ASX RELEASE

07 June 2017

ASX: ARU

COMPLETION OF DETAILED RESOURCE ASSESSMENT

- **Mine Planning for Definitive Feasibility Studies can now commence**
- **66% of Measured and Inferred inventory confirmed as high yielding NdPr material types**
- **Compliments results of pilot activities**
- **Confirms a consistent NdPr distribution for all resource categories**

Arafura Resources Limited (ASX: ARU) ("Arafura" or the "Company") is pleased to announce the completion of a detailed program of geological and geochemical analysis to be utilised for the next phase of mine planning activities for the Definitive Feasibility Study.

The study was commenced to provide greater confidence for the Mine Plan that will incorporate selective mining, and ore loss and dilution studies, to allow the development of optimized pit shells, strategic production schedules and material blending strategies.

Additionally, the review confirmed a substantial inventory of phosphate-rich material types at Arafura's 100%-owned Nolans Bore neodymium-praseodymium ("NdPr") deposit in the Northern Territory.

This work follows the successful completion of the beneficiation pilot plant earlier this year which demonstrated elevated recoveries of all Rare Earths including NdPr from phosphate-rich material types.

Arafura's Managing Director, Gavin Lockyer said, "The results of this work are extremely pleasing and confirm that this is a world class NdPr deposit. Combined with our ongoing successful pilot results, and forecast supply shortages of NdPr for the Electric and Hybrid vehicle market, Arafura continues to prove that it represents a significant and viable source of these scarce and critical materials in the near term."

"This data will now feed into our mine planning schedules to optimise the economic recovery of NdPr and Phosphate ("P_2O_5") and minimise our operating costs both in mining and downstream processing for the Definitive Feasibility Study", Mr Lockyer said.

This recent analysis, which included the reclassification of material types for all assay intervals and the acquisition of 3,500 new representative whole rock geochemical assays from across the deposit, has identified that more than 66% of the project's higher confidence Measured and Indicated resource inventory comprises phosphate-rich material types.

ARAFURA RESOURCES LIMITED

AN EMERGING RARE EARTHS PRODUCER FOR USERS WORLDWIDE

ARAFURA RESOURCES LIMITED
arafura@arultd.com www.arafuraresources.com.au ABN 22 080 933 455
PERTH: Level 3/263 Adelaide Tce, Perth WA 6000 | PO Box 5773, St Georges Tce, Perth WA 6831 T: +618 6210 7666
DARWIN: 18 Menmuir St, Winnellie NT 0820 | PO Box 37220, Winnellie NT 0821 T: +618 8947 5588 F: +618 8947 5599

Whilst all mineralised material types can be processed using Arafura's flowsheet, NdPr and P_2O_5 recoveries are influenced by mineralogy as currently being demonstrated through Arafura's pilot activities. *(refer to ASX announcement 6 February 2017)*.

The distribution of these phosphate-rich material types at Nolans Bore is shown in Figure 2.

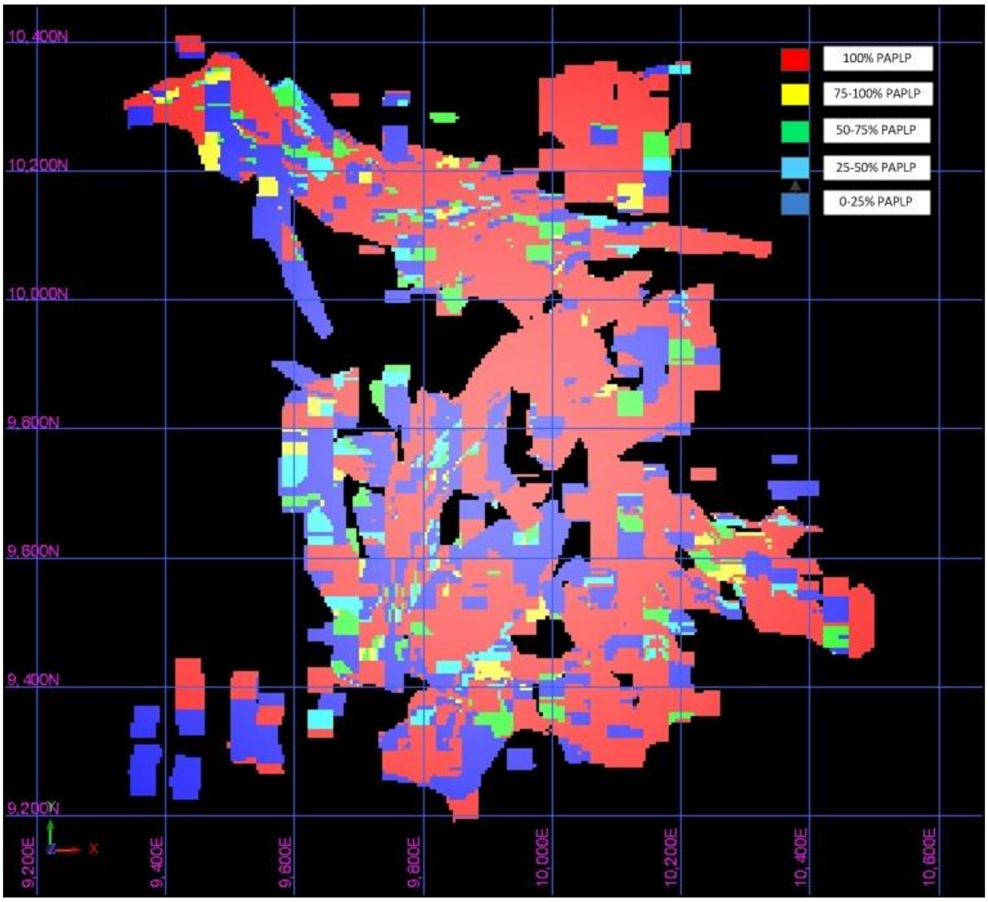
The work did not result in any material change to the previously reported Mineral Resources for the project *(refer to ASX announcement 30 October 2015).* However, it did reveal the consistent nature of the distribution of NdPr across the deposit and the abundance of P_2O_5 material best suited to Arafura's flowsheet as shown below in Figure 1 and attached JORC Table 1.

Figure 1: Mineral Resources for the Nolans Bore deposit as at 07 June 2017 using a 1% TREO Cut-Off Grade.

RESOURCES	TONNES million	RARE EARTHS TREO %	PHOSPHATE P_2O_5 %	NdPr enrichment %
Measured	4.9	3.2	13	26.1
Indicated	30	2.7	12	26.4
Inferred	21	2.3	10	26.5
TOTAL	56	2.6	11	26.4

Numbers may not compute due to rounding. "NdPr enrichment" is the proportion of TREO comprising Nd_2O_3 and Pr_6O_{11}.

Figure 2: Plan view showing the distribution and proportion of phosphate-rich mineralised material types in the Nolans Bore resource. The red represents high-recovery phosphate-rich mineralisation.



The geological block model that supports these Mineral Resources is now populated by a greater array of attributes of economic, metallurgical and environmental interest. These include the proportion of the reclassified material types and an estimate of iron (“Fe_2O_3”) and aluminium (“Al_2O_3”) contents, the mix of which are important to the current process being piloted.

The results of the geological model also confirm data presented in the Nolans Environmental Impact Statement and validates management plans for tailings and waste rock inventory during operations.

– ENDS –

For further information, contact:

Investor enquiries:	**Media enquiries:**
Gavin Lockyer	Luke Forrestal
Managing Director	Media and Capital Partners
T: +61 8 6210 7666	M: +61 411 479 144

Competent Persons Statement

The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Kelvin Hussey, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Hussey is a full-time employee of Arafura Resources Limited. Mr Hussey has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Hussey consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

JORC TABLE 1 ASSESSMENT CRITERIA FOR NOLANS BORE MINERAL RESOURCE STATEMENT AS AT 7 JUNE 2017

Section 1: Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	Senior Geologists, including Competent Person (Kelvin Hussey), have ensured sampling is to industry standard across all exploration and resource definition campaigns at Nolans Bore. Quality of sampling and all relevant sampling details were continuously monitored and recorded by the responsible Geologist. Results of the sampling programs detailed below are included in the geological model and Mineral Resource estimate as outlined. Assay results of samples collected from surface mapping, shallow pits and the wide diameter core/auger holes were not included in the Mineral Resource estimate but were considered in the development of the geological model. Sampling has involved both Reverse Circulation (RC) and diamond core drilling methods. Most drill holes were systematically drilled towards the southeast (145 degrees true) at an initial inclination of -60 degrees. Drilling has been completed across most of the area at nominal 40m x 40m spacing on a local grid pattern with infill to 20m x 20m in the central parts of the North Zone (CNZ). Wider spaced exploration RC drilling occurs on the periphery of the main resource. 10 vertical RC holes have been drilled at Nolans Bore and are used to abstract or monitor groundwater. 25 inclined diamond core holes have been drilled nominally east or west (true) on 100 metre-spaced sections to resolve complexities in the geological model in the Central Zone. 19 inclined diamond core holes have been drilled in various other directions. The quantum of drilling and drill core at Nolans Bore is sufficiently high and widespread to ensure adequate sampling and a geological understanding of the deposit. RC drilling was undertaken in 2001, 2004, 2005, 2007-08, 2010, 2011 and 2013. All RC drilling campaigns have employed a 140mm diameter face sampling hammer with sufficient air pressure/volume to ensure adequate representative sample was collected. A total of 63,053 metres in 589 RC drill holes have been completed at Nolans Bore and its immediate surrounds. A total of 532 of these RC holes (60,021 metres) have been drilled in the main area considered in the current resource assessment. RC drill chips were collected at one-metre sample intervals. Assay samples were automatically split via a 12.5/87.5 riffle splitter at the drill rig. One 2011 RC drill rig was adequately setup to enable automated splitting of wet samples. An assessment of wet and dry splitting at this rig and a comparison with the other rigs at that time showed no material biases with acceptable sample sizes. The entire 2007-08 RC program and all other wet samples were manually split to size using Arafura's 50/50 riffle splitter after the residues were air dried in the sun. The drill rig cyclone and splitter were thoroughly washed and air dried after each rod in the clay-rich parts of the deposit, to limit cross-contamination of samples and smearing of grade. Automatically split assay sample sizes were typically considered acceptable. However in some instances, the residue was manually re-split again to achieve an acceptable assay sample size. RC samples were sub-sampled using both rig-mounted and stand-alone riffle splitters into one-metre samples of 3-6 kg in size, averaging about 4 kg. Most samples were collected dry with a small proportion collected moist due to ground conditions or excessive dust suppression. As instructed, RC assay samples were composited on an equal weight basis at the laboratory, typically as 2 metre assay samples although both 1m and 3m RC assay samples occur. Field duplicates are targeted one-metre assay samples that have been specifically selected as representing geological boundaries or corresponding to an anticipated high, medium or low grade based on radiometric and geological logging.

Criteria	Commentary
	Diamond core drilling occurred in 2004, 2005, 2006-07, 2009 and 2011. A total of 27,060 metres have been drilled at Nolans Bore with 92 holes cored from surface and 136 RC holes extended by cored tails; all of which are HQ3, NQ2 or NQ3 in size. Four RC holes have two core tails making 140 cored tails in total. Most diamond core drilling has used a triple-tube configuration to gain the maximum possible recovery. Orientated diamond core drilling was initially attempted in 2006 but this was abandoned due to technical difficulties in the kaolin- and clay-altered zones in the CNZ. Systematic orientated diamond core drilling occurred in 2009 and 2011.
Sampling techniques	Diamond core assay samples were collected by cutting the core in half using a diamond saw and sampled to lithological boundaries or core loss breaks. Assay samples are continuous intervals and do not include core loss intervals. Core loss is recorded as no recovery and a zero grade is assigned to the interval. Geotechnical and metallurgical drill core has been sampled at metre marks, but where possible has also been sampled to lithological boundaries. Holes cored for metallurgical purposes are typically twins of a previous RC or cored hole, and were quartered for assay. The minimum sample size length was nominally set at 25 cm although smaller sample intervals were collected, mostly due to core loss. Most of drill core assay sample lengths range from 0.25-2.5m. All drill core samples were assayed as individual samples. Duplicates were prepared from a split of the coarse crush. Costeaning was done in 2000 and 2007. Nine 1-2.5 metre deep costeans totalling 1,222 metres have been excavated across the mineralisation. Costeans have been mapped and then representatively channel-sampled by hand using a pick to dig a channel at a constant depth below the ground surface along one side of the costean. Channel sample sizes are considered representative of the material, and in 2007 weighed 4-6kg per metre. A summary of the drilling and costeaning data used for geological logging and sampling is presented below.

Year	Costean		RC		Core		
	number	metres	number	metres	number from surface	number of tails	cored metres
2000	6	890					
2001			12	856			
2004			20	1,525	5		518
2005			58	7,532	1	11	1,042
2006			41	3,462	17		1,322
2007	3	222	103	10,018	6	3	704
2008			85	7,815			
2009					7		793
2010			9	992			
2011			208	27,761	56	126	22,681
2013			1	60			
Total	**9**	**1,112**	**536**	**60,021**	**92**	**140**	**27,060**

Criteria	Commentary
Sampling techniques	Samples were selected for assay by the Competent Person or Senior Geologist following Arafura's standard sampling procedures and protocols. Not all drilling and costeaning was sampled or assayed. Assayed intervals typically include samples with logged mineralisation, alteration, or samples with above background levels of radioactivity. In addition, the adjacent material was sampled for up to at least two metres away from possible alteration/mineralisation. Additional follow up sampling was undertaken where and when appropriate.
Drilling techniques	Reverse Circulation (RC) drilling employed a 140mm diameter face sampling hammer with drill hole depths ranging from 18-210 metres. The drill rig's air capacity was typically boosted via an auxiliary compressor to ensure adequate sample recovery and the driest possible sample. Water injection was used to minimize dust emissions at the rig. Diamond core drilling mostly employed HQ3 and NQ3 to ensure maximum recovery via triple-tube configurations with a maximum drilling depth of 492 metres. Drill holes cored from surface are HQ3 in size while cored tails were typically NQ3 in size. A total of 11 twinned holes have been completed to investigate differences between the two drilling techniques with proximal comparisons of RC vs core, and core vs core. Despite some short-range variability, twinned RC vs core and core vs core generally yield similar assay results for the mineralised intervals with no material differences observed between the two drilling techniques in most areas. Comparisons indicate some loss of grade in the fines for RC. A direct comparison of twinned core vs core demonstrates that poor recoveries in highly variable ground conditions can be problematic and to a large extent depend on driller's competence and supervision by Arafura. Hence despite lower RC sample recovery in clay-altered zones and a reduction in grade in medium-high grade zones, the core vs core twins showed that coinciding core loss in twinned intervals of mineralisation is likely to be a more significant issue than lower RC sample recovery. The recovered drill data is considered adequate given the quantum of surrounding data, however grades are likely to be under-estimated in some parts. Drill collars were sited and pegged by hand-held GPS in 2001-2004 with subsequent drill collar locations surveyed and pegged by professional surveyor prior to drilling. All completed drill collars have been accurately re-surveyed using a professional surveyor. Hole orientations were surveyed by the driller typically at 30 metre intervals using Eastman or single shot digital cameras. Where possible all holes were open hole surveyed by Borehole Wireline Pty Ltd (Borehole Wireline) and survey data recorded at 5 cm intervals as Log ASCII Standard (LAS) data
Drill sample recovery	To ensure representivity and maximum sample recovery, the responsible Geologist was present during all drilling operations to monitor the drilling and sampling process. RC sample recovery and moisture content was routinely recorded by the responsible Geologist and is entered into the database. RC sample recovery is based on a subjective assessment of the volume recovered and has been recorded as high (H), medium (M) or low (L), and since 2007 has also been determined via the weight of the bulk sample returned, averaging about 75-80% nominal mass recovery. RC recoveries are generally considered acceptable although lower volumes are recovered at depths greater than about 100-150 metres in areas of large groundwater volumes. Lower recoveries are also typically observed in the kaolin- and or clay-altered zones. Assessments indicate that RC sample recovery is typically adequate for the first 150m although the deepest RC hole (210m) returned adequate sample volume throughout. RC holes deeper than 150 metres make up only a small fraction and most RC holes are terminated in favour of cored tails and better recoveries. RC holes were typically terminated when recovery was too low. Drill core recovery is typically 95-100% although moderate to significant core loss is recorded in scattered intervals in some holes. The host rocks and the more massive mineralised zones tend to show good recoveries in most cases. Higher core losses typically correspond to clay-rich zones with rare intervals showing 10-20% recovery per run, although most runs achieve 50-100% core recovery in poor ground. Some low recovery intervals are

Criteria	Commentary
	coincident with strongly mineralised zones. Core loss intervals are recorded as no recovery (NREC) and have a zero grade in the database. Based on an analysis of twinned core holes, grade may be significantly understated due to the assignment of zero grade to core loss intervals.
Drill sample recovery	The largest amount of diamond core drilling occurred in 2011 (84% of total drill core metres) and achieved a total recovery of 98.7%. However 14 cored holes from 2011 only achieved 80-95% recovery. The results achieved in 2011 are very similar to previous core drilling campaigns although the 2006-07 core drilling campaign provided the best recovery and record of strongly mineralised intervals in poor ground conditions. Arafura's constant supervision of cored holes informed the drillers of expected ground conditions and aided higher recoveries in the clay rich zones.
Logging	Qualitative geological logging has occurred for all holes in their entirety using pre-designed in-house paper log sheets. Completed log sheets have been scanned and are stored electronically. Data has been manually entered into Arafura's GeoBank database. Experienced senior geologists have provided guidance and overseen all logging and sampling based on the recorded logging details and measured radioactivity. Arafura has reviewed all geological logging information and developed synthesised geological summaries for each drill hole. Arafura's revision process has modified some of the originally logged boundaries and rock types. Geological summaries have been entered into the database using formatted spreadsheets with validation rules to minimise data entry errors. Geological summaries have been internally reviewed for consistency and audited, and used together with assay and geophysical logging data to construct the geological model for Nolans Bore. RC holes were logged at one-metre intervals at the rig by the Geologist. RC chips were collected from the polyweave bag, sieved and washed clean for geological logging purposes. Each individual one-metre drill interval was logged by the responsible Geologist, recording sample ID, sample recovery information, grainsize, texture, colour, mineralogy and rock type. The background radioactivity and the radioactivity of each one-metre polyweave bagged sample was measured with a Geiger meter and the dosage recorded. Representative RC chips for each metre interval were placed into pre-numbered chip trays by the responsible Geologist. Chip trays were routinely reviewed and re-logged where necessary as part of the geological synthesis and the material type reclassification. These are retained and stored in Darwin for reference. Diamond core was logged by the responsible Geologist in the coreyard at Aileron or Nolans Bore. All diamond core was carefully reconstructed, cleaned and marked up prior to logging. For orientated core, bottom of hole (BOH) marks were extended where reliable and consistent in accordance with industry standards to allow pertinent structural information to be accurately recorded. RQD logs were completed by either the responsible Geologist or a trained field assistant. All diamond core was geologically logged in detail at intervals consistent with recovered geological boundaries. After all logging, assay sample ID and cut-marks were clearly marked on the core by the responsible Geologist. All diamond core was photographed both wet and dry showing metre marks and assay sample intervals prior to the sampling process. Downhole geophysical logging data (azimuth, inclination, total magnetic field, natural gamma, gamma density, caliper and resistivity) was collected for all drill holes where possible using open-hole wireline survey methods and a number of different geophysical tools. Downhole geophysical probes were routinely run through the Nolans Bore calibration test hole at the start of each logging campaign to confirm the tools were operating correctly and performing within accepted margins of error. A comprehensive comparison of all azimuths for 2007/08 holes tailed in 2011 shows a consistent errors for some of the downhole probes used in 2007. Accordingly the reported azimuth data has been thoroughly reviewed and adjusted by 4 or 8 degrees as appropriate. These corrections were overlooked in the previous model because all pre-2011 LAS data was not loaded into the database and deviations of 5 degrees inclination and 10 degrees in azimuth were considered acceptable between 30 or 40m surveys. In 2012, the mineralised intervals were extracted from the geological model, reviewed and reclassified into six different material types representing two broad mineralisation styles. These were then entered into the database and estimated into the 2012 model. These initial materials types provide a broad assessment of the mineralisation in 5m intervals but have since been superseded.

Criteria	Commentary
Logging	The oxidation state, lithology and form of all RC chips and drill core were reviewed and re-assessed using 2m intervals in 2015 as part of waste rock characterisation studies for the EIS. This data is loaded into the database and used to develop the oxidation surfaces used in the 2015 and 2017 models. Mineralised material types were initially identified and assigned to one of six different types in 2012 based on 5m intervals (Material types 1 through 6 now referred to MAT2012). Internal country rock was logged as type zero in MAT2012 although the amount was limited as only the mineralised bodies were considered in MAT2012. A more comprehensive and detailed assessment of material types was completed in 2016. In 2016, a specific material type was identified for each assay interval within the main part of the deposit. This means all newly assigned material types are now aligned to REE-P grades and detailed whole rock assays, where available. Furthermore, MAT2016 significantly expanded upon the MAT2012 classification scheme and was designed to suit Arafura's current flowsheet, and a phosphate concentrate with high recoveries of REE and P. The MAT2016 classification scheme focussed on the REE mineralogy and included types 0A,0B1,0B2,0B3, 0C, 1,2,3A,3B,3C, 4A, 4B, 5A1,5A2,5B1,5B2, 6A,6B and 6C. MAT2016 types 5B1 and 6A are possible but were not observed during the re-logging of core and RC chips. Clearly the original MAT2012 type have been subdivided and refined. It should be note that types 1 and 2 occur in both classification schemes but there are subtle differences with less oxidised material assigned to MAT2016 type 1 in MAT2016 compared to MAT2012 type 1. The different material type schemes reside in different database tables to avoid confusion. For 2017 geological modelling purposes, MAT2016 types have been grouped into four categories (PAPLP, NP1, NP2 and WASTE) and composited in to 5m intervals for modelling purposes. This level of logging detail and its assessment supports appropriate Mineral Resource estimation, mining studies and metallurgical studies.
Sub-sampling techniques and sample preparation	RC chip samples averaging ~4kg were automatically collected via riffle splitter into a pre-numbered calico bag for each one-metre interval drilled. A consistent sample size of 3-6 kg has been achieved across all RC drilling campaigns. Following an assessment by the Competent Person, all 2007/08 RC samples were manually riffle split to avoid potential sampling biases at the rig. With the exception of one RC rig in 2011, all wet samples have been manually riffle split after air drying. Where possible small (<2kg) automatically split RC samples were manually riffle split to achieve the desired ~4kg sample size. Assay samples were collected within 1-3 days, placed in polyweave bags in lots of 4-5 samples and kept dry after collection. Where possible a composited two metre interval was used for RC assay samples. One- and three-metre assay intervals have also been used. Not all RC drilling was assayed. RC assay sample selection was done by the Competent Person or a Senior Geologist and involved an assessment of logged geology and radiometric data. As a general rule, composited samples were broadly similar in lithology, radioactivity and sample recovery. Assay samples typically extended at least two metres past identified mineralisation and where possible follow up sampling occurred to close off mineralisation. Field duplicate RC samples were routinely collected in all programs about every 20 RC samples to monitor the precision of the field sampling process. Field duplicate samples were selected by the Competent Person or a Senior Geologist to span the range of expected grades, including waste, and to confirm lithological variations and or contacts. Field duplicate samples always corresponded to individual one-metre RC assay samples. Follow up check samples were also collected to confirm unexpected or unusual assay results. Checks and field duplicates were assigned to the same number series but different to the routine samples. Diamond core was cut in half with a diamond saw and sampled to major lithological boundaries and core loss breaks. Assayed core sample intervals range from 0.08-4.03 metres but intervals less than 0.2 metres and greater than 3.0 metres are not common. In 2011, the most significant diamond core drilling campaign, 99.4% of core samples ranged from 0.2-2.5 metres in length averaging 1.32 metres. The 2006/07 core assay interval averaged 1.41 metres while the 2005 campaigned averaged 1.77 metres largely because the minimum length limit was set at 0.5 metres in 2005. Metallurgical and geotechnical holes have been sampled to a combination of metre-marks and lithological boundaries. Metallurgical holes were typically sampled as quarter core for assay. Duplicate core samples were collected at the preparation lab in Pine Creek in 2007 and at Nolans Bore in 2011 by taking a 50/50

Criteria	Commentary
Sub-sampling techniques and sample preparation	split of the coarse crush prior to milling. Core duplicate samples were pre-determined by the Competent Person or a Senior Geologist and assigned to a different number series. Sample preparation was completed at North Australian Laboratories (NAL) in Pine Creek up to 2008, at Northern Territory Environmental Laboratories (NTEL) in Darwin in 2009-10 and at Arafura's onsite preparation laboratory in 2011. Arafura's onsite preparation laboratory was supervised by the Competent Person or an experienced Senior Geologist and operated by experienced technical staff supplied by Intertek Pty Ltd. Assay sample preparation typically comprised of oven drying, coarse crush of entire assay sample to -2.0 mm nominal size, pulvervising a 1-1.5kg split to plus 80% passing 100 microns, and then compositing as per instruction lists. Pulp sizing has not occurred, but NTEL and Genalysis have advised that samples have easily met this specification given material types and milling times. Compositing instructions were provided for all RC samples and this was done in clean rooms at NAL in Pine Creek and on site at Nolans Bore. A 200-500g master pulp was collected and retained for each milled sample. All diamond core and a portion of the RC samples were analysed as individual samples. The two- and three-metre composited RC assay samples were prepared by combining equal weights from the master pulp of each consecutive one-metre RC sample and thoroughly mixing to form a homogenised composited master pulp. The composited master pulp was sub-split into a 50g assay pulp and a stored master sample pulp. All master and assay pulps have been recovered and are safely stored in Arafura's warehouse in Darwin. Some of the pre-2007 assay masters were destroyed by termites while in storage at NAL in Pine Creek.
Sub-sampling techniques and sample preparation	The confirmatory inter-laboratory assay samples were prepared at NTEL. These were either the original or a sub-split of the original assay sample submitted to them, and dispatched to the referee laboratory by NTEL. Internal standards are sourced from typical Nolans Bore type mineralisation and host rocks using representative assay samples or its master pulp sample after confirmatory inter-laboratory analysis. In 2011, blind standards were inserted by the Competent Person or Senior Geologist at about 1 in 40 basis before dispatch to the assay lab. Blind standards were identical in appearance to the submitted assay pulps and used the same SampleID number series as the field duplicates. The 2016 XRF assay samples were collected by Arafura staff from stored pulps and mostly sourced the original routine assay pulp used in previous laboratory job sequence. Numerous samples have been assayed more than once so care was taken to ensure the actual laboratory job was recorded on the collection sheets to ensure potential errors could be tracked back to their source. No new sample handling errors were identified however a small number of pre-existing issued were identified or resolved. The primary assay sample size is considered appropriate to correctly represent this style of rare earth element (REE) mineralisation and associated alteration, the thickness and consistency of the intersections, sampling methodology, and the assay ranges for the primary elements of interest.
Quality of assay data and laboratory tests	Almost all primary routine laboratory analyses have been assayed at NTEL (now Intertek NTEL), or its predecessor Chemnorth, by ICPMS/OES using Arafura's standard Nolans Bore assay scheme and standard suite of elements. Assay samples were digested using NTEL's G321 scheme which uses $HCl/HNO_3/HClO_4$ and is considered an "ore-grade" digest suitable for Nolans Bore-type mineralisation. Values for Al, Ba, Ca, Ce, Dy, Er, Eu, Fe, Gd, Ho, La, Lu, Nd, P, Pr, Sm, Sr, Tb, Th, Tm, U, Y and Yb were determined by ICPMS/OES. Eu values were not reported for one NTEL assay job (EL03639). NTEL has used the same ore-grade digest method and ICPMS/OES assay scheme for all Nolans Bore material. Hence all results are comparable. Minor amendments were made to NTEL's digest protocols in 2005. NTEL advised this revision solved some digest solution issues and improved the repeatability of REE results. Some of the early routine and confirmatory analyses were assayed at AMDEL Adelaide using IC3EX and IC3MX which is analogous to NTEL's digest and assay methods. NTEL's values were routinely monitored via the systematic use of Arafura's internal and certified standards, and duplicates. Early confirmatory analyses at AMDEL Adelaide also involved the use of four-acid digest methods (IC4 and IC4R) to confirm their three-acid digest values. Most of the systematic confirmatory inter-laboratory assays (93.8%)

Criteria	Commentary
Quality of assay data and laboratory tests	have been done at Genalysis Laboratories (Perth) using fusion and ICPMS/OES determinations. These data strongly support NTEL's assay values and attest to the quoted accuracy and precision of NTEL's data as reported for elements of interest. NTEL's REE, P, U and Th values are typically within error for mineralised samples in inter-laboratory checks; however, their values for Al, Ba, Ca, Fe and Sr often differ to varying degrees and should be considered informative only. NTEL's G321 digest values and AMDEL's IC3 digest values for Al, Ba, Ca, Fe and Sr have been excluded and are not used in the 2017 resource assessment and material type analysis. In 2016, Arafura completed a representative fusion XRF re-assay program to aid material type re-classification. The higher-quality XRF whole rock results supersede NTEL's data. The program involved 3,500 re-assays of stored pulps using Intertek Genalysis' method FB1/XRF74-901 for SiO_2, TiO_2, Al_2O_3, Fe_2O_3, MgO, MnO, CaO, Na_2O, K_2O, P_2O_5, SO_3, BaO, SrO, La_2O_3, CeO_2, Pr_6O_{11}, Nd_2O_3, Sm_2O_3, Eu_2O_3, Gd_2O_3, Y_2O_3, U_3O_8, ThO_2 and Total. All XRF pulps were also analysed by TGA (1000ºC) for LOI and a selection of pulps were assayed for F by FC7/SIE. The results were monitored for accuracy and precision at the laboratory using agreed upon CRM. Arafura's CRM and internal samples were also utilised but these were all inserted as blind samples. Arafura's blind CRM and duplicates of routine samples were systematically inserted on a 1 in 40 basis. The original routine pulps and/or master pulps of Arafura's internal standards were also inserted randomly throughout most jobs. These check results re-confirm the values of the internal standards. In general, the results for all standards and duplicates are very well constrained. The XRF dataset is considered a very robust and accurate dataset. The XRF results are more precise than the original routine values based on detailed analysis of all CRM, internal standards, duplicates and blind samples. The XRF results of each individual sample assayed in 2017 were directly compared with the original routine results for La, Ce, Nd, P, U and Th as part of QAQC. Most of the NTEL's and AMDEL's original routine values agree to within stated laboratory errors. This confirms the overall quality of the original assay dataset however there are a small number of samples with obvious differences. Genalysis' XRF results indicate the rare earth values for some mineralised samples are under reported in some cases. This difference is attributed to the sample's mineralogy and differing digest methods (ie. partial digest versus total) and has been observed in small fraction of all samples submitted as inter-laboratory checks using total digest methods. Comparisons show that most routine mineralised samples are well correlated and the results agree to within acceptable tolerance limits based on stated laboratory errors for the different digest methods. The number of under reported samples is small and the impact of this difference is considered essentially immaterial. Direct comparisons of Al, Ca, Fe and Sr results also clearly demonstrate that NTEL's and AMDEL three-acid digest results are indicative only. Whilst some values are acceptable, others are clearly different to the whole rock value. Hence they are not included in detailed resource assessments or modelling. A handful of the re-assayed XRF samples yielded very different REE-P results to those previously reported by the primary laboratory. Based on Arafura's detailed material type analysis of each assay sample interval and repeat re-assaying by XRF to confirm the validity of the new result, these samples have been resolved as previously unidentified sample mix-ups. The results of these sample mix ups are consistent with assay pulp being derived from the adjacent sample interval. These mix ups are deemed rare events and may have occurred either during sample preparation or at the primary laboratory during assay preparation. The impact of these mix ups is negligible given they are a very small fraction of the total population. The 2016 XRF data also identified that three NTEL assay jobs from 2004 are in general less well controlled than previously understood, with the lower precision resulting in greater laboratory errors than advised. The data from these older jobs is still considered acceptable. While the proportion of these lower quality assay results is small in the overall scheme, the use of the 2016 XRF results has largely removed most of the lower quality NTEL assay data of mineralised samples in these jobs. Furthermore, the general quantum of higher quality data surrounding this lower quality assay data also limits the impact of the remainder. Arafura adopts QA/QC protocols using blind standards, laboratory and field blanks and duplicates, Certified Reference Material and internal reference standards all supported by systematic 1:20 inter-laboratory check assays. Assay jobs are rejected and the laboratory instructed to repeat the entire job if the reported assay values for the standards fail to be within acceptable tolerance limits. Up until 2008, the assessment of assay results was done by Mr John Goulevitch of Exploremin Pty Ltd. His assessment is considered appropriate as the individual REE, P and U levels of the

Criteria	Commentary
Quality of assay data and laboratory tests	internal standards and P/REE of all samples were closely monitored. In addition to a thorough assessment of the standards and laboratory duplicate assay results, all laboratory results since 2009 have been carefully evaluated by the Competent Person (Kelvin Hussey) by assessing key elemental ratios prior to loading into the database. All suspect results have been confirmed or rejected by repeat assay as appropriate. A total of 1,942 field duplicate samples have been routinely collected at a rate of about 1 in 20 of the assayed samples. Field duplicates were selected by the Competent Person or a Senior Geologist as individual samples that cover the variations in measured radioactivity and logged mineralisation intensity and also include non-mineralised country rocks and lithological contacts to confirm the accuracy of the sampling protocols. RC field duplicate assay samples have been manually riffle split and assigned to a different number series. Assay mis-matches are typically investigated by repeat sampling and assaying of the original RC sample and the two adjacent samples. Core duplicates were sampled as 50/50 splits of the coarse crush. Despite a small number of mis-matches, the outcomes of the field duplicate assay samples are within acceptable tolerance limits with similar results achieved across all programs. The duplicate samples confirm the integrity of the assay sampling protocols and indicate that confidence in sampling protocols and the assay database is sufficiently high to be reliable. Since 2009, there have been slight modifications to Arafura's protocols for assay QA/QC. These changes bring Arafura's data collection and QA/QC in-line with industry standards and include the systematic inclusion of Certified Reference Material. Despite the absence of Certified Reference Material in routine assay jobs at the primary laboratory prior to 2009, Arafura's systematic use of internal standards is sound practice and the routine assaying of 1:20 inter-laboratory check assays against Certified Reference Material at an independent referee laboratory confirms the primary laboratory results are acceptable. The precision and accuracy of the results from the primary laboratory has been monitored by 3,216 determinations on 64 internal standards from 2000 to 2012. In addition to these internal standards, Arafura's CRM ARA09-01 has been monitored as part of routine assay programs since 2009. These standards show the data from the primary laboratory are well constrained and under control for the elements of interest. Laboratory and field blanks demonstrate there are no significant contamination issues and laboratory duplicates show that laboratory practices and protocols are repeatable to a high degree of precision. Up to 2012, a total of 1,881 determinations have been done on 1,702 samples at other laboratories as part of confirmatory referee analyses. 1,770 of these determinations or 93.8% of this population have been done at Genalysis Laboratories (Perth) since 2007. Genalysis also systematically assayed Arafura's CRM ARA09-01 a total 34 times during this period and was involved in the certification of ARA09-01. Despite a small proportion of sample mis-matches, the inter-laboratory assay dataset indicates the check assays are typically within the stated ±10% accuracy and precision quoted by primary laboratory. The inter-laboratory assay results strongly support and confirm NTEL's assay data and attest to its accuracy and precision for mineralised samples. The inter-laboratory check assays also support the rare and unusual elemental ratios reported by NTEL and indicate that these are real geochemical features. As such, the systematic inter-laboratory check assays confirm and strongly support the use of NTEL's reported assay results. NTEL's G321/ICPMS results are sometimes slightly understated for very low levels of REE, Y, P, U and Th as observed in the country rocks. This difference is most likely due to the laboratory digest methods and trace amounts of G321 digest resistant minerals in the country rocks which are digested using fusion or four-acid digests. Despite both Genalysis and NTEL being owned by the same parent company (Intertek), the individual laboratories, digest methods and laboratory protocols are sufficiently different to offer an objective and independent opinion of the assay results. Clearly, Genalysis' fusion/ICPMS method should be regarded as the benchmark and utilised in the resource estimate. However these results are essentially identical to NTEL's results for mineralised samples and until recently total digest results were only a small fraction (about 1 in 20) of the total assay population. The 2016 XRF results were supported by the systematic use of publicly available CRM, specifically chosen to monitor Nolans Bore-type mineralisation and country rocks (OREAS460-OREAS465 inclusive, AMIS185, SARM1 and SARM32). These standards cover a wide spectrum of REE grades and utilise a high-grade phosphate standard. A granite standard was also included as a control to monitor other elements of interests in the country rock and

Criteria	Commentary
Quality of assay data and laboratory tests	low grade mineralisation. Each CRM was typically assayed once per job. These standard results were monitored, with all elements of interest within recommended tolerance limits. To monitor the robustness of the 2016 XRF data and to assess laboratory variations, Arafura's CRM ARA0-01 was also systematically assayed as blind sample about 5 times per job along with randomly selected pre-made blind duplicates encompassing the spectrum of known REE grades expected throughout each job for the entire program. ARA09-01 was assayed a total of 96 times in 2016 by XRF with the results yielding very low COV values for the major elements of interest (ie La_2O_3, CeO_2, Nd_2O_3 and P_2O_5 are all less than or equal to 0.01). In comparison, NTEL's COV for these elements/oxides in ARA09-01 are 0.02-0.04 while Genalysis' fusion ICPMS results are 0.03-0.06. Hence the standard results and the QAQC program attests to the overall robustness, and the accuracy and precision of reported 2016 XRF data. The data of potential economic interest used in previous Mineral Resource estimates is again accepted. However it is again noted that the AMDEL assays are less precise and of slightly lower quality than the NTEL data. The AMDEL data is generally considered conservative for REE and the results of a single twinned interval of mineralisation comparing AMDEL and NTEL data is comparable to other twinned intervals at Nolans Bore. The 2016 XRF results show that both the NTEL and AMDEL data is acceptable but in the re-assayed cases, these older data are superseded by the higher quality XRF dataset. Overall, the quantum of fusion digest results is now substantial and hence Genalysis' XRF and ICPMS/OES whole rock data have been fully utilised in the current resource estimate where appropriate. The entire assay dataset has been thoroughly reviewed and priority is now given to better quality data. The Chain of Custody has been routinely monitored for all assay samples by Sample Tracker since 2009. All dispatch samples have been received and all accepted results are loaded and randomly audited to ensure the veracity of the database. As an added QA/QC process all previous data was randomly audited and reviewed in 2011. Down hole geophysical probes have been calibrated by Borehole Wireline and were routinely run through Arafura's calibration test hole at Nolans Bore at the start of the logging campaign to ensure and monitor the quality of the logging data.
Verification of sampling and assaying	Geologists have logged all recovered RC chip and diamond core samples, and completed a review of all geological and sampling data. Diamond core has been photographed with metre-marks and sample intervals clearly labelled. Significant intersections have been independently reviewed and verified by alternative company personnel and the Competent Person. The Competent Person has inspected the sample preparation facility at North Australian Laboratories in Pine Creek, Intertek NTEL in Darwin, Intertek Genalysis at Alice Springs and Maddington Perth, and supervised sample preparation onsite at Nolans Bore. A total of 413 routine jobs have been assayed and officially reported by NTEL Darwin and its predecessor Chemnorth between 2000 and 2012. This represents the bulk of the routine and QAQC assay data. Four additional routine assay and QAQC jobs were also assayed by AMDEL Adelaide in 2005. Confirmatory inter-laboratory and QAQC assays have been predominantly done by Genalysis Laboratories in Maddington Perth since 2007 (16 jobs) with AMDEL Adelaide completing three confirmatory assays jobs prior to this. All confirmatory assay samples were prepared from the same pulp assayed by NTEL or a sub-split and dispatched directly to the referee laboratory by NTEL on behalf of Arafura. A total of 18 routine jobs were re-assayed in 2016 by XRF at by Intertek Genalysis in Maddington Perth. The results of all drilling, assays and sampling have been reported to the NTGS in annual technical reports. The 2016 XRF results will be reported to the NTGS in 2017. Official laboratory reports are available and were also reported for all laboratory assay jobs. No adjustments have been made to assay data reported by the laboratory, apart from the conversion to equivalent element or oxides values, the addition of elements or oxides as shown below, and as appropriate, the conversion from ppm values to % values. The reported laboratory vale is stored in the Company's database, except for assays that produced below detection limit values which are stored as negative detection value and reset to view on export as positive half detection value. Eu values were not reported by NTEL job EL03639 and have been recorded as NULL. Numerous oxides have been calculated from the reported

Criteria	Commentary
Verification of sampling and assaying	elemental values by using the conversion factors listed below. For example, the La_2O_3 value is La x 1.173.

Element	Oxide	Element to Oxide conversion factor
La	La_2O_3	1.173
Ce	CeO_2	1.228
Pr	Pr_6O_{11}	1.208
Nd	Nd_2O_3	1.166
Sm	Sm_2O_3	1.160
Eu	Eu_2O_3	1.158
Gd	Gd_2O_3	1.153
Tb	Tb_4O_7	1.176
Dy	Dy_2O_3	1.148
Ho	Ho_2O_3	1.146
Er	Er_2O_3	1.143
Tm	Tm_2O_3	1.142
Yb	Yb_2O_3	1.139
Lu	Lu_2O_3	1.137
Y	Y_2O_3	1.270
Al	Al2O3	1.889
Ba	BaO	1.117
Ca	CaO	1.399
Fe	Fe2O3	1.430
Mg	MgO	1.658
K	K2O	1.205
P	P_2O_5	2.291
Si	SiO2	2.139
Sr	SrO	1.183
S	SO_3	2.497
U	U_3O_8	1.179
Th	ThO_2	1.138

Selected elemental oxides or summed elemental/oxide products are exported as defined fields from the database and are clearly labelled to avoid any confusion. Elemental yttrium values are exported as Ytm to avoid any confusion with Y as Northing.

Criteria	Commentary
Verification of sampling and assaying	Summed rare earth values are calculated and exported from the database using the following formula: REE = La + Ce + Pr + Nd + Sm + Eu + Gd + Tb + Dy + Ho + Er + Tm + Yb + Lu TREE = La + Ce + Pr + Nd + Sm + Eu + Gd + Tb + Dy + Ho + Er + Tm + Yb + Lu + Y The calculated REE and TREE fields are now essentially defunct as Arafura mostly uses rare earth oxides for data analysis and reporting. Total rare earth oxide is the industry standard and accepted form of reporting rare earths. The TREO (Total Rare Earth Oxide) is calculated as follows: TREO = La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3 + Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3 + Y_2O_3. The 2016 XRF data was loaded into the database and stored as oxides as reported. Hence this data did not require an oxide conversion upon export. The Competent Person has used geological logs, assay results and selected geochemical ratios to determine and assess the REE mineralisation.
Location of data points	The grid system for Nolans Bore has historically been based on GDA94 and MGA94 Zone 53 coordinates. All drill collars up to 2004 were pegged by hand-held GPS or by compass and tape with an accuracy of about five metres prior to drilling. Almost all drill collars since 2005 have been accurately pegged by a professional Surveyor (Brain Blakeman Surveys) before drilling. All drill collars were capped and clearly labelled when completed and have been accurately re-surveyed after drilling by Brian Blakeman Surveys. All collars have been cut, capped and buried in accordance with rehabilitation guidelines. The Nolans Bore calibration test hole remains open. Directional down-hole surveys have been routinely determined by the relevant Driller at 30 or 40m intervals by either single-shot Eastman camera surveys or single shot electronic orientation probes. Continuous downhole surveys have been acquired by Borehole Wireline for almost all open holes. Most holes have been surveyed by Borehole Wireline to some extent with data collected and reported for more than 60% of the total drilled metres. All LAS data for all surveyed holes is loaded into the database and assigned a unique label based on the SITE_ID and the survey run number. The run number is sequential and based on the surveyed date. The results from all drillholes surveyed more than once have all been directly compared against each other and the data for calibration hole checked to ensure conformity and accuracy. This process led to the identification of systematic errors in the reported azimuth values for drill holes surveyed by two different probes in 2007/08 (NB0171-NB0315 inclusive). The surveys conducted in October-December 2007 require an average azimuth correction of -4 degrees (NB0171-NB0260). This error in azimuth was within the accepted 5 degree tolerance and was not identified until all data was loaded and thoroughly analysed in 2015. The downhole surveys acquired in February 2008 for holes NB0261-NB0315 are considered inaccurate and require a systematic average correction of -8 degrees. This azimuth error was initially identified in 2008 at the end of the survey period when the data was report however it was thought at the time that the error was around 6 degrees. The data was considered borderline at the time and the tool removed from site. The azimuth error in the February 2008 tool was accepted in former models because it was within the 10 degree tolerance limit set for successive azimuth picks between drillers surveys. As a result of the detailed analysis of all down hole survey data in 2015, the azimuth values for all holes were re-assessed and new azimuth values assigned based on prioritised data, as appropriate. As part of the azimuth revision and correction process the actual magnetic declination for the project area was also correctly applied for the first time (ie. 4.7 degrees, instead of 3.5 degrees which was uniformly applied since the project commenced). The surveys with azimuth corrections are noted in a

Criteria	Commentary
Location of data points	comments field in the database. The collar and the end of hole azimuths have been assigned based on the shallowest and deepest surveys, respectively. This level of accuracy is considered sufficient for the scope of the program undertaken. Brian Blakeman Surveys surveyed and prepared a Digital Elevation Model (DEM) for the Nolans Mineral Lease application area (MLA26659) in 2008. This DEM was amended to include all additional collars surveyed during 2011 drilling program. The surface RL for a number of wide-diameter holes and one RC hole (NB1100) outside of the Mineral Resource were originally set to a default of 660mRL and adjusted to match this new DEM. In 2015, a local metre-based grid system was developed for Nolans Bore. This local grid system is based on the key tie-points used to define the primary drill section (historically referred to as Section “O”) at Nolans Bore. This section has a bearing of about 145 degrees true. The local grid has been developed such that the original Section O is now set as 10,000mE and most of the NZ occurs north of 10,000mN. The NW end of Section “O” occurs at 318579.7mE 7502623.7mN in MGA94 Zone 53 coordinates which corresponds to 10000mE 10630mN in the local grid. The SE end of Section “O” occurs at 319579.9mE 7501201mN in MGA94 Zone 53 coordinates which corresponds to 10000mE 8890.898mN in the local grid. SURPAC 6.7.1 indicates the angular difference for the grid transform is 35.063 degrees. All locations were transformed into the local grid system using SURPAC v6.6 and the corresponding local coordinates extracted and added back into new local coordinate fields in database. Geological objects and surfaces were also transformed into the new grid system using a combination of SURPAC v6.6 and v 6.7.
Data spacing and distribution	The principal drilling grid is orientated at 145 degrees from true North. Drilling has a nominal 40m x 40m spacing over the main parts of Nolans Bore. Localised infill drilling to a nominal 20m by 20m spacing occurs in the central North Zone. The deposit has been systematically drilled to about 150-180m drilling depth in most places with systematic deeper diamond core drilling to 250m drilling depth on every second drill section across most of the deposit. Wider spaced RC drilling occurs in the peripheral areas. This data is complimented by drilling on six 100m spaced E-W drill sections in the Central Zone and targeted metallurgical and geotechnical across the main part of the deposit.
Orientation of data in relation to geological structure	The deposit has been systematically defined using drill holes inclined at -60 towards 145 degrees. The costeans also closely match this principal drilling direction which typically yields geological data at a moderate to high angle to the general strike and dip of the mineralisation in the North and Southeast Zones of the deposit. In 2011 it was realised that a massive body of mineralisation trends close to north-south in the Central Zone. Hence 24 diamond core holes were specifically drilled from surface on six 100-metre spaced east-west sections to resolve the geological complexity of the zone.
Sample security	The project area is remote and no unauthorised persons entered the property during drilling and sampling operations. Up to 2008, all RC assay samples were collected from the drill site and placed into sealed polyweave bagged lots of four to five samples. These were then placed in one tonne bulka bags which were temporarily stored at Aileron in readiness for transport by freight companies to NAL in Pine Creek. The bulka bags were loaded into locked shipping containers and transported to the laboratory for sample preparation. Drill core samples were logged, marked up and photographed at Aileron before the trays were palletised and transported to NAL in Pine Creek for SG determinations, cutting and sampling. Drill core assay samples were bagged and delivered directly to the preparation facility at NAL, Pine Creek. Assay sample pulps were dispatched in batches by courier from NAL to NTEL in Darwin. Back up master assay pulps were stored on pallets at Pine Creek until no longer needed. In 2009, drill core was logged, cut and sampled on site at Nolans Bore and assay samples placed in polyweave bags, stored in 205 litre steel drums and transported to NTEL in Darwin for sample preparation and analysis.

Criteria	Commentary
Sample security	In 2010, RC samples were placed in sealed polyweave bagged lots of four to five samples, placed in drums and transported to NTEL in Darwin for sample preparation and analysis. In 2011, RC assay samples were collected from the drill site, placed in sealed polyweave bagged lots of four to five samples and temporarily stored at onsite in a fenced laydown storage area adjacent to Arafura's preparation facility. Cut core samples were individually bagged and temporarily stored on pallets in the laydown area. RC and core assay samples were then "delivered" in batches to a designated area adjacent to the preparation laboratory. Prepared assay sample pulps were checked by the Competent Person or Senior Geologist, and blind standards were inserted before transporting to the Alice Springs and then on to NTEL in Darwin in sealed space-cases. Master pulps were stored in a locked shipping container adjacent to the onsite preparation laboratory. Chain of custody documentation and lists of all submitted samples was included with all assay jobs. Assay sample pulps have been recovered from the laboratory for safe long-term storage at Arafura's exploration storage facility in Darwin. All drill core has been transported to Darwin for safe long term storage.
Audits or reviews	Arafura's Geologists have reviewed and audited all geological data in the database. The Competent Person has randomly audited the reported assay data against that loaded in the database. The geology of all mineralised intersections in the model were reviewed as part of a new material type classification.

Section 2: Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	The Nolans Bore deposit is located wholly within Exploration Licence (EL) 28473 which is 100% owned by Arafura Resources Ltd. The deposit lies within the area covered by Mineral Lease (ML) application 26659 which is 100% owned by Arafura Rare Earths Pty Ltd., a wholly-owned subsidiary of Arafura Resources Ltd. Mineral Lease applications 30702, 30703 and 30704 have also been lodged over the proposed processing and camp site. These are also 100% owned by Arafura Rare Earths Pty Ltd. The tenement is situated on Pastoral Land and the known mineralisation spans the boundary between Aileron (PPL 1097) and Pine Hill (PPL 1030) Stations however all reported Mineral Resources are in Aileron. Arafura Resources has executed a Native Title Exploration Agreement with the Central Land Council (CLC) on behalf of the Native Title Holders for this tenement. The Nolans project is subject to Native Title Claims and Arafura is currently in the process of completing an Agreement with the Native Title Holders. Arafura was issued Sacred Site Clearance Certificates which provides clearance for the exploration and drilling activities conducted at Nolans Bore. Arafura Rare Earths has also applied for a water abstraction licence to support the development of this project. At the time of reporting, there are no known impediments to obtaining a license to operate in the area and the tenement is in good standing.
Exploration done by other parties	PNC Exploration (Australia) Pty Ltd conducted regional exploration programs in the project area in 1994-1996. They discovered the Nolans Bore prospect by following up a substantial airborne radiometric anomaly. PNC conducted ground radiometric surveys, and sampled and assayed the surface outcrops. No other work has been done at Nolans Bore by other parties.
Geology	The Nolans Bore REE-P-U deposit is a complex, 3D stockwork vein-style deposit which occurs in the Aileron Province of the Arunta Region in the Northern Territory, Australia. Isolated parts of the deposit crop out, but most of it is concealed beneath a thin layer of alluvial and colluvial transported cover. The deposit is characterised by massive fluorapatite mineralisation which ranges from discrete narrow fine-grained veins to wide intervals of massive coarse-grained breccias. The massive fluorapatite-rich rocks contain up to about 95% fluorapatite and typically contain abundant mineral inclusions of REE-bearing minerals, such as monazite group minerals, allanite, thorite and numerous other REE phosphates, silicates and carbonates. The fluorapatite itself contains variable amounts of REE but a higher proportion of REE is hosted in the fine grained mineral inclusions. The associated calcsilicate style of mineralisation can contain fluorapatite and other REE-bearing minerals and are typically dominated by pyroxene, amphibole, epidote-allanite, carbonate, quartz, plagioclase, zeolites, garnet, scapolite and titanite. The calcsilicate rocks are strongly associated with the massive fluorapatite mineralisation but tend to be lower grade where mineralised. The Nolans Bore mineralisation and its associated alteration are hosted by metamorphosed Palaeoproterozoic igneous and sedimentary rocks of the Aileron Province in the Arunta Region. Some of the country rocks also contain low grade REE mineralisation (e.g. the coarse-grained to pegmatitic granitoid commonly contains up to 0.3% REE and can locally exceed 1% REE, present as metamorphic monazite) but these rock types and grades markedly contrast with the typical Nolans Bore mineralisation and have not been included in the resource estimate.

Criteria	Commentary
Geology	The metamorphosed Proterozoic sedimentary and igneous rock units that have undergone high-grade metamorphism during the 1600-1525Ma Chewings Orogeny and are interpreted to be parts of the Aileron Metamorphics, Lander Rock beds and the Boothby Orthogneiss as mapped in nearby outcrops. Large intrusive bodies of coarse-grained to pegmatitic granitoid form a major component of the host country rocks at Nolans Bore. These units can be traced as coherent bodies (dykes and sills) and can be differentiated geophysically and geochemically from other country rocks and mineralisation. As such, these rocks form important marker units. The interpreted geological distribution suggests these granitoid bodies are mutually exclusive of mineralisation. However, relationships in drill core clearly indicate the mineralisation postdates the granitoids. The currently favoured geological model suggests that mineralisation is preferentially formed in strain zones within the country rock gneisses and schists adjacent to the more competent, massive coherent coarse-grained to pegmatitic granitoid bodies. This structural relationship was first proposed in 2006 and is still supported. Nolans Bore-type mineralisation and its associated alteration is geologically and geochemically distinct from the surrounding host rocks and clearly post-dates the high-grade metamorphism in the host rocks. Large parts of the deposit remain relatively undeformed however some (all) parts are overprinted by the Devonian-Carboniferous Alice Springs Orogeny. Cainozoic weathering and oxidation also occurs. Despite localized overprinting effects, the geochemistry of the mineralisation is very similar throughout, hence the mineralisation is defined by an enveloping surface which encompasses all Nolans Bore-type mineralisation at a cut-off of >0.5% TREO. Systematic drilling indicates the widespread presence of mineralised veins up to tens of metres in thickness and hundreds of metres in length, extending below 250 m drilled depth across parts of the deposit. The full extent of the deposit is yet to be outlined but deeper drilling has demonstrated mineralisation and alteration at about 490 m drilled depth in the central North Zone. Nolans Bore-type mineralisation and associated alteration has been recognised in surface exposures and drilling over an area of about 4 km x 3 km.
Drill hole information	This section is not relevant to reporting Mineral Resources. No exploration results have been reported in this release
Data aggregation methods	This section is not relevant to reporting Mineral Resources. No exploration results have been reported in this release.
Relationship between mineralisation widths and intercept lengths	This section is not relevant to reporting Mineral Resources. No exploration results have been reported in this release.
Diagrams	This section is not relevant to reporting Mineral Resources. No exploration results have been reported in this release.
Balanced reporting	This section is not relevant to reporting Mineral Resources. No exploration results have been reported in this release.
Other substantive exploration data	Arafura acquired a detailed, low-level airborne magnetic and radiometric survey over the Aileron-Reynolds project area in 2008. This survey covers the Nolans Bore deposit with additional adjoining airborne surveys acquired in 2011 and 2013. Arafura's proprietary airborne surveys are in addition to the publicly available airborne geophysical datasets. An airborne hyperspectral survey was done in the Aileron-Reynolds project area in 2008. This survey covers the Nolans Bore deposit and surrounds.

Criteria	Commentary
Other substantive exploration data	Arafura acquired detailed World View 2 satellite imagery (0.5m pixel resolution) over the Nolans Bore project area in 2012. Additional regional and less detailed SPOT5 satellite imagery (2.5m pixel resolution) was also purchased over the project area in 2012. Arafura has recently acquired additional adjoining detailed World View imagery cover the proposed developments in the Nolans Project area. The acquisition of the above satellite data has greatly improved the Google Earth Imagery over the project area. More recent publically available Google Earth Imagery is now available over parts of the project. Arafura has collected extensive geological, geotechnical and metallurgical data from the Nolans Bore deposit and surrounds in support of its exploration and resource definition programs. Arafura has collected a substantial biogeochemical dataset over the Nolans Bore deposit and surrounds and is using this to assist in targeting exploration in areas under cover (eg Mulga prospect ASX: ARU 8/11/2013). Arafura has discovered substantial ground water resources to the south and southwest of Nolans Bore and has applied for a water abstraction licence (ASX: ARU 22/10/2014).
Further work	At this stage no further resource definition drilling is planned at Nolans Bore. Grade control and sterilisation drilling programs are planned. Detailed gravity and magnetic surveys are planned with modelling to investigate the depth potential of the deposit. Additional waste rock characterisation and modelling is planned in line with Arafura's Radiation Management Strategy and the proposed development of Nolans Bore. Geological mapping and prospecting is planned at exploration targets in Arafura's Aileron-Reynolds land package

Section 3: Estimation and Reporting of Mineral Resources.

Criteria	Commentary
Database Integrity	All relevant data is stored in Arafura's SQL Geobank database. This database was originally developed and populated in 2009/10 in conjunction with Micromine. Micromine assisted Arafura in the development of its relational database structure with internal checks and validation procedures as per industry standard. Primary data sources were used during the initial database load to minimize transcription or keying-in load errors. The data was audited during the initial load stage. A small number of load issues have since been discovered and rectified. Prior to this SQL database, all digital data was stored in various master spreadsheets. Ongoing but minor structural changes have been made to the database since its inception. These changes are mainly due to the development and addition of new fields or data tables. Only trained personnel approved by Arafura's database administrator can add or edit data, and all new data is audited on import to ensure integrity. The database has routinely scheduled monthly backups and all data entries or modifications are date stamped with the responsible person's name. Additional backups are done as required to ensure the overall long-term data integrity and security. Copies of critical backups are kept at both offices, and off-site. All data is digitally captured and retained in the database and can be viewed. Exported data is prioritized as and where appropriate such that only prioritized data can be used for certain fields. For example, numerous holes have been surveyed more than once but only the highest ranked "priority" data is exported. Extracted database tables and a Microsoft Access database snapshot for the current estimate is stored digitally in the Nolans project directory on Arafura's server as a permanent record of the data used in this estimate. All RC logging data and all geological summaries for the RC and drill core have been transferred to digital form and loaded into the database. All drillhole information was originally logged directly onto paper logging sheets by the geologist, then scanned and securely filed or stored digitally in the Nolans Bore project directory on Arafura's server. The original paper logsheet, and the scanned copy, are available for all drill holes and have been used to validate and cross-reference audits, edits and geological reviews. Extensive geological descriptions were allowed for and acquired by most geologists on the drill core logsheets. Concise lithological summaries have been developed for the drill core following geological revision, synthesis and recoding with standardised lithological information. These have been entered into the database instead of the more extensive entries recorded on the paper log sheets. The digital capture process involved data entry using specifically formatted spreadsheets with drop-down lists and built-in validation checks to minimize transcription and keying load errors. The database administrator has carefully checked and audited all digitally captured data. Arafura have conducted a number of in-house workshops to review and re-interpret geological summaries for each drill hole. In 2011, geological summaries were prepared by the responsible geologist on the formatted spreadsheet, and reviewed and checked by the Arafura team for internal consistency. Earlier drillhole summaries used in the previous resource estimate were reviewed in 2011 to ensure internal consistency across all programs. All geological summaries were reviewed audited for consistency by Arafura's database administrator in 2011. All logging and survey information was reviewed by the responsible rig Geologist prior to the Senior Geologist and team review. The data was again reviewed by the database administrator prior to the final data load into the database. The rig Geologist is the first to validate of the field data by the reviewing the geological log and chips checking sample ID, missing data entries, obvious logging errors or atypical surveys or radiometric readings. The next stage occurs as part of the assay sample selection process by the onsite Senior Geologist or Competent Person. The third stage occurred during the data entry and load supervised by the Database Administrator. The fourth stage occurred during the review and synthesis of the geological summaries when all data was exported from the database and reviewed prior to the development of the geological model and mineral resource estimate. During this stage geological summary is again checked

Criteria	Commentary
Database Integrity	for its integrity against its associated downhole logging data and the drill chips, core photographs or drill core (if required) to ensure the validity of the data. Sample identification numbers are all unique. Routine sample number series differ to field duplicate and any supporting field check samples. Certified and Internal Standards and blanks are assigned unique numbers in the database to match their assay job number. Since 2010, all assay samples have been dispatched and receipted using the Sample Tracker module in Geobank. This ensures all assay results despatched to and received from the laboratory are accounted for and loaded against the correct sample interval. All specifically dispatched samples have been specifically receipted. Assays within the database are accepted as final once they passed the Competent Person's (Kelvin Hussey) review. Assay samples prior to 2009 were re-dispatched and re-receipted as part of a bulk load soon after the database was developed. A small number of load errors identified during the previous resource estimate were corrected in 2014. No other data load or export issues have been detected. No assay data has been keyed-in. Assay loads are validated by manually checking the actual reported results of at least two samples per assay job on the laboratory assay certificate against the electronic results loaded and stored in the database. This ensures the electronic results in the loaded data fields matches the reported values for each job and prevents load errors. All downhole probe logging results are loaded into the database using LAS data files supplied by Borehole Wireline. This includes all revisions and corrections. The database has specific views and tables that show 10m survey data, as well as density and gamma data averaged over one metre-intervals using database routines. The LAS survey data is ranked as the highest priority azimuth and is used instead of the driller's single shot surveys. The driller's single shot survey is recorded in the database and are used where LAS survey data is not available, providing the single shot survey records passes within tolerance limits. The combined survey data is checked for azimuth and inclination deviations >5 degrees. Excessive deviations are considered unlikely and not accepted. The survey data was loaded in SURPAC for 3D spatial viewing and verification to ensure the conformity of the surveyed drillhole path. There is clearly some localised magnetic interference evident in the downhole azimuth data. Unrealistic localised azimuth deviations are omitted from the 10m picks or replaced by more realistic values at different locations based on the Competent Person's assessment of the continuous 5cm LAS data. The chosen survey data is considered the best currently available however gyroscopic downhole surveys may improve the survey accuracy in some areas. GeoBank has internal validation procedures that must be met when new data is loaded into database. The database is routinely backed up and all entries and modifications to the database are date stamped with the responsible person's name. Export rules have been developed and verified to ensure that only the designated data is exported. The Competent Person checked the data for missing intervals, missing samples, downhole survey deviations of ±10º in azimuth and ±5º in inclination after loading into SURPAC.
Site Visits	Kelvin Hussey is a full time employee of Arafura Resources and regularly visits Nolans Bore during site operations.
Geological interpretation	Other styles of REE mineralisation were considered however many do not have the same geological host rocks, alteration styles or mineralogy as Nolans Bore. Structurally controlled vein deposits show similarities to Nolans Bore. The mineralisation is hosted within structurally controlled veins and breccias, with localised structural reworking and overprinting alteration resulting in some geological complexity. The geometry of the deposit is 3D and complex and typically shows a close spatial relationship to sheared contacts to adjacent coarse-grained to pegmatitic granitoids/orthogneisses.

<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td></td><td>Geological observation has underpinned the geological model and the resource estimation. Rock type, mineralogy, alteration style, geochemistry and radioactivity were used to define the geological boundaries. The geological model was developed as an iterative process of checking against logging, geological summaries, photography, radiometric data, geochemistry and re-assessing drill core and drill chips where necessary. Interpretation of the massive pegmatitic units and the adjacent mineralised bodies are considered important aspects of the deposit's geological model.</td></tr>
<tr><td>Geological interpretation</td><td>The observations regarding the geological model and the extent of the interpreted mineralised envelope are typically robust. However parts of the Southeast and Southwest Zones are less certain geologically given the small amount of near surface drill core and the wider spaced drilling in this area. The mineralisation and its associated alteration has a characteristic and uniform REE signature which together with P, U, Th and Sr clearly differentiates it from all surrounding host rocks. The pegmatitic granitoid units typically contain up to 0.3% TREO although locally they can exceed 1% TREO. The REE, Th, U and P signature of the pegmatite units are distinctly different from typical Nolans Bore type mineralisation and unless the pegmatite is internal waste or overprinted by Nolans Bore type alteration, it has been excluded from the mineralised bodies in the geological interpretation.

All geological units were revised and updated in 2015. The geological model for Nolans Bore is subdivided into the following geological units:
• MIN;
• RAD;
• PEGMATITE;
• GNEISS;
• SCHIST; and
• SOIL.

Surfaces were also re-modelled for
• Topography
• Standing Water Level
• Base of complete oxidation
• Top of Fresh

Apart from SOIL, all geological units are widespread and occur throughout the deposit at all depths. The RAD unit was modelled in 2015 as an all-encompassing interconnected unit to quickly capture all potentially radioactive material at Nolans Bore for EIS purposes The RAD unit includes all geological rock types, including MIN, that were considered potentially radioactive based on assays and radioactivity measurements. Narrow mineralised drill intersections with no geological support in adjacent holes which are not included within a MIN object, and therefore not classified as Mineral Resources, are in almost all cases been captured within RAD. The units outside of the RAD DOMAIN can be regarded as benign non-radioactive material. RAD was initially modelled because natural material which has an activity greater than 1Bq/g is classified as Naturally Occurring Radioactive Material (NORM). The RAD unit is no longer utilised and is now essentially defunct although it still serves as an overall guide. All host rock units (SCH, PEG and GNE) have been independently modelled in the current model. The zones of NORM within the host rocks are due to either unclassified resources (ie. narrow or discrete bodies of mineralisation) or to natural variations in the host rock itself. To a large extent, the schist (SCH) and pegmatite (PEG) units mostly represent well-foliated and very coarse-grained equivalents, respectively, of the gneisses (GNE) which dominate the region. The SOIL, SCH, PEG and mineralisation (MIN) bodies have been individually digitized where appropriate. The remainder of the country rock within the model is assigned to GNE.</td></tr>
</table>

Criteria	Commentary
Geological interpretation	The MIN bodies outlined in the current geological model are numbered into DOMAINs and ZONECODEs (see Table below). To aid in the analysis and estimation process, all 138 MIN DOMAINs have been subdivided into eight distinct ZONECODEs based on their geographic location and geological character, chemistry, OXSTATE and size. This is the same scheme as used for the 2015 model, except for zc31 and zc32 which have been merged into zc30 for the 2017 model. The number of assay samples occurring within each ZONECODE was considered for each geographical grouping with a lower limit of no less than 300 composited samples applied to each for statistical purposes. Where possible large DOMAINs are subdivided using their OXSTATE. This was done to essentially limit smearing between fresh and oxidised material, and was considered geologically important in the North and Central Zones. For example, DOMAIN 101 is a large inter-connected object spanning most of the North Zone and contrasts with the other smaller DOMAINs in the North Zone that are often not as deeply weathered. DOMAINs 143 and 144 have been specifically differentiated from DOMAIN 101 using an irregularly shaped hard geological boundary. The oxidised mineralisation contained within DOMAINs 143 and 144 is characterised by a different P/REE ratio and contrasts with the adjacent and surrounding geology in DOMAIN 101 (ZONECODE11). It was considered important to develop a robust hard boundary for this geochemically different material to limit smearing of grade across this geological boundary. A very small part of DOMAIN 335 also contains some mineralisation similar to that in DOMAINs 143 and 144 but the volume is way too small to be treated separately.

Mineralised DOMAINs and ZONECODEs used in the 2017 Mineral Resource Estimate.

LOCATION	UNIT [1]	ZONECODE	DOMAIN	OXSTATE
North	MIN	11	101	Oxide/mixed
North	MIN	12	101	Fresh
North	MIN	13	102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142	All
North	MIN	14	143, 144	All
Central	MIN	21	201, 202, 203, 204, 205	Oxide /mixed
Central	MIN	22	201, 202, 203, 204, 205	Fresh
Southeast	MIN	30	301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 314, 313, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357	All
Southwest	MIN	40	401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432	All

[1]All MIN objects are clipped to the base of SOIL.

Criteria	Commentary
Geological interpretation	The extents of the geological model are constrained by drilling and costeaning data. Geological boundaries are extrapolated a uniform 20m from known intersections following the same geological trend. This is in line with the industry standard of extrapolating half-principal drill spacing. This methodology also provides an equal representation of both mineralisation and waste rock volumes. Given the absence of uniform deeper drilling on all sections, geological boundaries are sometimes interpolated between every second principal drill section at depth, but only where the model is supported across multiple drill sections. This interpolation methodology is geologically justified for this deposit type, and removes unrealistic zig-zag shapes in the geology at depth. Key factors that are likely to affect the continuity of grade are: • The inherent variability of brecciated rocks. Breccia characteristics can change rapidly on a centimetre to metre scale. • The inherent variability of veins. The continuity and thickness of veins can change along strike. The veins can show sharp but irregular boundaries. The vein intensity and amount of altered host rocks included with the mineralised vein system can change. Overprinting structures can disrupt or influence the continuity of the mineralised system.
Dimensions	The Nolans Bore mineralisation is mostly concentrated in an area of about 1,100m north-south by 1,500m east-west. Systematic drilling has typically confirmed down dip extensions from the surface or near surface down to vertical depths of 215m, with many veins and zones remaining open at depth. The North Zone has a strike length of around 1,000m and local deep drilling has demonstrated mineralised veins and bodies extending from surface or near surface down dip to a vertical depth of about 400m in the central parts of the North Zone. The main mineralised lodes in the North Zone collectively trend slightly north of east with the main lodes predominantly aligned with the strike direction at approximately 060º, dipping steeply to the north. The main mineralised lodes in the central zone strike approximately north-south and have a strike extent of about 500m. Parts of the North and Central Zones have mineralised bodies that are more than 50m thick. Mineralised lodes in the southeast zone are up to 350m long and defined into two broad zones dominated by a southeast to northwest strike of approximately 330º and an approximate east-west strike of approximately 075º to 080º. All dips are steep to sub-vertical and are to the north-north- west in the north and south-east zones and are a combination of east and north-north- east dips in the central area.
Estimation and modelling techniques	Access database tables and fields were mapped in SURPAC and cut up into DOMAINs and ZONECODEs using the geological and oxidation state boundaries as hard boundaries. The mineralisation was then flagged for DOMAINs, ZONECODEs, OXSTATE and INSITU. Assay data was composited into 2m intervals for statistical analysis and estimation purposes. The volume model was developed based in the local grid coordinate system shown below and was developed such that its extent exceeds the defined Mineral Resources and the topography. The blocks are aligned to the principal drilling section direction and the local grid. Their parent size is equal to half of the systematic deposit-wide drill spacing (ie. blocks are 20m x 20m in X and Y whereas the principal drill spacing is nominally 40m x 40m). This block model therefore adequately accommodates the infill 20m x 20m drilling in the North Zone and the more widely spaced 40m x80m spaced drilling at depth. This model has the same dimensions and extents as the previous 2015 model. The volume block model was created using the same wireframes for the geological units as used for sample flagging. Block model volumes and wireframed volumes are within acceptable tolerances.

Criteria	Commentary
Estimation and modelling techniques	(table below)

Axis	Minimum coordinates (local grid m)	Maximum coordinates (local grid m)	Parent Cell Dimensions (m)	Number of Parent Cells	Number of Splits	Smallest sub-cell Size
X	8900	10760	20	93	4	5
Y	9000	10700	20	85	4	5
Z	300	730	5	86	4	1.25

Density was estimated by ID^2 using SURPAC version 6.7.1. To support this density estimate, the number of informing values, average distance and the estimation pass is also recorded as an attribute in the block model. Geological and OXSTATE boundaries were used as hard boundaries to select all informing density data. A series of three successive estimation passes were run for each oxidation state in each ZONECODE, expanding the search distance after each pass. Within the MIN ZONECODEs, the data was selected using the 3D search ellipse parameters that were used to inform the grade estimate. The initial search distance was set to two-thirds of the maximum axis, and expanded 2.5 and four times, for the second and third passes, respectively. Within the host rocks (SCH, PEG and GNE), searches were isotropic and utilised 40m, 100m and 200m search radii for each successive pass. In all cases, a total of 10-30 informing values were used for the first and second passes, and this was reduced to 5-30 in the third pass. A maximum of 15 values were allowed per drill hole for all geological units. These criteria effectively allow the estimated density to be informed by the nearest data coinciding with the local and adjacent blocks in areas of continuous probe data. The density estimate is considered more likely to represent the local variations within the deposit than averages, and especially in the first pass estimate where continuous downhole density probe data exists. Average density values for each geological unit, ZONECODE and OXSTATE were assigned in a fourth pass if a value was not estimated during the third pass. The density estimate for the 2017 Mineral Resource estimate is consistent with that of the former model.

Grade estimation was completed using Ordinary Kriging (OK) for the identified Mineral Resources, using SURPAC version 6.7.1. Additional attributes which are pertinent to the OK estimation have also been populated for each block. The potentially economic lanthanum, cerium, praseodymium, neodymium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium and yttrium are summed as standard oxides and to obtain TREO. TREO, P_2O_5, U_3O_8, ThO_2 and the individual rare earth oxides have all been estimated by OK. TREO, P_2O_5, U_3O_8, ThO_2 have been estimated into the country rocks using ID^2. The individual rare earth oxides have not been estimated in the country rocks. SiO_2, Al_2O_3, Fe_2O_3, MgO, CaO, K_2O, SO_3 and LOI have been estimated into the block model using ID^2 for all DOMAINs using their OXSTATE as a hard boundary. The ID^2 estimates utilised the same search ellipses for their respective ZONECODEs within the mineralisation. Search ellipses were isotropic in the country rocks using 20-40 samples and 40, 100 and 200m search distances for passes 1,2 and 3, respectively. To complete the estimate, an average or median value was applied in a fourth pass in the host rocks.

Composite statistics for the primary variables for estimation TREO, P_2O_5, U_3O_8, ThO_2 and all individual rare earth oxides were analysed for statistical relationships and to determine if any domain had unusually high-grade outliers that would need to be top-cut. The composite statistics indicate the data in each ZONECODE are strongly to very strongly correlated. The ZONECODEs typically have very low coefficients of variation,

Criteria	Commentary
Estimation and modelling techniques	usually less than 1.0. No ZONECODE had any values that necessitated top-cut strategies for TREO, P_2O_5, U_3O_8 or the individual rare earth oxides. ZONECODE 14 contains 8-10 elevated ThO_2 values that are clear statistical outliers, and a few borderline high U_3O_8 values. To limit the impact of these high values to the estimate, at top-cut of 2% ThO_2 was applied. This top-cut value approximately equates to the top 5% of the sample population. No top-cut was applied to the elevated U_3O_8 values as these were considered borderline but statistically acceptable. No top cut was applied to other values in this ZONECODE. Variography was performed to determine the best estimation strategy for each ZONECODE. Downhole and omni-directional variography was performed on the three main variables (TREO, P_2O_5 and U_3O_8) and ThO_2 in ZONECODEs 11, 14, 21 and 30. However due to similarities of these variograms and the strong to very strong correlation between the main variables, 3D anisotropic variograms were only modelled for TREO. These are the only areas with sufficient data to generate robust 3D variograms. The remaining mineralisation ZONECODEs use the most appropriate variogram from the same geological zone and lithology, scaled to the local variance. No variography was performed on the waste domains. All variography was completed in three-dimensional space, to allow for any plunge component to be modelled. The maximum continuity directions were steeply down-dip for ZONECODE11, steeply inclined for ZONECODEs 21 and 32 and almost horizontal for ZONECODE14. These directions are consistent with anticipated geological search parameters. The near horizontal search ellipse for ZONECODE 14 is consistent geological features observed in the costeans and the supergene nature of the mineralisation. Downhole variograms generally show low to moderate nugget values, reflecting the generally low coefficient of variation values seen in the descriptive statistics. All grades were estimated into parent cells, with all sub-cells receiving the same grade as their parent. Cell discretisation was set to 5, 5, and 3 in the cell X, Y and Z directions respectively. Constraints and parameter files were created for search, variogram and estimation parameters. Initial search ellipses were set to the directions and ranges of the respective variograms. These were tested by iterative means and the final ellipses were chosen to be approximately two-thirds the longest variogram ranges in each direction, with the longest axis (for the anisotropic searches) being down-dip or steeply inclined within the strike of the major continuity direction for most ZONECODEs. Each OK grade estimate is performed in a series of three passes. Blocks not estimated in the first pass were estimated using an expanded search ellipse for the second pass and likewise for the third pass. The expansion factors are times 2.5 for the second pass and times five for the third pass. The maximum number of composite samples allowed for the first pass estimate ranges from 30, with a minimum of ten. The third pass uses a maximum of 30 samples and a minimum of 2-5 depending on the ZONECODE. ZONECODEs 11 and 12, and 21 and 22, were estimated using hard boundaries to limit smearing of grades between different OXSTATEs. A small number of blocks were not estimated and fourth pass was required in ZONECODE 22. This pass was expanded to ten times and was considered necessary to limit smearing and to cater for the complex three-dimensional nature of the depth to the top of fresh rock in this area. During the OK estimation, kriging weights were allowed to be negative and a maximum of six samples were allowed per drillhole. The variogram and search parameters for each estimated ZONECODE domain used the TREO% variables from the initial estimate. This strategy is sensible as, TREO, P_2O_5, U_3O_8, ThO_2 and the individual rare earths are all in general strongly to very strongly correlated. TREO, P_2O_5, U_3O_8, ThO_2 were estimated first. The individual rare earth oxides were then estimated and summed using a formula written into the block model. The TREO value and the summed TREO value differ slightly due to the number of significant figures used in the database export. This difference is insignificant and essentially a mathematical artefact of rounding. The geological interpretation was used to define the mineralised domains. The oxidation state was also used to define hard boundaries where substantial data existed in the North and Central Zones. The mineralised domains were used as hard boundaries to select sample populations for data analysis. The same geological boundaries were used for estimation, however both hard and soft domaining strategies were used.

Criteria	Commentary
Estimation and modelling techniques	The final model was validated both visually and statistically. The model was compared with drillholes and wireframes on sections to check for errors. Block model volumes were also cross-checked against wireframe volumes. Plots were produced comparing the estimated model grades (TREO%) with the composite grades in a series of slices through the model and data. The model profiles are generally slightly smoother than the composite profiles (ie. show less variance) but are usually still constrained between the extremes of the composite data. This is expected, as the estimation process normally selects multiple data in overlapping search ellipses and smooths the more variable drillhole data by placing one discrete value per parent cell volume. All of these models had hard boundaries so that no grade from the mineralisation was smeared into the background waste domains. Elevated grades within the waste rock domains are due to unclassified resources within the waste rocks and the natural variations in the waste rock itself.
Moisture	All tonnages are estimated on a dry basis.
Cut-off parameters	The geological model was developed in 2015 using all available geological data and uses a 0.5% TREO lower cut-off grade. This geological model differentiates typical Nolans Bore-type mineralisation from the pegmatitic granitoids in the area which typically assay up to about 0.3% TREO. The resources were estimated using the wireframed geological model and a 1% TREO lower cut-off.
Mining factors or assumptions	It is assumed that the deposit will be mined using traditional drill and blast open-cut methods.
Metallurgical factors or assumptions	Metallurgical information is based on an extensive dataset of various material types sourced from 2004-2011 exploration programs at Nolans Bore using representative RC drilling residues and HQ3 drill core intervals, plus larger bulk samples obtained from two shallow (2.5 metre deep) costeans and deeper material collected from wide-diameter auger/core holes (7-64.5m deep). The sampled material is considered representative of the initial production from the mine. Initial variability and comminution studies have been conducted on representative intervals using RC and drill core samples. Further work is in planned. Qualitative mineralogical and geochemical analysis of bulk samples previously submitted for metallurgical test work has been completed. This assessment has essentially addressed all material types and a range of head grades typical of Nolans Bore type mineralisation. A comparative detailed study has been completed on 21 thin sections selected from representative type examples in drill core with supportive and less detailed microanalysis conducted on about 50 other thin sections. Arafura has designed and developed a flowsheet to process Nolans Bore-type mineralisation and generate REO products that meet customer specifications and requirements. Arafura is currently piloting its flowsheet. Lab scale and pilot metallurgical test work programs using various material types have demonstrated that Nolans Bore type mineralisation can be beneficiated into a phosphate-rich rare earth mineral concentrate. Phase 1 (beneficiation) and Phase 2 (phosphate extraction- PLR and RE recovery precipitate) have been completed but some results are still pending. All mineralised material types can be processed using Arafura's flowsheet however rare earth and phosphate recoveries depend on the minerology of the various material types. A thorough review and analysis or material types was done in 2016. This analysis also utilised 3500 new

<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td>Metallurgical factors or assumptions</td><td>whole rock XRF analyses and involved a detailed systematic review of all assay sample intervals within the main part of the deposit. The main mineralised material types of the 2016 re-classification scheme are shown below. Material types where a high P-REE recovery is considered likely in the current flowsheet have been grouped into PAPLP. Quantities of MAT2016 type 3A have been included in Arafura’s test work however this type has been separated out as group NP1 given it may have some performance issues. Based on petrological studies and test work material types with significant epidote-allanite are expected to have lower REE-P recoveries in a phosphate concentrate. Hence these have been grouped and modelled as NP2. The remainder of the material types have been modelled as Waste. The Fe_2O_3 and Al_2O_3 grades have also been modelled because piloting test work has indicated that these may impact recoveries.

<table>
<tr><th>MAT2016 classification</th><th>Description</th><th>High P-REE recovery considered likely in phosphate con</th></tr>
<tr><td>1</td><td>Massive cream/green apatite with<2% allanite (<30% clay and <25% calcsilicates)</td><td>yes</td></tr>
<tr><td>2</td><td>Massive brown apatite with<2% allanite (<30% clay and <25% calcsilicates)</td><td>yes</td></tr>
<tr><td>3A</td><td>Fine grained cheralite, monazite and crandallite-rich mineralisation</td><td>possible</td></tr>
<tr><td>3B</td><td>>30% clay and kaolin with oxidised apatite, cheralite, monazite</td><td>yes</td></tr>
<tr><td>4A</td><td>Apatite with 2-10% allanite</td><td>yes</td></tr>
<tr><td>4B</td><td>Apatite with >10% allanite</td><td>no</td></tr>
<tr><td>5A1</td><td>Apatite with <10% allanite and >25% OH-free calcsilicates (predominantly clinopyroxene)</td><td>yes</td></tr>
<tr><td>5A2</td><td>Apatite with <10% allanite and >25% OH-bearing calcsilicates (predominantly epidote and amphibole)</td><td>no</td></tr>
<tr><td>5B2</td><td>Apatite with >10% allanite and >25% OH-bearing calcsilicates (predominantly epidote and amphibole)</td><td>no</td></tr>
<tr><td>6B</td><td>>30% clay, apatite with allanite and >25% calcsilicates</td><td>no</td></tr>
</table></td></tr>
<tr><td>Environmental factors or assumptions</td><td>Baseline and environmental studies for mining are well advanced. Arafura submitted its draft EIS in 2016. No significant environmental risks or issues have been identified which would be detrimental to the extraction of this mineral resource.

Arafura has discovered and pump tested a substantial aquifer to the south of Nolans Bore. Arafura’s modelling indicates this ground water resource has the potential to supply to required water volumes for the life of the planned operation. Arafura has conducted environmental studies on the impact of abstracting water from this Cainozoic basin and has recently applied for a Water Extraction Licence (ASX: ARU 22/10/14).</td></tr>
</table>

Criteria	Commentary
Bulk density	The density data in this model is the same as that used to inform the previous density estimate. A minimum of one or two representative drill core samples were typically selected from each core tray in mineralised zones while one sample per two core trays was selected for country rock intervals. A total of 7725 physical determinations were done on drill core using the Archimedes' principal, weighing in air and then in water. Friable and porous samples were weighed wet inside cling film with excess air removed to ensure the sample did not fall apart and to account for void space. Density was also determined using a calibrated downhole geophysical gamma-density probe. Downhole probe data was collected in 5cm increments and the average for each metre interval exported from the database and loaded into SURPAC for spatial analysis and estimation. Probe densities were acquired in representative holes selected by the Competent Person during 2007/08 and again in 2011. Density probe values are calibrated for measurement in water, and hence those values reported above the Standing Water Level were filtered out in Surpac and not used in the analysis and estimation process. The density value for the lowermost surveyed metre or so can also be erroneous due to calliper errors and the settlement of debris and fines. Hence the lowermost value was assessed for each downhole survey and omitted if it appeared inconsistent with the geology and the above values. In holes with repeat downhole density surveys, the 2011 values are typically given priority although some deeper 2007/08 surveys were used. A total of 16,613 x1metre-averaged density probe values are considered valid and available for use at Nolans Bore. The density values from 2007/08 downhole surveys were reprocessed by Borehole Wireline in 2015 using 2011 calibrations. This re-calculation was necessary as the original reported values were consistently too high in mineralisation and too low in non-mineralised rocks. Comparative analysis demonstrates that the re-calculated 2007/08 data closely match the 2011 density probe values in holes that were re-surveyed. Detailed analysis shows the density probe values closely matches the drill core determinations. Despite top and bottom of hole filtering, six 1m density probe values have averages less than one. Density values of less than 1t/m3 are considered unrealistic and have been removed. These unrealistically low values are surrounded by valid data and may reflect rare cavities encountered during drilling in this area. Furthermore, density values approaching an SG of 1 have been measured in drill core, and hence the lower density probe values that are just above an SG of 1 are accepted. Whether these lower density values are included or excluded from the informing dataset has no material impact on the estimated density. Analysis of the density database for Nolans Bore shows slightly different distributions for the two methods. This is because the drill core was focussed in areas with more mineralisation whereas the RC drilling included a greater component of unmineralised country rock. This result is not surprising and reflects real spatial and lithological differences at Nolans Bore. The quantum and distribution of density data is enough to provide a realistic estimation of density at Nolans Bore. The combined density data was cut with mineralised wireframes for ZONECODE and OXSTATE. About 28% of the informing density values are within MIN and the breakdown is show below.

Criteria	Commentary
Bulk density	(table below)

ZONECODE	OXSTATE	Number	Min	Max	Mean
11	Oxidised	482	1.20	3.21	2.35
11	Transitional/mixed	1781	1.68	3.29	2.59
12	Fresh	321	1.29	3.24	2.85
13	Oxidised	15	2.23	3.05	2.50
13	Transitional/mixed	149	1.31	3.11	2.59
13	Fresh	107	2.24	3.21	2.74
14	Oxidised	155	1.26	2.60	2.01
21	Oxidised	273	1.27	3.22	2.38
21	Transitional/mixed	753	1.51	3.43	2.88
22	Fresh	840	2.00	3.73	3.02
30	Oxidised	74	1.82	3.15	2.60
30	Transitional/mixed	810	1.76	3.25	2.72
30	Fresh	832	1.69	3.80	2.93
40	Oxidised	14	2.29	2.99	2.69
40	Transitional/mixed	108	1.79	3.13	2.68
40	Fresh	131	2.42	3.26	2.81
GNE	Oxidised	1789	1.20	3.95	2.32
GNE	Transitional/mixed	11106	1.05	3.58	2.55
GNE	Fresh	9017	1.25	4.10	2.67
PEG	Oxidised	292	1.27	2.83	2.32
PEG	Transitional/mixed	2895	1.49	3.53	2.51
PEG	Fresh	2302	1.25	4.10	2.56
SCH	Oxidised	69	2.03	2.90	2.41
SCH	Transitional/mixed	1215	1.68	3.29	2.60
SCH	Fresh	1136	1.34	3.25	2.66

Criteria	Commentary
Classification	Classification for Nolans Bore is based on the continuity of geology, mineralisation and grade, using measures such as the quality of the geological model, drill spacing, number of informing samples, average assay sample spacing, density data and quality, variography, and estimation pass and statistics. The 3D search parameters used in this estimate have steep or inclined down-dip orientations for the majority of the mineralisation. Nolans Bore is systematically drilled on a nominal 40 m x 40 m drill hole spacing on the local grid with localised drilling at nominal 20 m x 20 m spacing in the central North Zone. In general, the estimates have been classified as Measured Resource in the central North Zone where closest spaced drilling occurs and the confidence in the estimate is high. The outer peripheries and deepest parts of the modelled deposit are generally classified as Inferred Resource where there is lower confidence in the estimate. This lower confidence corresponds to systematic 40 m x 40 m drill hole spacing at surface and at depth some parts are 40 m x 80 m. The addition of east-west drilling in the Central Zone and targeted geotechnical drill holes has provided extra information in different drilling directions which has allowed some parts to be classified as Indicated Resources corresponding to moderate levels of confidence in the estimate. The peripheral parts of the deposit are poorly supported by drilling and these areas have not been classified as Mineral Resource. Following the estimation process, the Mineral Resource was assessed using a number of iterative measures to develop an overall classification strategy. Following this, an initial classification wireframe was constructed for Measured and Indicated using a series of 20m-spaced vertical sections through the block model. Blocks inside the Measured wireframe were assigned to Measured. Blocks that were inside the Indicated wireframe, and not assigned to Measured, were assigned to Indicated. Mineralised blocks outside of the Indicated wireframe were then assigned to Inferred. Following this initial assignment of categories, blocks on the margins of each category were inspected and re-evaluated on a section by section basis and in 3D, and resource categories manually adjusted for each block where appropriate based on geological continuity and estimation data. Most blocks within the central part of the North Zone were filled during the first estimation pass with the maximum number of informing samples. This coincides to an area of more closely spaced drilling and is classified as Measured Resources. Parts of the Central and Southeast Zones were also filled during the first pass of the estimation process, however these zones were not classified as Measured because they lacked the geological confidence and continuity observed in the North Zone. Most of the remainder of the North, Central and Southeast Zones were filled during the second estimation pass. Accordingly a large portion of these blocks were classified as Indicated Resources. Parts of the Southeast and most of the Southwest did not fill during the second estimation pass and have been classified as Inferred. Even though parts of the Southwest Zone were filled during the second pass, all of the Southwest was classified as Inferred because the blocks filled in the second pass formed an isolated body. Furthermore the estimation search criteria were borrowed from parameters developed using data in the Southeast Zone and may not be suited to higher confidence assignments in a different zone. The Competent Person believes that the classification appropriately reflects its confidence in and the quality of the grade estimates.
Audits and reviews	The Mineral Resource has not been audited.
Discussion of relative accuracy/confidence	The Mineral Resource classification applied to Nolans Bore implies a confidence level and level of accuracy in the estimates. These levels of confidence and accuracy relate to the global estimates of grades and tonnes for the deposit. No production data is available as mining has not commenced at the date of this report.