessment of the reported Argyle Ore Reserve estimate at both Rio Tinto forecast prices and historical three-year average prices demonstrates a positive net present value sufficient to meet Rio Tinto Limited investment criteria.</li> </ul>
Social	<ul style="list-style-type: none"> <li>The Argyle Diamond Mine and associated deposits are located with the existing Mining Lease M259SA (current lease valid to 26 January 2025). The current lease term covers the projected mine life of the Ore Reserve estimate.</li> <li>The Argyle Mine and underground operation is conducted within the terms of the Argyle Participation Agreement negotiated with local traditional owners and registered as an Indigenous Land Use Agreement in 2005. This agreement recognises local traditional owners as the mining lease custodians while the traditional owners recognise Argyle's right to mine. This Agreement forms the basis for Argyle's relationship with Indigenous people of the region and ongoing engagement is provided for in the form of a Relationships Committee.</li> </ul>
Classification	<ul style="list-style-type: none"> <li>The entire Ore Reserve is classified at a Probable level of confidence despite the large proportion of Measured Mineralised Resource targeted for conversion. This classification is made given uncertainty in the mine recovery and dilution modifying factors used to produce an Ore Reserve estimate.</li> <li>This classification reflects the Competent Person's view of the confidence of the mining related modifying factors at this stage of mine operations and of the inherent risks and uncertainties involved in estimating block cave Ore Reserves.</li> <li>Of the reported Probable Ore Reserve, 57% is derived from Measured Mineral Resource, 15% from Indicated Mineral Resource and 28% represents barren waste dilution.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>An independent Resources and Reserves audit took place in 2014. Moderate level findings related to the residual risk inherent in the Ore Reserve estimate with regards to drawzone interaction and the ultimate limits of the cave zone, together with the status of the geotechnical model. These issues will remain as residual risks for the life of the operation.</li> <li>No independent audit or review was undertaken in 2017, though the Ore Reserve estimation methodology and the underlying production plan were reviewed internally by Rio Tinto Technical Assurance. Production forecasts and other operating assumptions underpinning the Ore Reserve estimate were modified based on this internal review.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>The geometry of the Argyle diamond pipe and the mining and geotechnical conditions are not that which are typically well-suited to block caving and contribute to risk inherent in the Ore Reserve estimation process.</li> <li>Key areas of risk and uncertainty relate to: <ul style="list-style-type: none"> <li>Geotechnical stability of drawpoints in areas of poor ground conditions;</li> <li>Recovery of material lying between draw-columns;</li> <li>Complete cave propagation across the full footprint;</li> <li>Introduction of waste material into the cave through pit wall collapse and migration of fine waste material through the caving column;</li> <li>Preferential caving/draw along faults beyond the designed footprint; and</li> <li>Forecast production rates and draw strategy.</li> </ul> </li> <li>Sensitivity analysis is used to generate a likely range of the potential Ore Reserve. This range reflects the key mining and geotechnical risk exposures. A central position is taken within this range for Ore Reserves reporting purposes.</li> </ul>



## SECTION 5 ESTIMATION AND REPORTING OF DIAMONDS AND OTHER GEMSTONES

Criteria	Commentary
Indicator minerals	<ul style="list-style-type: none"> <li>Indicator minerals are rare in the Argyle deposit. Chromite is the only mineral of significance. Dense Media Separation concentrate yields are extremely low, less than 0.1% of plant head feed. There are no commercial uses for chromite and it is not used as a surrogate for monitoring efficiency of the diamond recovery process.</li> </ul>
Source of diamonds	<ul style="list-style-type: none"> <li>The Argyle lamproite is a primary diamond source rock. The deposit is 1.2 Bn years old.</li> </ul>
Sample collection	<ul style="list-style-type: none"> <li>After discovery in 1979, surface bulk samples were processed for diamonds. Six small shafts were sunk to 60m to obtain larger parcels of diamonds from below the weathering horizon for sorting and valuation. LDC drilling was conducted on a 50m grid to produce diamonds from up to 250m below surface. These sampling exercises generated diamond size/frequency distributions (SFDs) and diamond size/quality distributions (SQDs) that were used for grade and price estimation. Over 100 000 carats of diamonds were recovered in the initial sampling programs for definition of the SQD and run of mine price. The diamond SFD and SQD assumptions are now based on thirty two years of mine operation and, while there continues to be short term regional variation, are now reasonably well understood. Since the initial evaluation program, almost no sampling for commercial size diamonds has been undertaken.</li> <li>The diamonds in each ore domain were found to have slightly different SFDs, and the diamonds in the non-sandy domain have a slightly better SQD than the diamonds in the other three domains.</li> <li>In the early 2000s when the ore domains were being resolved, single domain special (or trial) batches of ore were processed and the diamonds were kept separate from normal production for sorting and definition of the SQD. The ore domain SQDs have been tested over the years and found to be robust. The ore domain diamond parcels contains hundreds of thousands of carats and provide accurate SFD and SQD data. The actual and expected SQDs are reconciled every five weeks, variance is typically in the range +/-5%</li> <li>Bulk sampling was conducted along the underground exploration decline in 2005/6 and the diamond SQD matched the SQD from Open Pit production in the same domain.</li> </ul>
Sample treatment	<ul style="list-style-type: none"> <li>A small (10 tph) mkiii bulk sample processing plant (scrubbing, crushing &amp; DMS) is located on Site. This plant was used for sampling and auditing, but in recent years it has been placed on care and maintenance because it is expensive to operate.</li> <li>Top crushing size and recrush size in the sample plant replicate the main plant sizes (i.e. 15 mm and 6 mm respectively). The mkiii plant lower cut-off size is 0.5mm, the lower cut-off size in the main plant was reduced from 1.5mm to 1.0mm in 2013 and further to 0.8mm in 2015. Argyle staff undertake all the processing for commercial size diamonds including final diamond recovery using x-sorting machines in the main Recovery Plant.</li> <li>Drill core has been treated for micro-diamonds is processed through RTD's Thunder Bay Laboratory. This Laboratory is ISO 9000 accredited. The core is crushed to -12mm and digested in hot caustic soda. The product is neutralised and washed over a 106 micron mesh. The +106 micron material is re-fused and the residue is sorted by hand for micro-diamonds &gt;150 microns.</li> </ul>
Carat	<ul style="list-style-type: none"> <li>One fifth (0.2) of a gram (often defined as a metric carat or MC).</li> </ul>
Sample grade	<ul style="list-style-type: none"> <li>Resource grades are reported based on a lower cut-off size of 0.50mm (square mesh woven wire sieve).</li> <li>As the lower cut-off size for production is nominally 0.8 mm, Reserve grades are reported to this bottom cut size.</li> <li>Sample stone densities or stone frequencies (stones per dry tonne of material processed) are converted into sample grades (carats per dry tonne) using the mean stone sizes (MSS) in carats per stone that reflect the equivalent mkiii SFD for each ore domain. <math>\text{Spt} \times \text{MSS} = \text{carats per tonne}</math>. The ore domain SFDs are based on stones greater than 0.60mm.</li> </ul>
Reporting of Exploration Results	<ul style="list-style-type: none"> <li>Commercial size diamonds are diamonds that remain on top of a 1 DTC round-hole punched metal sieve plate. The hole diameter of a 1 DTC sieve is 1.092mm. This sieve is equivalent, approximately, to a 0.85mm square mesh sieve.</li> <li>The diamond results from treating samples for commercial size stones are reported as carats and stones per square mesh sieve class, for the <math>\sqrt{2}</math> series of square mesh sieves, the DTC series of round-hole sieves, and the Carats/Grainer/DTC series of boundary weights and sieves.</li> <li>The diamond results from treating drill core for micro-diamonds are reported as stones per sieve class, for the <math>\sqrt{2}</math> series of square mesh sieves.</li> </ul>
Grade estimation for reporting	<ul style="list-style-type: none"> <li>Resource grades are reported based on a nominal lower stone size cut-off of 0.5mm achieved by the mkiii sample plant, while Ore Reserve grades are reported based on a nominal lower stone size cut-off of 0.8mm achieved in the Process Plant. The process plant also incorporates improved</li> </ul>

Mineral Resources and Ore Reserves	<p>liberation and recovery techniques. This miss-match is taken into account through the Reserve to Resource grade reconciliation factor. This factor is based on production reconciliation history. Diamond size/frequency distributions are not modelled using geostatistical techniques because there are sufficient clean sizing data from Special Production batches to provide robust SFDs for the diamonds in each ore domain. The grade reconciliation factor used for Reserve reporting is based on the most recent 8 months of production data where ore has been sourced from a single SFD domain.</p>
Value estimation	<ul style="list-style-type: none"> <li>• Production parcels from the Argyle mine are sorted and valued by RTD's staff in Antwerp every five weeks. The actual SQD for each parcel is reconciled against the expected SQD, and hence this relationship is tracked/monitored on a continuous basis. The results of the valuations are used to price the sales assortments offered to customers. Sales prices are considered confidential and, therefore, are not reported in the Public Domain.</li> <li>• RTD (Antwerp) uses two methods for selling Argyle diamonds: the bulk of production is sold via two-year supply agreements with approx. 20 core customers, and the balance is sold via auctions that are open to a wider array of diamond companies. The auctions are used for price discovery; they help to set prices for the bulk of production. Assortment prices are reviewed monthly. RTD sells Argyle diamonds at "Producer Selling Prices", which equate to "Diamantaire Buying Prices".</li> <li>• RTD (Antwerp) employs strict QA/QC methods during the diamond sorting and valuation process. Although routine assessment for diamond damage is not undertaken, the QC methods will identify changes in the proportion of damaged stones. If excessive damage is identified, feedback loops are in place for asking staff in the Recovery Plant at Site to review any changes made to their recovery processes.</li> <li>• The micro-diamonds recovered from drill core for grade estimation are not sorted for quality.</li> </ul>
Security and integrity	<ul style="list-style-type: none"> <li>• All RTD's entities are required to comply with the Diamond Security Standards that specify the minimum level of control needed to ensure that assets are appropriately protected. These Standards also provide a framework for implementing regular internal and external audits and for operating according to the Kimberly Process Certification Standards. RTD's security standards and processes are strictly confidential.</li> <li>• Product handling at Argyle, in Antwerp and at the Thunder Bay Laboratory is conducted according to protocols and tolerance limits. Out-of-tolerance limits (OTL) are specified for diamond handling activities. Diamond parcels are weighed out and weighed in and any OTL are investigated by Departmental managers. Weight losses are permitted for the diamond cleaning processes that occur at Site, but the weight losses are trended and any OTL's are investigated.</li> </ul>
Classification	<ul style="list-style-type: none"> <li>• The SFDs for each ore domain are reviewed periodically as part of the quarterly reconciliation processes.</li> </ul>

## APPENDIX – REPRESENTATIVE DRILLING SECTIONS

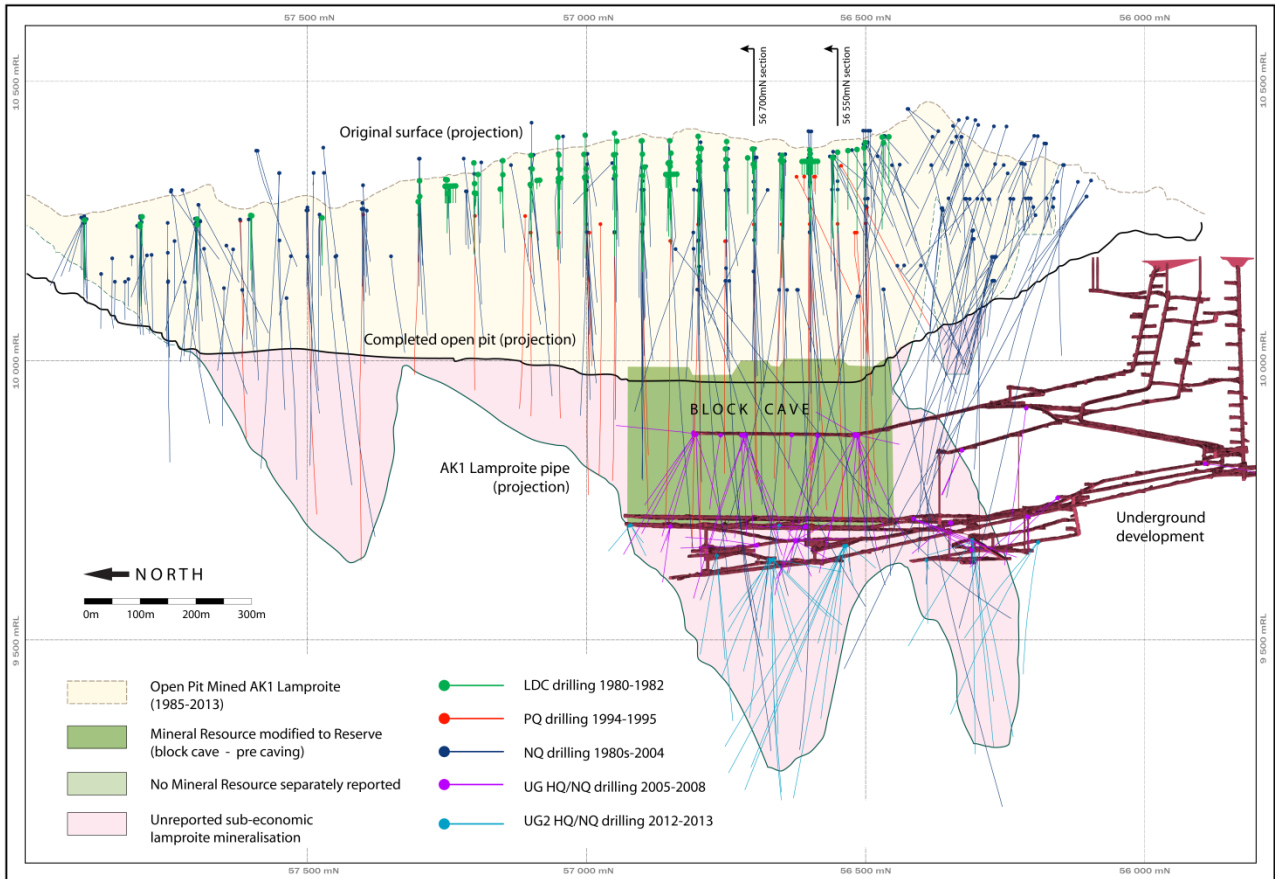


Figure 1 – Longitudinal section projection of the orebody and historical drilling campaigns. Due to the dipping nature of the lamproite pipe, the open pit, pipe extents and drill holes are shown projected onto the section. For clarity, surface geotechnical, piezometer, underground hydrogeology, cover drilling and cave monitoring holes are not shown

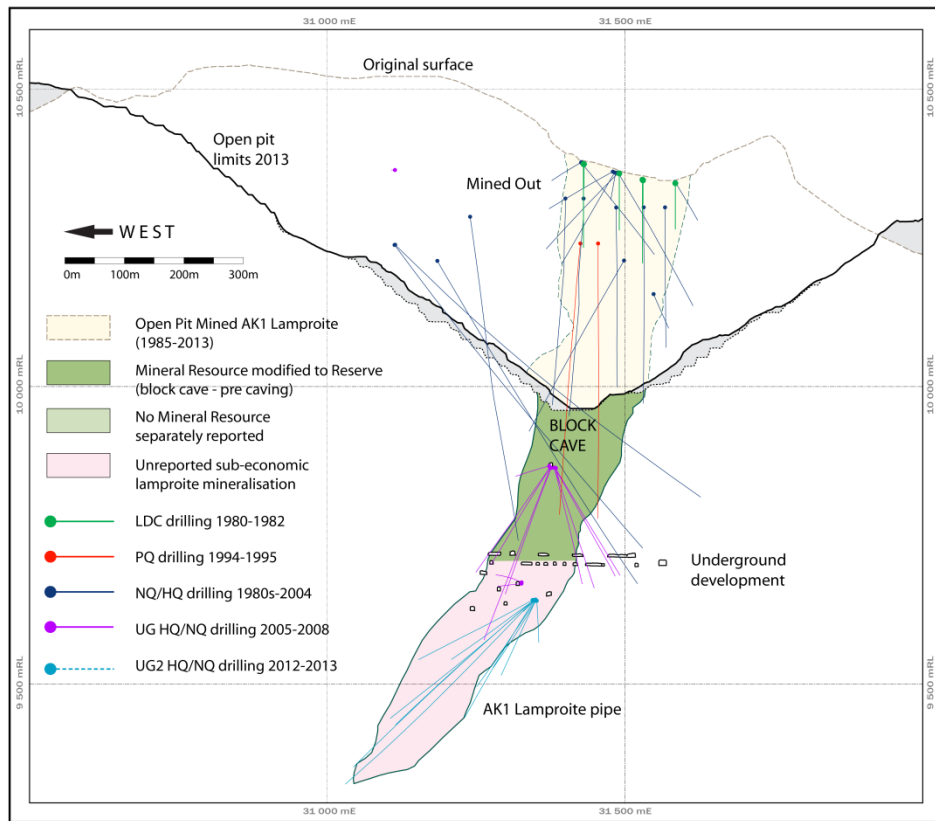


Figure 2 – Cross section through the reported reserve and resource (56 700m northing)  
 Drill holes collared approx. +/- 40mm off section are shown. Complete hole traces are shown for holes that are not drilled vertically within the section. For clarity, surface geotechnical, piezometer, underground hydrogeology, cover drilling and cave monitoring holes are not shown

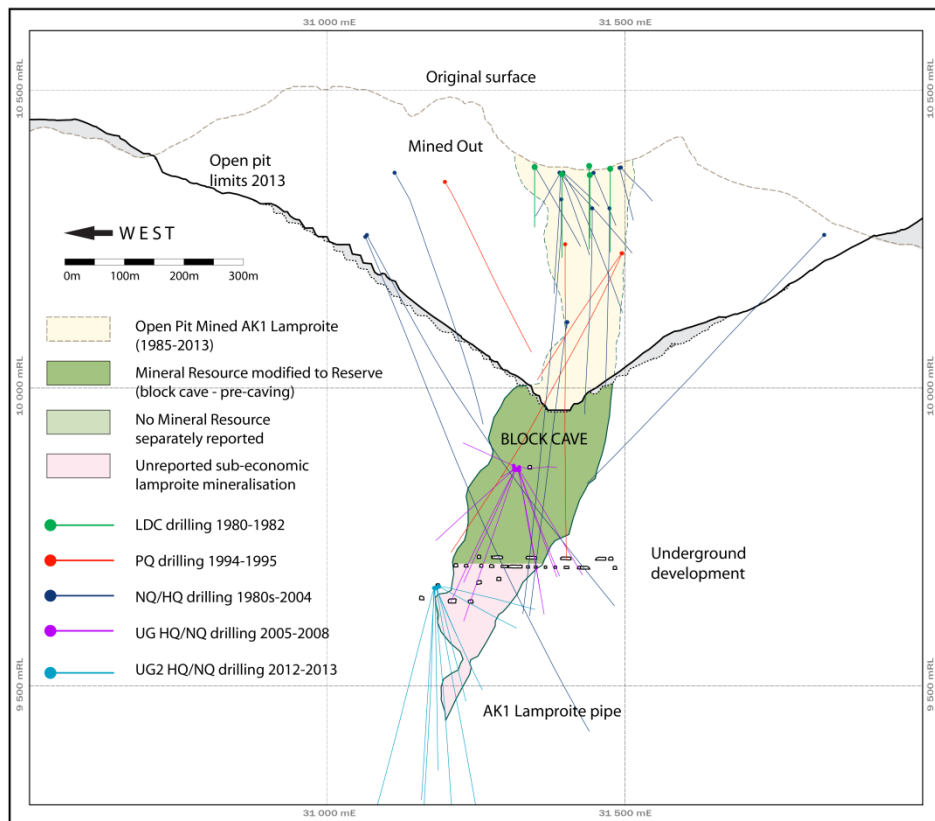


Figure 3 – Cross section through the reported reserve and resource (56 550m northing)  
 Drill holes collared approx. +/- 40mm off section are shown. Complete hole traces are shown for holes that are not drilled vertically within the section. For clarity, surface geotechnical, piezometer, underground hydrogeology, cover drilling and cave monitoring holes are not shown