Rio Tinto

Notice to ASX

Changes to Pilbara Mineral Resources

28 February 2019

Rio Tinto's 2018 annual report, released to the market today, includes significant changes in estimates of Mineral Resources for Pilbara iron ore deposits in Western Australia, compared to the previous estimates in the 2017 annual report.

The updated Mineral Resources are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 (JORC Code) and the ASX Listing Rules. Supporting information relating to the changes is set out in this release and its appendices. Mineral Resources are quoted on a 100 per cent basis. Rio Tinto's interests are listed on pages 5 and 8.

Rio Tinto's Mineral Resources are set out in full in its 2018 annual report. Mineral Resources are reported as dry in-situ tonnages in addition to Ore Reserves.

In 2018, technical work was conducted across multiple deposits with over 700,000 m drilled. A portion of this has contributed to the significant changes in the following Mineral Resources and are detailed in this release and its appendices:

	Mineral Resources
Music Hall / Old Vic	First reporting of Mineral Resources for Music Hall and Old Vic has added to Hamersley Iron: • 225 Mt of Marra Mamba ore; and • 58 Mt of Detrital ore.
Western Hill	Update to the Mineral Resources for Western Hill has added to the Robe River JV: • 112 Mt of Brockman ore; • 42 Mt of Brockman Process ore; and • 12 Mt of Detrital ore.

Changes in Mineral Resources between 2017 and 2018 are shown in Table A. The locations of the deposits involved are shown in Figure 1.

Table A Aggregate changes to Mineral Resource estimates between 31 Dec 2017 and 31 Dec 2018

	Tonnage (Mt)
2017 Mineral Resources	**22,538**
Music Hall / Old Vic increases	283
Western Hill increases	166
Net amount of other changes	332
2018 Mineral Resources	**23,319**

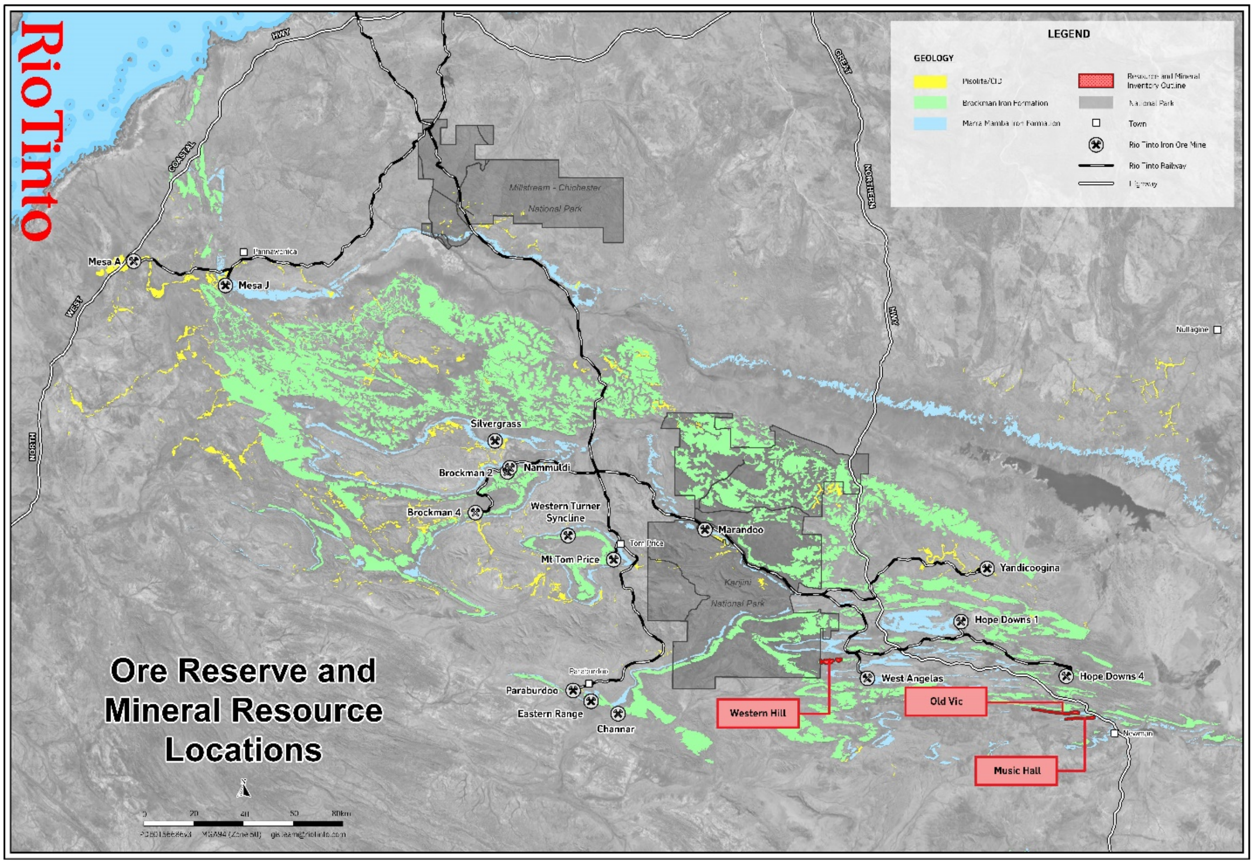

Figure 1 Deposit Location Map

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Summary of information to support the Ore Reserve and Mineral Resource estimates

Music Hall & Old Vic

Initial Mineral Resource estimates for the Music Hall and Old Vic deposits are supported by the information set out in Appendix 1 to this release and located at www.riotinto.com/JORC in accordance with the Table 1 checklist in the JORC Code. The following summary information is provided in accordance with rule 5.8 of the ASX Listing Rules.

Geology, drilling techniques, and geological interpretation

The Music Hall and Old Vic deposits are located within the Hamersley Basin of Western Australia, the host to some of the most significant iron ore deposits in the world. Music Hall and Old Vic mineralisation is primarily hosted by the Marra Mamba Iron Formation with additional detrital mineralisation present.

At Music Hall, reverse circulation (RC) drilling was carried out between 2014 and 2016 and a total of 116 holes were completed for 9,497 m. At Old Vic, RC drilling was carried out between 2015-2017 and a total of 154 holes were completed for 22,073 m. Geophysical logging was completed for most drill holes employing a suite of down hole tools to obtain calliper, natural gamma and other data to assist in the interpretation of the stratigraphy.

Geological modelling was performed by Rio Tinto Iron Ore geologists. The method involved interpretation of stratigraphy and mineralisation using surface geological mapping, lithological logging data, down-hole gamma data, and assay data.

Sampling, sub-sampling method and sample analysis method

Reverse circulation holes have been sub-sampled using rotary splitters. An ‘A’ and ‘B’ sub-sample, each representing 8% of the mass, were collected at 2 m intervals from the rotary cone splitter.

Samples were then sent for analysis by independent assay laboratories. At the laboratory the sample was dried at 105 degrees Celsius for a minimum of 24 hours. The sample was then crushed to less than 3 mm using a jaw crusher and riffle split to produce a 1 – 2.5 kg sub-sample. The sub-sample was pulverised to 95% of weight passing 150 µm. Fe, SiO_2, Al_2O_3, P, Mn, MgO, TiO_2, CaO and S were assayed using industry standard X-Ray Fluorescence (XRF) analysis. Loss on Ignition (LOI) was determined using an industry standard Thermo-Gravimetric Analyser (TGA).

Estimation Methodology

Modelling was completed using the Rio Tinto Iron Ore Pilbara geological modelling and estimation standards. Ordinary kriging and inverse distance weighting to the first and second power methods were used to estimate grades through the deposits.

Criteria used for classification

The Mineral Resource has been classified into the category of Inferred. The determination of the applicable category has considered the relevant factors (geology complexity, mineralisation continuity, sample spacing, data quality, and others as appropriate).

At Music Hall and Old Vic, the data spacing is typically 400 m x 100 m with infill at 400 m x 50 m in some areas.

Note that the same spacing may result in different classification depending on other factors such as, but not limited to, geological complexity and mineralisation continuity.

Cut-off grades

At Music Hall and Old Vic:

- The cut-off for Marra Mamba Mineral Resources is greater than or equal to 58% Fe.

Mining and Metallurgical Methods and Parameters

Development of this Mineral Resource assumes mining using standard Rio Tinto Iron Ore equipment and methods similar to other Rio Tinto Iron Ore operations. The assumed mining method is conventional truck and shovel open pit mining at an appropriate bench height. Mining practices will include grade control utilising blast hole data.

It is assumed that standard crushing and screening processes used by Rio Tinto Iron Ore will be applicable for the processing of Music Hall and Old Vic.

Rio Tinto plans to blend ore from Music Hall and Old Vic with ore from other Rio Tinto Iron Ore mine sites to make a saleable ore product. Music Hall and Old Vic ore will not be marketed directly. This plan is in line with current Rio Tinto Iron Ore practices where ore from multiple mines is combined to produce the Pilbara Blend product.

No other significant modifying factors have yet been identified.

The Music Hall and Old Vic deposits are located within Exploration License E47/00280.

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2018 Annual Report Mineral Resources table, showing line items relating to Music Hall and Old Vic

	Likely Mining Method (a)	Measured resources at end 2018		Indicated resources at end 2018		Inferred resources at end 2018		Total resources 2018 compared with 2017				Rio Tinto Interest %
		Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage		Grade		
								2018	2017	**2018**	2017	
IRON ORE (b)		millions of tonnes	%Fe	millions of tonnes	%Fe	millions of tonnes	%Fe	**millions of tonnes**	millions of tonnes	**%Fe**	%Fe	
Hammersley Iron (Australia)												
- Marra Mamba (c)	O/P	180	62.1	361	61.8	1,144	61.3	**1,685**	1,594	**61.5**	61.7	100.0
- Detrital (d)	O/P	3.0	61.1	120	61.4	691	60.9	**814**	666	**61.0**	61.2	100.0

(a) Likely mining method: O/P = open pit; O/C = open cut; U/G = underground; D/O = dredging operation.
(b) Iron ore Resources tonnes are reported on a dry weight basis. As Rio Tinto only markets blended iron ore products from multiple mine sources, a detailed breakdown of constituent elements by individual deposit is not reported.
(c) Hamersley Iron (Marra Mamba) Resource tonnes have increased following the inclusion of two new adjacent deposits in the East Pilbara (Music Hall and Old Vic). A JORC Table 1 in support of these changes will be released to the market contemporaneously with the release of this Annual Report and can be viewed at riotinto.com/JORC.
(d) Hamersley Iron (Detrital) Resource tonnes have increased following the inclusion of a new deposit (Old Vic) in conjunction with additional mineralisationidentified by drilling and subsequent geological model updates. A JORC Table 1 in support of these changes will be released to the market contemporaneously with the release of this Annual Report and can be viewed at riotinto.com/JORC.

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Western Hill

Initial Mineral Resource estimates for the Western Hill deposit are supported by the information set out in Appendix 2 to this release and located at www.riotinto.com/JORC in accordance with the Table 1 checklist in the JORC Code. The following summary information is provided in accordance with rule 5.8 of the ASX Listing Rules.

Geology, drilling techniques, and geological interpretation

The Western Hill deposit is located within the Hamersley Basin of Western Australia, the host to some of the most significant iron ore deposits in the world. Western Hill mineralisation is primarily hosted by the Brockman Iron Formation with additional detrital mineralisation present.

Drilling at Western Hill was carried out using Reverse circulation (RC) and diamond drill rigs. In total, of 446 holes were completed for 36,600 m. Geophysical logging was completed for most drill holes employing a suite of down hole tools to obtain calliper, natural gamma and other data to assist in the interpretation of the stratigraphy.

Geological modelling was performed by Rio Tinto Iron Ore geologists. The method involved interpretation of stratigraphy and mineralisation using surface geological mapping, lithological logging data, down-hole gamma data, and assay data.

Sampling, sub-sampling method and sample analysis method

Reverse circulation holes have been sub-sampled using rotary splitters. An ‘A’ and ‘B’ sub-sample, each representing 8% of the mass, were collected at 2 m intervals from the rotary cone splitter.

Samples were then sent for analysis by independent assay laboratories. At the laboratory the sample was dried at 105 degrees Celsius for a minimum of 24 hours. The sample was then crushed to less than 3 mm using a jaw crusher and riffle split to produce a 1 – 2.5 kg sub-sample. The sub-sample was pulverised to 95% of weight passing 150 µm. Fe, SiO_2, Al_2O_3, P, Mn, MgO, TiO_2, CaO and S were assayed using industry standard X-Ray Fluorescence (XRF) analysis. Loss on Ignition (LOI) was determined using an industry standard Thermo-Gravimetric Analyser (TGA).

Estimation Methodology

Modelling was completed using the Rio Tinto Iron Ore Pilbara geological modelling and estimation standards. Ordinary kriging and inverse distance weighting to the second power methods were used to estimate grades through the deposits.

Criteria used for classification

The Mineral Resource has been classified into the category of Inferred. The determination of the applicable category has considered the relevant factors (geology complexity, mineralisation continuity, sample spacing, data quality, and others as appropriate). At this deposit the data spacing is typically 200 m x 50 m with infill to 100 m x 100 m. The western part of the deposit has data spacing of 200m x 100 m.

Note that the same spacing may result in different classification depending on other factors such as, but not limited to, geological complexity and mineralisation continuity.

Cut-off grades

At Western Hill:

- The cut-off for Brockman Mineral Resources is greater than or equal to 60% Fe;
- The cut-off for Brockman Process Ore Mineral Resources is material 50% ≤ Fe < 60% and 3% ≤ Al_2O_3 < 6% (geology domain must be Dales Gorge, Joffre or Footwall Zone).

Mining and Metallurgical Methods and Parameters

Development of this Mineral Resource assumes mining using standard Rio Tinto Iron Ore equipment and methods similar to other Rio Tinto Iron Ore operations. The assumed mining method is conventional truck and shovel open pit mining at an appropriate bench height. Mining practices will include grade control utilising blast hole data.

It is assumed that standard crushing and screening processes used by Rio Tinto Iron Ore will be applicable for the processing of Western Hill.

Rio Tinto plans to blend ore from Western Hill with ore from other Rio Tinto Iron Ore mine sites to make a saleable ore product. Western Hill ore will not be marketed directly. This plan is in line with current Rio Tinto Iron Ore practices where ore from multiple mines is combined to produce the Pilbara Blend product.

No other significant modifying factors have yet been identified.

The Western Hill deposit lies within Mineral Lease (ML) 248Sa Sec095 and Exploration Licence E47/00797.

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2018 Annual Report Mineral Resources table, showing line items relating to Western Hill

	Likely Mining Method (a)	Measured resources at end 2018		Indicated resources at end 2018		Inferred resources at end 2018		Total resources 2018 compared with 2017				
		Tonnage	Grade	Tonnage	Grade	Tonnage	Grade	Tonnage		Grade		Rio Tinto Interest %
								2018	2017	**2018**	2017	
IRON ORE (b)		millions of tonnes	%Fe	millions of tonnes	%Fe	millions of tonnes	%Fe	**millions of tonnes**	millions of tonnes	**%Fe**	%Fe	
Robe JV (Australia)												
- Brockman (g)	O/P			156	62.5	462	61.3	**618**	489	**61.6**	61.3	53.0
- Brockman Process Ore (g)	O/P			75	56.8	413	56.7	**488**	359	**56.7**	56.7	53.0
- Detrital (g)	O/P			23	59.5	101	61.0	**124**	95	**60.8**	60.7	53.0

(a) Likely mining method: O/P = open pit; O/C = open cut; U/G = underground; D/O = dredging operation.
(b) Iron ore Resources tonnes are reported on a dry weight basis. As Rio Tinto only markets blended iron ore products from multiple mine sources, a detailed breakdown of constituent elements by individual deposit is not reported.
(g) Robe JV Brockman, Brockman Process Ore and Detrital Resource tonnes have increased as a result of additional mineralisation identified by additional drilling and an updated geological model for the Western Hill deposit. A JORC Table 1 in support of these changes will be released to the market contemporaneously with the release of this Annual Report and can be viewed at riotinto.com/JORC.

Competent Persons' Statement

The material in this report that relates to Mineral Resources is based on information prepared by Mr Bruce Sommerville, a Competent Person who is a Fellow of The Australasian Institute of Mining and Metallurgy.

Mr Sommerville is a full-time employee of Rio Tinto.

Mr Sommerville 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 Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Sommerville consents to the inclusion in the report of the material based on information prepared by him in the form and context in which it appears.

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Music Hall and Old Vic - Table 1

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

SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	Commentary
Sampling techniques	General Statements : • Samples for geological logging and assay were collected via drilling. • Geological logging and assay samples were collected at 2 m intervals from reverse circulation drilling; all intervals were sampled. • Metallurgical samples were collected from PQ diamond core drilling. • Mineralisation was determined by a combination of geological logging and geochemical assay results. • Reverse circulation drilling utilised a rotary cone splitter beneath a cyclone return system to obtain a primary and secondary sample, with particular attention paid to samples collected being of comparable weights. The splitter produced two 8% samples ('A' and 'B') and one 84% reject sample. The primary 'A' sample was collected at 2 m intervals through 8% blades from the outer cone of the rotary cone splitter. Deposit Specific Statements : Music Hall : • The reverse circulation drill programmes were conducted on an east to west (E-W) grid pattern, at a mostly 400 m x 100 m collar spacing. Old Vic : • The reverse circulation drill programmes were conducted on a north-east to south-west (NE-SW) grid pattern, at a mostly 400 m x 100 m collar spacing.
Drilling techniques	General Statements : • Reverse circulation drilling utilised a 140 mm diameter face sampling bit with a sample shroud, attached to a pneumatic piston hammer. This was used to penetrate the ground and deliver the sample up the 6 m drill rod inner tubes (4 m starter rod) through to the cyclone and the rotary cone splitter. • Wet drilling was implemented as standard procedure for all drillholes from 2014 onwards, in order to mitigate the risks associated with fibrous mineral intersections. Prior to 2014, dry drilling was conducted. • Diamond drilling was a PQ core size using double and triple tube techniques. Deposit Specific Statements : Music Hall : • The 2014 to 2016 drilling programmes were mostly angled (-70 degrees towards the north) with some holes drilled vertically. Old Vic : • The 2015 drill programmes was oriented vertically. The 2016-2017 drilling programmes were mostly angled (-70 degrees towards the north) with some holes drilled vertically.
Drill sample recovery	General Statements : • Direct recovery measurements of reverse circulation samples were not performed; however a qualitative estimate of sample loss at the rig was made. Sample weights were recorded at the laboratory, upon receipt and after oven drying. • Diamond core recovery was maximised via the use of triple-tube sampling and additive drilling muds. • Diamond core recovery was recorded using rock quality designation (RQD) measurements with all cavities and core loss recorded in the Rio Tinto Iron Ore acQuire™ database (RTIODB). • Sample recovery in some of the friable mineralisation may have been reduced: however this was unlikely to have a material impact on the reported assays for these intervals. • Thorough analysis of duplicate sample performance did not indicate any chemical bias as a

	result of inequalities in weights of samples.
Logging	General Statements : • All drillholes were geologically logged utilising standard Rio Tinto Iron Ore Material Type Classification Scheme (RTIO MTCS) logging codes and entered into the Rio Tinto Iron Ore acQuire™ database (RTIODB) on field Toughbook laptops. • Internal training and validation of logging included RTIO MTCS identification and calibration workshops, peer reviews and validation of logging versus assay results. • Geological logging was performed on 2 m intervals for all reverse circulation drilling. • Magnetic susceptibility readings were taken using a Kappameter for each interval. • Open-hole acoustic and optical televiewer image data was collected in specific reverse circulation holes throughout the deposit for structural analyses. • All diamond drill core and reverse circulation chip piles were photographed digitally and files stored on Rio Tinto network servers. Deposit Specific Statements : Music Hall : • 2014 and 2016 : drillholes only had in-rod gamma trace surveys completed. • 2015 : drillholes recorded in-rod gamma trace and deviation with caliper, density, resistivity, and magnetic susceptibility also captured for selected holes. Old Vic : • 2015 : drillholes only had in-rod gamma trace surveys completed. • 2016 and 2017 : drillholes recorded in-rod gamma trace and deviation with caliper, density, resistivity, and magnetic susceptibility also captured for selected holes.

Sub-sampling techniques and sample preparation	General Statements :
	Sub-sampling techniques:
	• Wet reverse circulation drilling was sampled at 2 m intervals. Sub-sampling was carried out using a rotary cone splitter beneath a cyclone return system, producing approximate mass splits of:
	  o 'A' Split – Analytical sample – 8%
	  o 'B' Split – Retention sample – 8%
	  o Bulk Reject – 84%.
	
	Sample preparation of the 'A' split sample:
	• Samples were dried at 105° C.
	• Samples were crushed to -3 mm using a Boyd Crusher and split using a rotary sample divider to capture 1 – 2.5 kg samples.
	• Manual LM5 was used to pulverise the total sample (1 – 2.5 kg) to 90% of the weight passing through a 150 micrometers (µm) sieve.
	• A 100 gram sub-sample was collected for analysis.The sub-sampling process has been assessed and deemed appropriate for the deposits mineralisation style.

Quality of assay data and laboratory tests	General Statements : Assay methods: • The assaying of all samples used in the Mineral Resource estimates was performed by independent National Association of Testing Authorities (NATA) certified laboratories. • Fe, SiO_2, Al_2O_3, TiO_2, Mn, CaO, P, S, MgO, K_2O, Zn, Pb, Cu, Ba, V, Cr, Cl, As, Ni, Co, Sn, Sr, Zr and Na were assayed using industry standard lithium tetraborate and lithium metaborate fusion and X-Ray Fluorescence (XRF) analytical techniques. • Loss on Ignition (LOI) was determined using an industry standard Thermo-Gravimetric Analyser (TGA) and was measured at three steps of temperatures: 140° - 425° C, 425° - 650° C, 650° - 1000° C. • Samples were dispatched to Perth for preparation and analytical testing at Intertek-GenAlysis Laboratory Services Pty Ltd. Quality assurance measures include: • Insertion of coarse reference standards by Rio Tinto Iron Ore geologists was undertaken at a rate of one in every 30 samples in mineralised zones and one in every 60 samples in waste zones with a minimum of one standard per drillhole. Reference material was prepared and certified by Rio Tinto Iron Ore following ISO 3082:2009 (Iron Ores – Sampling and sample preparation procedures) and ISO 9516-1:2003 (Iron Ores – Determination of various elements by X-ray fluorescence spectrometry – Part 1: Comprehensive procedure).

	• Coarse reference standards contained a trace of strontium carbonate that was added at the time of preparation for ease of identification. • Field duplicates were collected as a 'B' split retention sample, which was taken directly from the rig splitter. Duplicate insertion occurred at a frequency of one in 20. Trace zinc was included in the duplicate sample for identification. • At a frequency of one in 20, -3 mm splits and pulps were collected as laboratory splits and repeats respectively. These sub-samples were analysed at the same time as the original sample to identify grouping, segregation and delimitation errors. • Internal laboratory quality assurance and quality control measures involved the use of internal laboratory standards of certified reference material in the form of pulps, blanks and duplicates. • Random re-submission of pulps at an external laboratory was performed following analysis. • Chemical Analysis Testing (CAT) and Analytical Precision Testing (APT) samples were collected at a frequency of one per batch. They were submitted to a third party laboratory (Geostats) to check analytical precision and accuracy, as part of the Rio Tinto Iron Ore quality assurance and quality control (RTIO QA/QC) procedures. • Analysis of the performance of certified standard and field duplicates has indicated an acceptable level of accuracy and precision without any significant bias.
Verification of sampling and assaying	General Statements : • Field data was logged directly onto field Toughbook laptops using pre-formatted and validated logging templates, with details uploaded to the RTIODB on a daily basis. • The assaying of all samples used in the Mineral Resource estimates have been performed by independent National Association of Testing Authorities (NATA) certified laboratories. • Assay data was returned electronically from the laboratory and uploaded into the RTIODB. • Assay data was only accepted into the RTIODB once the quality control assessment was completed. • Written procedures outline the processes of geological logging and data importing, quality assurance and quality control validation and assay importing. A robust, restricted-access database was in place to ensure that any requests to modify existing data go through appropriate channels and approvals, and that changes are tracked by date, time, and user. • Assay data has not been adjusted. Deposit Specific Statements : Music Hall : • In 2016, four reverse circulation holes from the 2014 and 2015 drill programmes were twinned with diamond holes for Metallurgical purposes. • Analysis of the twinned drillhole assay data distributions showed that the drilling methods displayed similar grade and geological distributions, and verified the suitability for reverse circulation samples to be used in the Mineral Resource estimate. Old Vic : • Twinned holes were not completed.
Location of data points	General Statements : • Collar location data was validated by checking actual versus planned coordinate discrepancies. Once validated, the survey data was uploaded into the RTIODB database. • The drillholes were surveyed in Mine Grid of Australia 1994 (MGA94) Zone 50 coordinates using Differential Global Positioning System (DGPS) survey equipment, which was accurate to 10 cm in both horizontal and vertical directions. Upon receipt of the coordinate data it was validated against the planned drillhole coordinates, and then uploaded to the drillhole database. All holes were picked up by qualified surveyors. • Drillhole collar reduced level (RL) data was compared to detailed topographic maps and showed that the collar survey data was accurate. • Down-hole surveys were conducted on every hole, with the exception of collapsed or otherwise hazardous holes. Significant, unexpected deviations were investigated and validated. Holes greater than 100 m depth were surveyed with an in-rod gyro tool. • All holes interpreted and used in the model had surveyed coordinates. • The topographic surface was created from 30 m Shuttle Radar Topography Mission (SRTM) grid data, and combined with the surveyed drill collar locations. These were then triangulated to produce the current topographic surface.
Data spacing and distribution	General Statements : • The drill spacing was deemed appropriate for sufficient deposit knowledge by the Competent Person for the Mineral Resource classification applied.

	• The mineralised domains for the Music Hall and Old Vic deposits have demonstrated sufficient continuity in both geology and grade to support the definition of Mineral Resources, and the classifications applied under the 2012 JORC Code guidelines. • Sample compositing has not been performed. Deposit Specific Statements : Music Hall : • The drill spacing across the deposit is mostly 400 m x 100 m with some areas in-filled to 400 m x 50 m. Old Vic : • The drill spacing across the deposit is mostly 400 m x 100 m with some areas in-filled to 400 m x 50 m.
Orientation of data in relation to geological structure	General Statements : • Drill lines were oriented north - south, approximately perpendicular to the deposit strike. • Drilling was predominantly angled at -70° to allow for better intersection of the stratigraphy and collection of televiewer data. • While mineralisation was frequently intersected at an angle, the orientation of mineralisation relevant to drilling was not considered likely to have introduced any material bias. Deposit Specific Statements : Music Hall : • Only a small number of holes were drilled vertically. Old Vic : • All holes from the 2015 drilling programme were drilled vertically.
Sample security	General Statements : • The sample chain of custody was managed by Rio Tinto Iron Ore Ltd. • Analytical samples ('A' splits) were collected by field assistants, placed into bulk bags and delivered to Perth by a recognised freight service and then to the assay laboratory by a Perth-based courier service. Whilst in storage, the samples were kept in a locked yard. • Retention samples ('B' splits) were collected and stored in drums at on-site facilities. • 150 grams of excess pulps from primary samples were retained indefinitely at laboratories and external storage facilities at CTI Logistics Ltd in Perth, Western Australia.
Audits or reviews	General Statements : • External audits have not been performed specifically on sampling techniques or data. • Internal Rio Tinto Iron Ore peer review processes and internal Rio Tinto technical reviews were completed. These reviews concluded that the fundamental data collection techniques were appropriate.

SECTION 2 REPORTING OF EXPLORATION RESULTS

Criteria	Commentary
Mineral tenement and land tenure status	General Statements : • The Music Hall and Old Vic deposits are located within Exploration License E47/00280. • It is 100% owned and administered by Hamersley Exploration Pty Ltd (100% Rio Tinto Ltd.). • There are currently no known or anticipated impediments to developing the Mineral Resource on this tenure.
Exploration done by other parties	General Statements : • 1970's drilling was conducted by Pacminex and 1980's drilling by CRA; all data is currently available within Rio Tinto databases. This data was not used for the Mineral Resource estimate.
Geology	General Statements : • Mineralisation was interpreted to be primarily derived from supergene enrichment of the Marra Mamba Banded Iron Formation (BIF), to form a low phosphorous, hematite-goethite dominant iron ore. • Logging and sampling indicated mineralisation was relatively fines-dominant, but further ore characterisation studies are required. Deposit Specific Statements : Music Hall : • Music Hall is a Marra Mamba Iron Formation deposit, located on the fully-overturned southern limb of a north-verging syncline. • There are several faults that cut the deposit on a northeast to east-northeast orientation, dividing it into 4 mineralised and 2 un-mineralised domains. Additional faults/domains may exist, but these are difficult to determine with confidence at the current drillhole spacing. • Approximately 95% of the Mineral Resource lies below the water table. Old Vic : • Old Vic is a Marra Mamba Iron Formation deposit, located on the fully-overturned southern limb of a north-verging syncline. • There are several faults that cut the deposit on a northeast to east orientation, dividing it into 5 domains. Additional faults/domains may exist, but these are difficult to determine with confidence at the current drillhole spacing. • Approximately 99% of the Mineral Resource lies below the water table.

<table>
<tr><td>Drill hole Information</td><td>

Deposit Specific Statements :

Music Hall :

- Summary of drilling data used for the Music Hall Mineral Resource estimate:

Year	Reverse Circulation	
	# Holes	Metres
2014	64	5,353
2015	46	3,658
2016	6	486
Total	**116**	9,497

Old Vic :

- Summary of drilling data used for the Old Vic Mineral Resource estimate:

Year	Reverse Circulation	
	# Holes	Metres
2015	39	4,432
2016	59	9,631
2017	56	8,010
Total	**154**	22,073

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<tr><td>Data aggregation methods</td><td>

General Statements :

- Compositing was not deemed necessary as samples were collected at 2 m intervals.
- Grade truncations were not performed.

</td></tr>
<tr><td>Relationship between mineralisation widths and intercept lengths</td><td>

General Statements :

- Geometry of the mineralisation with respect to the drillhole angle was well-defined in most areas of the deposit. Local mapping, historical drilling and regional context indicated that the deposit was dipping steeply toward the south. The majority of the drillholes were angled at -70 degrees towards the north, in order to intersect the stratigraphy and mineralisation at a nearly perpendicular angle.

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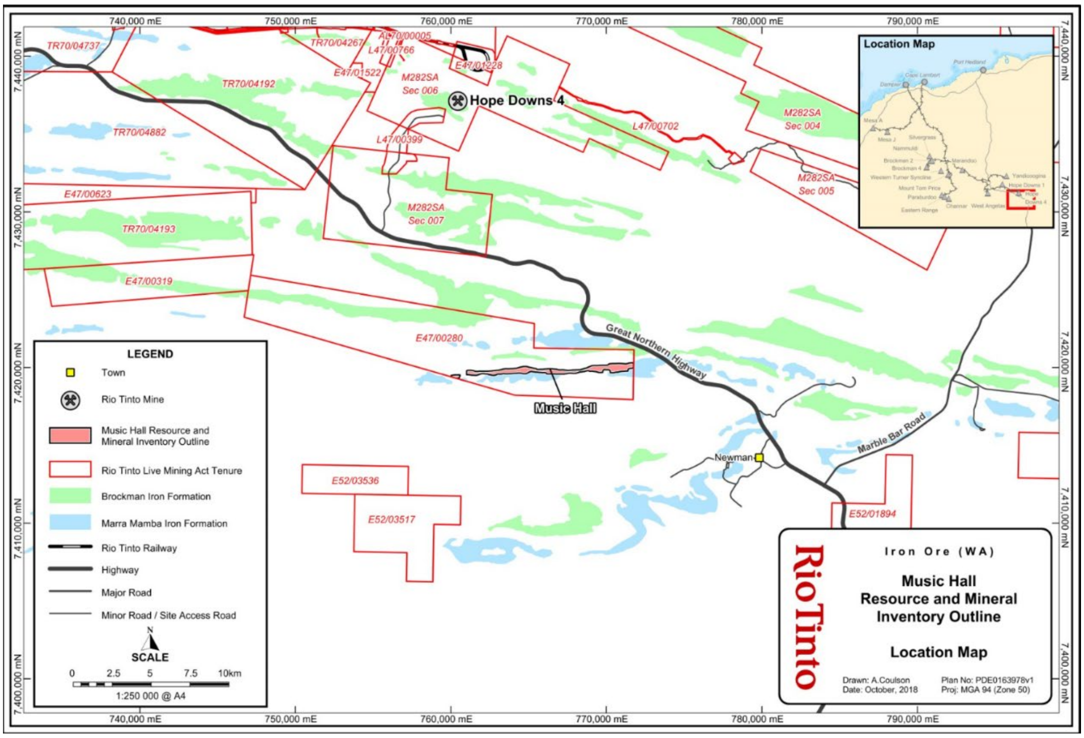
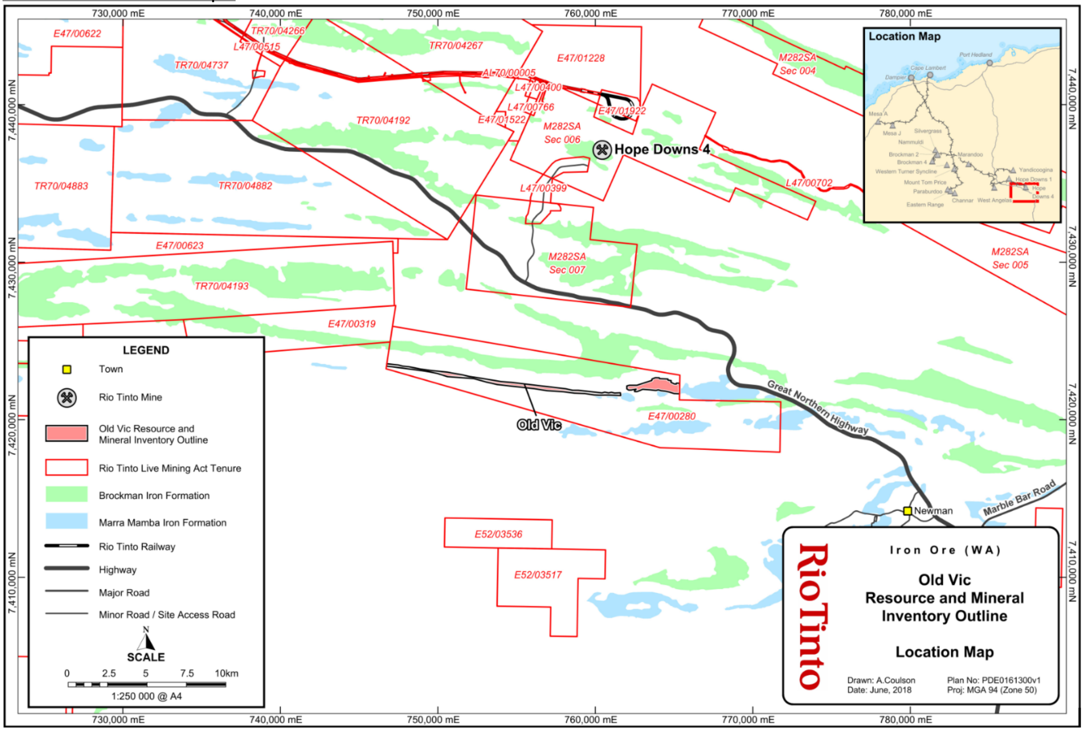
Diagrams	Deposits Specific Statements :

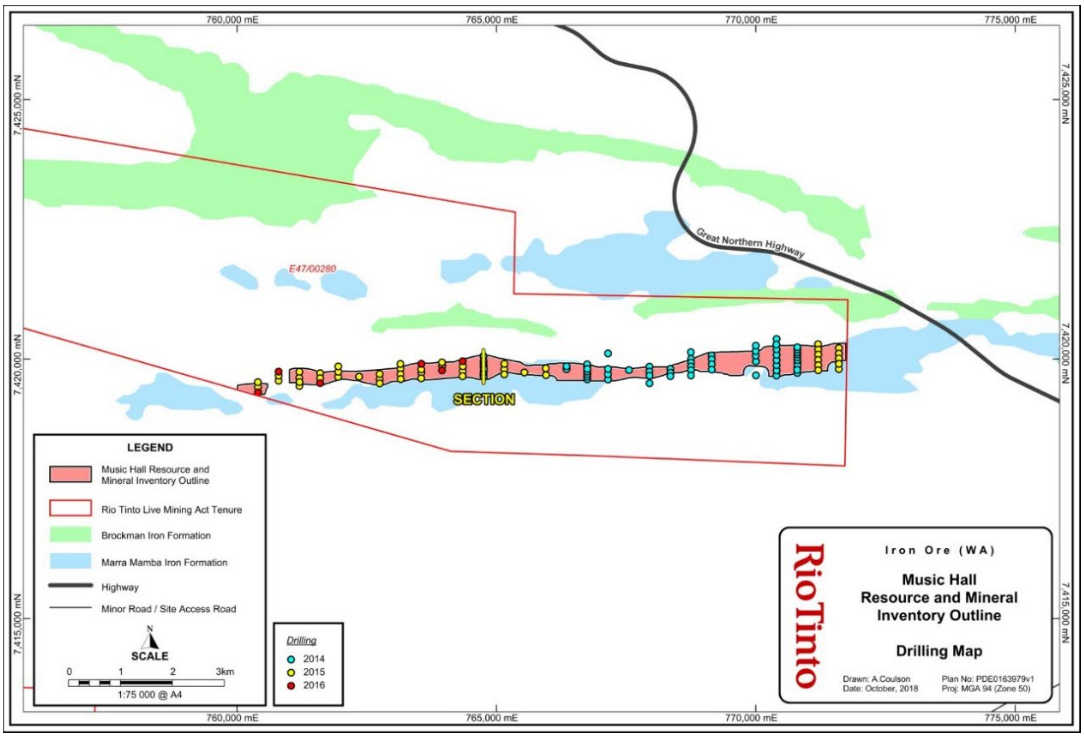
Music Hall Location Map :



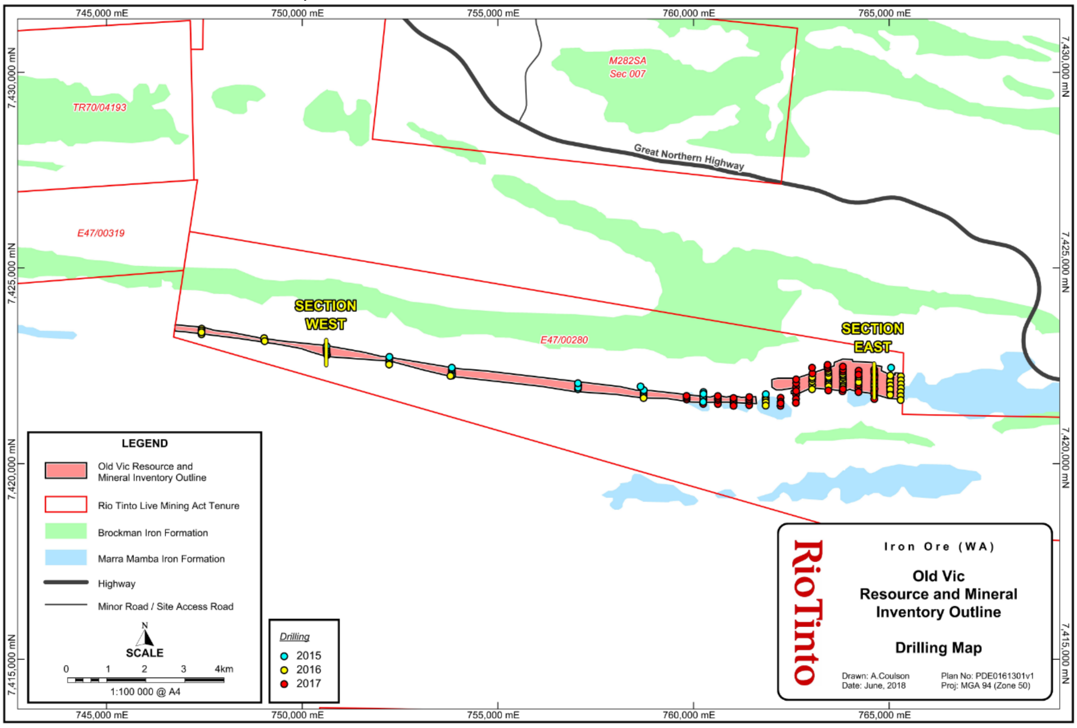
Old Vic Location Map :



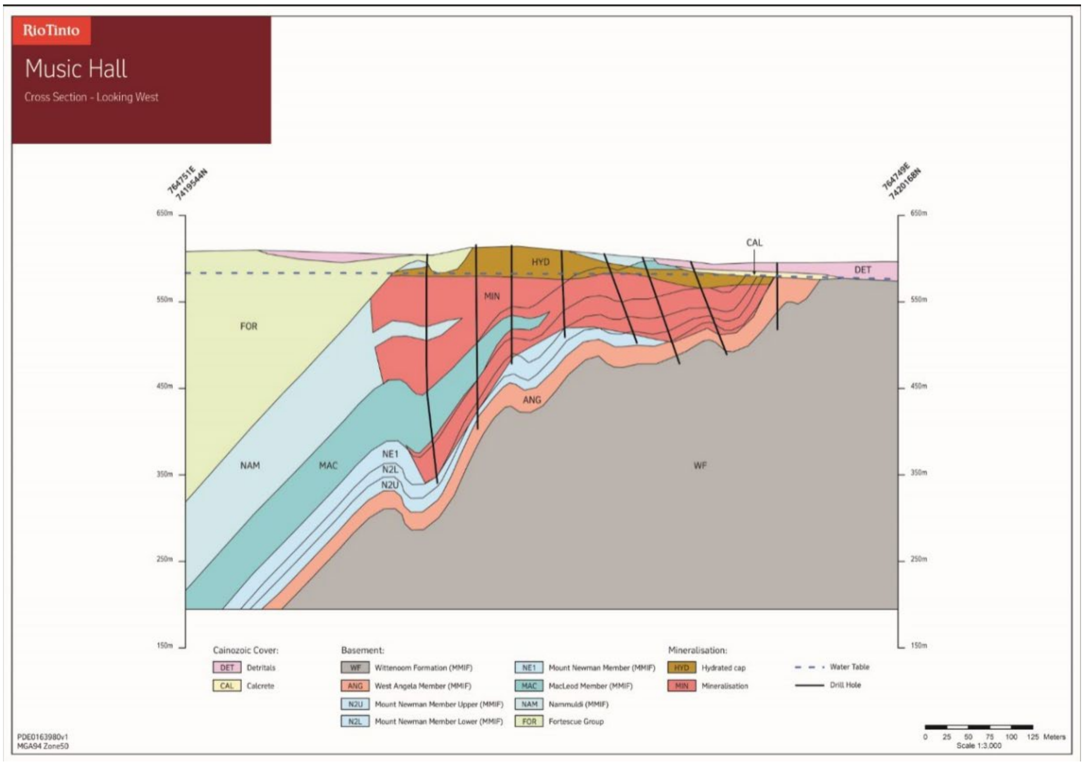
<u>Music Hall Drillhole Locations Map :</u>



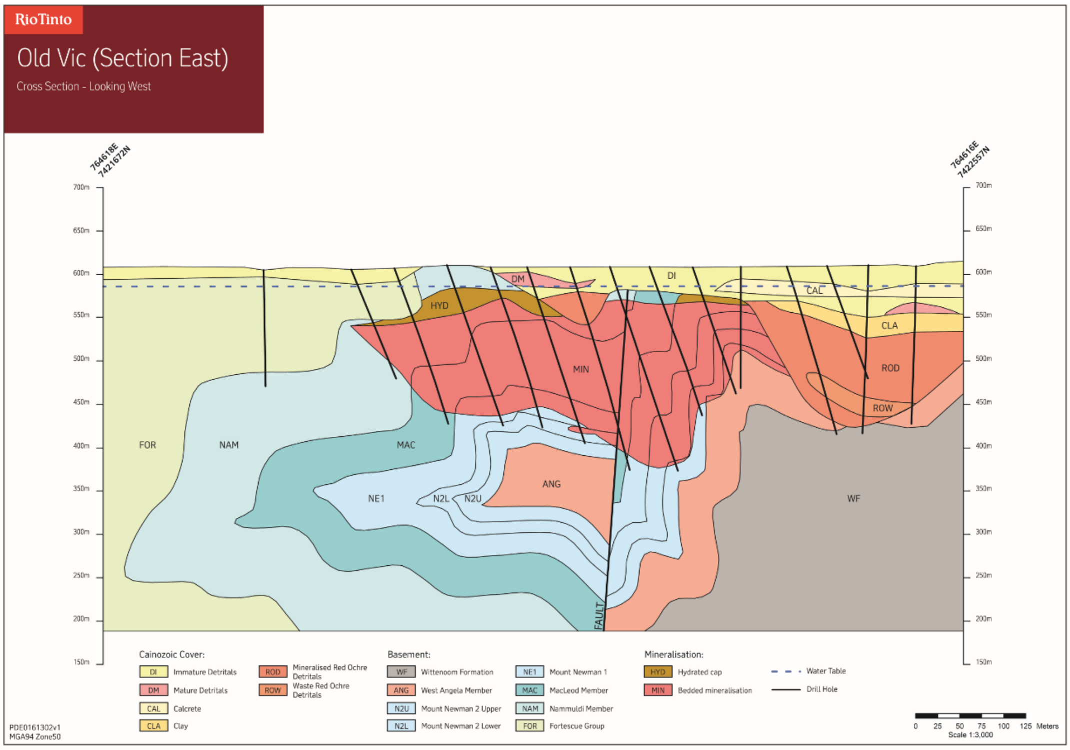
<u>Old Vic Drillhole Location Map :</u>

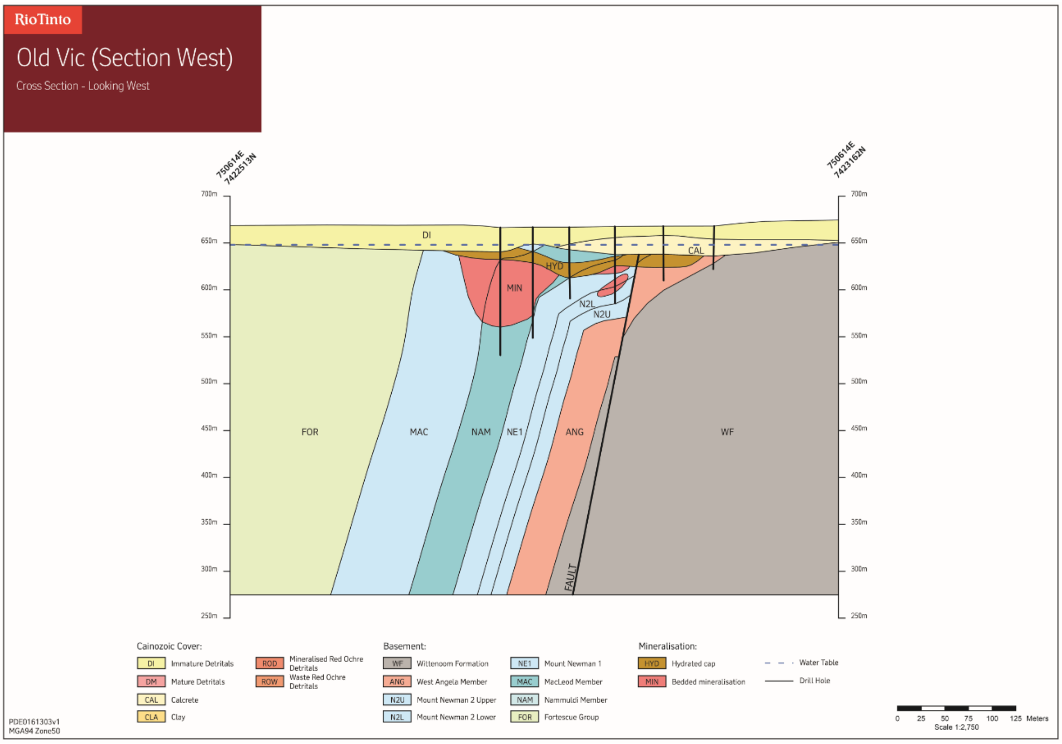


Music Hall Geological Cross Sections :



Old Vic Geological Cross Sections :





Balanced reporting	<u>General Statements</u> : • Not applicable as Rio Tinto has not specifically released exploration results for this deposit.
Other substantive exploration data	<u>General Statements</u> : • Geological mapping data was collected across the Music Hall and Old Vic deposits in 2011 at the 1:5,000 scale.
Further work	<u>General Statements</u> : • Further work at Music Hall and Old Vic is required to better define the orebody and improve structural understanding. Additional infill reverse circulation drilling is required across the deposit. • Diamond drilling for metallurgical, density, and geotechnical purposes is required across both deposit.

SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

Criteria	Commentary

Database integrity	General Statements :
	• All drilling data is securely stored within the Rio Tinto Iron Ore acQuire™ database (RTIODB) and is managed by dedicated personnel within Rio Tinto Iron Ore. The system is backed up nightly on servers located in Perth, Western Australia. The backup system was tested in January 2018, demonstrating that the system is effective.
	• The import/exporting process requires limited keyboard transcription and has multiple built-in safeguards to ensure information is not overwritten or deleted. These include:
	  ○ Data is imported and exported through automated interfaces, with limited manual input;
	  ○ Automated validation checks ensure errors are identified prior to import;
	  ○ Once within the RTIODB, editing is very limited and warning messages ensure accidental changes are not made;
	  ○ Audit trail records updates and deletions should an anomaly be identified;
	  ○ Export interface ensures the correct tables, fields and format are selected.
	• The drillhole database used for Mineral Resource estimation has been internally validated. Methods include checking:
	  ○ acQuire™ scripts for relational integrity, duplicates, total assay and missing or blank assay values;
	  ○ Grade ranges in each domain;
	  ○ Domain names and tags;
	  ○ Survey data down-hole consistency;
	  ○ Null and negative grade values;
	  ○ Missing or overlapping intervals;
	  ○ Duplicate data.
	• The drillhole data was also validated visually by domain and compared to the geological model.

Site visits	General Statements : • The Competent Person visited Music Hall and Old Vic in 2017. There were no outcomes as a result of this visit.
Geological interpretation	General Statements : • Overall, the Competent Person's confidence in the geological interpretation of the area is moderate, based on the quantity and quality of data available, and the continuity and nature of the mineralisation. • Geological modelling was performed by Rio Tinto Iron Ore geologists. The method involves interpretation of stratigraphy using surface geological mapping, lithological logging data, down-hole gamma data, and assay data. • Cross-sectional interpretation of each stratigraphic unit was performed, followed by interpretation of mineralisation boundaries. Three-dimensional wireframes of the sectional interpretations were created to produce the geological model. • Mineralisation is continuous; it is affected by stratigraphy, structure and weathering. The drillhole spacing is sufficient to capture grade and geology variation for Mineral Resource reporting. • The geological model was sub-divided into domains and both the samples and geological model blocks were coded with these domains.
Dimensions	Deposit Specific Statements : Music Hall : • The Music Hall deposit extends approximately 10 km along strike in an east to west (E-W) direction, up to 400 m across strike in a north to south (N-S) direction and to a maximum depth of 260 m below the current topographical surface. Old Vic : • The Old Vic deposit extends approximately 19 km along strike in an east to west (E-W) direction, up to 1.5 km across strike in a north to south (N-S) direction and to a maximum depth of 320 m below the current topographical surface.

Estimation and modelling techniques	General Statements : • Ten grade attributes (Fe, SiO_2, Al_2O_3, P, Mn, LOI, S, TiO_2, MgO, and CaO), and density were estimated for input into Mine Planning and Marketing assessments. • Statistical analysis was carried out on data for all domains. • The grade estimation process was completed using Maptek™ Vulcan™ software. • A 'high yield limit' was not applied. • Other grade capping or cutting was not applied. • The estimated model validated using a combination of visual, statistical, and a check estimate which used multivariate global change of support techniques. No production data is available for reconciliation. Deposit Specific Statements : Music Hall : • A block size of 200 m (X) × 25 m (Y) × 5 m (Z) was used for parent blocks. Parent blocks were sub-celled to the geological boundaries to preserve volume. • Estimates were completed on parent blocks. • Mineralised domains were estimated by ordinary kriging. Non-mineralised domains were estimated by inverse distance weighting to the first (ID^1) or second power (ID^2), or assigned average grades via scripting. These methods were deemed appropriate by the Competent Person for estimating the tonnes and grade of the reported Mineral Resources. • Grades were extrapolated to a maximum distance of approximately 200 m from data points. Old Vic : • A block size of 200 m (X) × 25 m (Y) × 5 m (Z) was used for parent blocks. Parent blocks were sub-celled to the geological boundaries to preserve volume. • Estimates were completed on parent blocks. • Mineralised domains were predominantly estimated by inverse distance to the power of two (ID^2), or were assigned average grades via scripting. Non-mineralised domains were estimated by inverse distance weighting to the first power (ID^1) or assigned average grades via scripting. These methods were deemed appropriate by the Competent Person for estimating the tonnes and grade of the reported Mineral Resources. • Grades were extrapolated to a maximum distance of approximately 500 m from data points.
Moisture	General Statements : • All Mineral Resource tonnages are estimated and reported on a dry basis.
Cut-off parameters	General Statements : • The cut-off for Marra Mamba Mineral Resource is material greater than or equal to 58% Fe.
Mining factors or assumptions	General Statements : • Development of this Mineral Resource assumes mining using standard Rio Tinto Iron Ore equipment and methods similar to other Rio Tinto Iron Ore operations. The assumed mining method is conventional truck and shovel open pit mining at an appropriate bench height. Mining practices will include grade control utilising blast hole data. • Rio Tinto plans to blend ore from Music Hall and Old Vic with ore from other Rio Tinto Iron Ore mine sites to make a saleable ore product. This plan is in line with current Rio Tinto Iron Ore practices where ore from multiple mines is combined to produce the Pilbara Blend product.
Metallurgical factors or assumptions	General Statements : • It is assumed that standard crushing and screening processes used by Rio Tinto Iron Ore will be applicable for the processing of Music Hall and Old Vic.
Environmental factors or assumptions	General Statements : • Rio Tinto Iron Ore has an extensive environmental approval process, and environmental studies will be completed during the project study phases to determine if the project requires formal State and Commonwealth environmental assessment and approval. • Mapping of oxidised shales, black carbonaceous shales, lignite, and the location of the water table, is used in prediction and planning for the treatment of potential environmental impacts. This process is in accordance with Rio Tinto's Chemically Reactive Mineral Waste Standard.

Bulk density	General Statements : • Dry bulk density has been assigned from domain-specific average dry core densities collected across other Pilbara deposits. • The Competent Person considers this appropriate for the assigned Mineral Resource classification.
Classification	Deposit Specific Statements : • The Mineral Resource has been classified into the Inferred category. The determination of the applicable resource category has considered the relevant factors (geology, mineralisation continuity, sample spacing, data quality, and others). • The Competent Person is satisfied that the stated Mineral Resource classification reflects the relevant factors of the deposit.
Audits or reviews	General Statements : • All stages of Mineral Resource estimation have undergone an internal peer review process, which has documented all phases of the process. The Mineral Resource estimate has been accepted by the Competent Person.
Discussion of relative accuracy/ confidence	General Statements : • Rio Tinto Iron Ore operates multiple mines in the Pilbara region of Western Australia. The Mineral Resource data collection and estimation techniques used for Music Hall and Old Vic are consistent with those applied at other deposits where mining has commenced. Reconciliation of actual production with the Mineral Resource estimates for individual deposits is generally accurate to within 10% for tonnes on an annual basis. This result is indicative of a robust process.

Western Hill - Table 1

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

SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	Commentary
Sampling techniques	• Samples for geological logging and assay were collected via drilling. • Geological logging and assay samples were collected at 2 m intervals from reverse circulation drilling; all intervals were sampled. • The reverse circulation drill programs were conducted on an east to west (E-W) grid pattern at a mostly 200 m x 50 m collar spacing. • Geotechnical, density and metallurgical samples were collected from PQ diamond core drilling. • Mineralisation was determined by a combination of geological logging and geochemical assay results. • Reverse circulation drilling utilised a rotary cone splitter beneath a cyclone return system to obtain a primary and secondary sample, with particular attention paid to samples collected being of comparable weights. The splitter produced two 8% samples ('A' and 'B') and one 84% reject sample. The primary 'A' sample was collected at 2 m intervals through 8% blades from the outer cone of the rotary cone splitter.
Drilling techniques	• The 1974 drilling programme was mainly percussion holes, whilst the 1990s programmes were comprised of percussion and reverse circulation holes. • The 2005 to 2017 drilling programmes were mostly drilled vertically with some angled holes to -70 degrees. • Reverse circulation drilling utilised a 140 mm diameter face sampling bit with a sample shroud, attached to a pneumatic piston hammer. This was used to penetrate the ground and deliver the sample up the 6 m drill rod inner tubes (4 m starter rod) through to the cyclone and the static or rotary cone splitter. • Wet drilling was implemented as standard procedure for all drillholes from 2014 onwards, to mitigate the risks associated with fibrous mineral intersections. Prior to 2014, dry drilling was conducted. • Diamond drilling was of PQ core size, using double and triple tube techniques.
Drill sample recovery	• Direct recovery measurements of reverse circulation samples were not performed; however a qualitative estimate of sample loss at the rig was made. Sample weights were recorded at the laboratory upon receipt and after oven drying. • Diamond core recovery was maximised via the use of triple-tube sampling and additive drilling muds. • Diamond core recovery was recorded using rock quality designation (RQD) measurements with all cavities and core loss recorded in the Rio Tinto Iron Ore acQuire™ database (RTIODB). • Sample recovery in some of the friable mineralisation may have been reduced, however this was unlikely to have made a material impact on the reported assays for these intervals. • Thorough analysis of duplicate sample performance did not indicate any chemical bias, as a result of inequalities in weights of samples.
Logging	• A qualitative geological log documenting the sample colour, minerology and lithology was completed for reverse circulation drilling programmes completed by Robe Exploration Pty Ltd during 1997-1998 and 2005-2007. • 2012 - 2017 drillholes were geologically logged utilising standard Rio Tinto Iron Ore Material Type Classification Scheme (RTIO MTCS) logging codes and entered into the Rio Tinto Iron Ore acQuire™ database (RTIODB) on field Toughbook laptops. • Internal training and validation of logging included RTIO MTCS identification and calibration workshops, peer reviews and validation of logging versus assay results. • Geological logging was performed on 2 m intervals for all reverse circulation drilling. • Magnetic susceptibility readings were taken using a Kappameter for each interval. • All drillholes were geophysically logged using down-hole geophysical tools to record gamma trace, caliper, density, resistivity, magnetic susceptibility and magnetic deviation. • Open-hole acoustic and optical televiewer image data was collected in specific reverse

	circulation holes throughout the deposit for structural analyses. • All diamond drill core and reverse circulation chip piles were photographed digitally and files stored on Rio Tinto network servers.

Sub-sampling techniques and sample preparation	Sub-sampling techniques:
	• Wet reverse circulation drilling was sampled at 2 m intervals. Sub-sampling was carried out using a rotary cone splitter beneath a cyclone return system, producing approximate mass splits of:
	  o 'A' split – Analytical sample – 8%;
	  o 'B' split – Retention sample – 8%;
	  o Bulk Reject – 84%.
	
	Sample preparation of the 'A' split sample:
	• Samples were dried at 105° C.
	• Samples were crushed to -3 mm using a Boyd Crusher and split using rotary and linear sample divider to capture 1 – 2.5 kg samples.
	• A robotic LM5 was used to pulverise the total sample (1 – 2.5 kg) to 90% of the weight passing through a 150 micrometers (µm) sieve.
	• A 100 gram sub-sample was collected for analysis. The sub-sampling process has been assessed and deemed appropriate for the deposits mineralisation style.

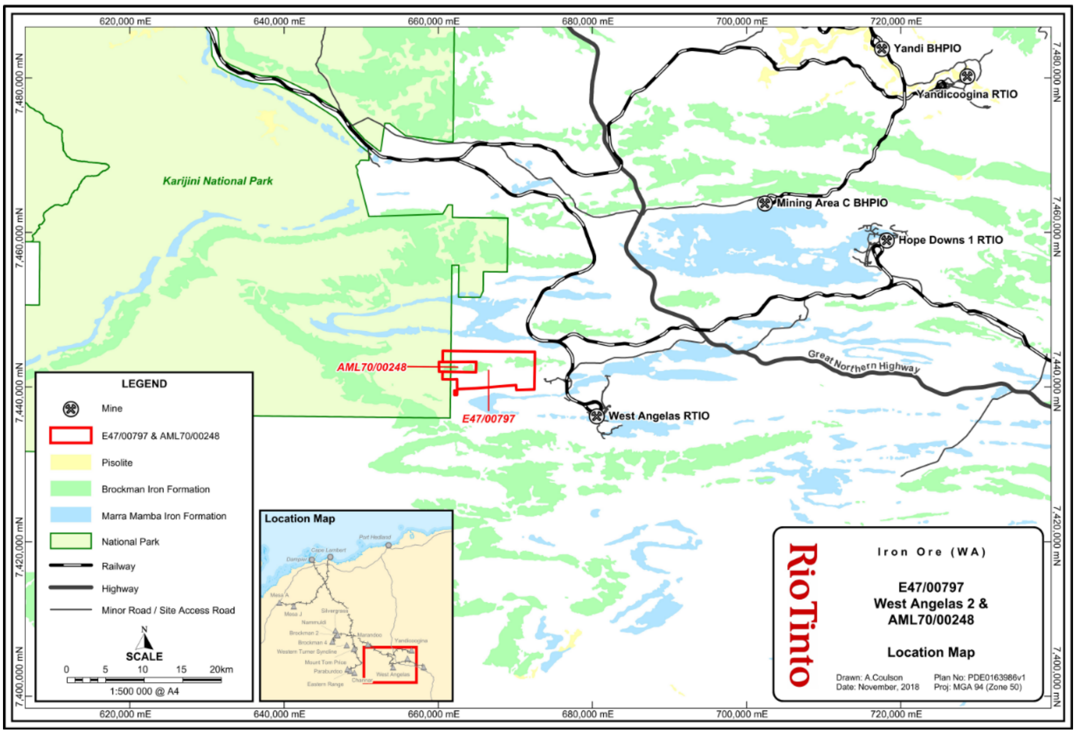
Quality of assay data and laboratory tests	Assay methods: • The assaying of all samples used in the Mineral Resource estimates have been performed by independent National Association of Testing Authorities (NATA) certified laboratories. • Fe, SiO_2, Al_2O_3, TiO_2, Mn, CaO, P, S, MgO, K_2O, Zn, Pb, Cu, Ba, V, Cr, Cl, As, Ni, Co, Sn, Sr, Zr and Na were assayed using industry standard lithium tetraborate and lithium metaborate fusion and X-Ray Fluorescence (XRF) analytical techniques. • Loss on Ignition (LOI) was determined using an industry standard Thermo-Gravimetric Analyser (TGA) and was measured at three steps of temperatures: 140° - 425° C, 425° - 650° C, 650° - 1000° C. • Samples were dispatched to Perth for preparation and analytical testing at Bureau Veritas Minerals Pty Ltd laboratory (formerly Ultratrace Laboratories). Quality assurance measures include: • Insertion of coarse reference standards by Rio Tinto Iron Ore geologists was undertaken at a rate of one in every 30 samples in mineralised zones and one in every 60 samples in waste zones with a minimum of one standard per drillhole. Reference material was prepared and certified by Rio Tinto Iron Ore following ISO 3082:2009 (Iron Ores – Sampling and sample preparation procedures) and ISO 9516-1:2003 (Iron Ores – Determination of various elements by X-ray fluorescence spectrometry – Part 1: Comprehensive procedure). • Coarse reference standards contained a trace of strontium carbonate that was added at the time of preparation for ease of identification. • Field duplicates were collected as a 'B' split retention sample, which was taken directly from the rig splitter. Duplicate insertion occurred at a frequency of one in 20. Trace zinc was included in the duplicate sample for identification. • At a frequency of one in 20, -3 mm splits and pulps were collected as laboratory splits and repeats respectively. These sub-samples were analysed at the same time as the original sample to identify grouping, segregation and delimitation errors. • Internal laboratory quality assurance and quality control measures involved the use of internal laboratory standards of certified reference material in the form of pulps, blanks and duplicates. • Random re-submission of pulps at an external laboratory was performed following analysis. • Chemical Analysis Testing (CAT) and Analytical Precision Testing (APT) samples were collected at a frequency of one per batch. They were submitted to a third-party laboratory (Geostats) to check analytical precision and accuracy, as part of the Rio Tinto Iron Ore quality assurance and quality control (RTIO QA/QC) procedures. • Analysis of the performance of certified standard and field duplicates has indicated an acceptable level of accuracy and precision without any significant bias.
Verification of sampling and assaying	• In 2016, four reverse circulation holes from the 2014 and 2015 drill programmes were twinned with diamond holes for metallurgical purposes. • Analysis of the twinned drillhole assay data distributions showed that the drilling methods displayed similar grade and geological distributions, and verified the suitability for reverse circulation samples to be used in the Mineral Resource estimate.

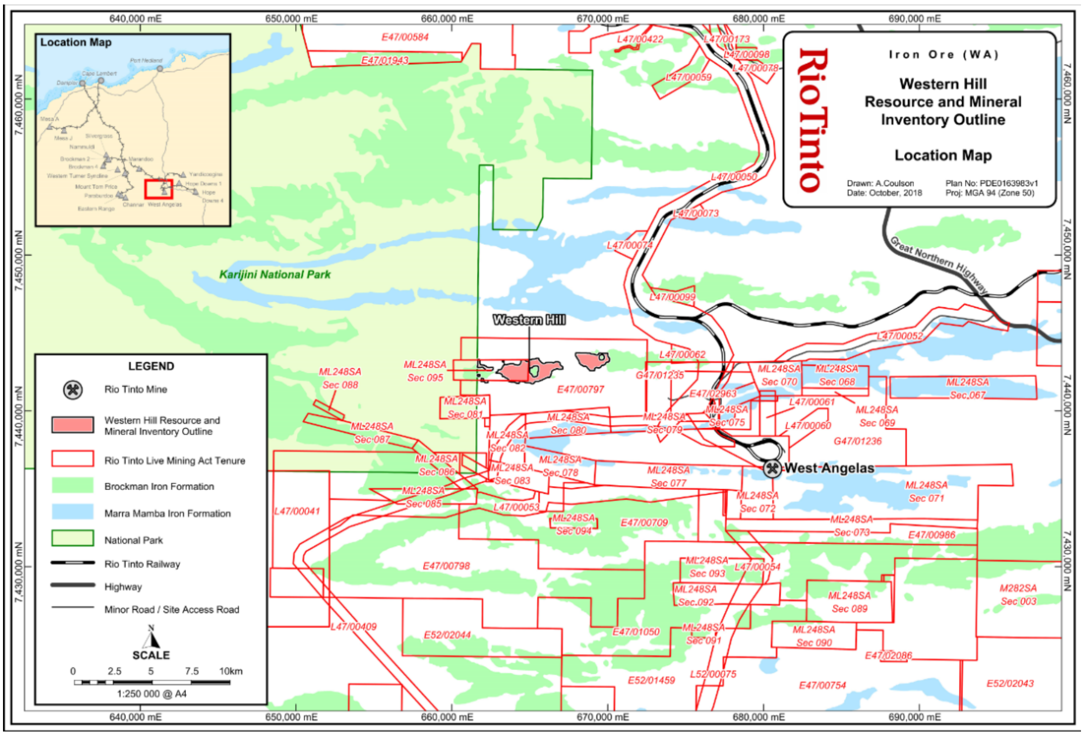
	• Field data was logged directly onto field Toughbook laptops using pre-formatted and validated logging templates, with details uploaded to the RTIODB on a daily basis. • The assaying of all samples used in Mineral Resource estimates have been performed by independent National Association of Testing Authorities (NATA) certified laboratories. • Assay data was returned electronically from the laboratory and uploaded into the RTIODB. • Assay data was only accepted in the RTIODB once the quality control assessment was completed. • Written procedures outline the processes of geological logging and data importing, quality assurance and quality control validation and assay importing. A robust, restricted-access database was in place to ensure that any requests to modify existing data go through appropriate channels and approvals, and that changes are tracked by date, time, and user. • Assay data has not been adjusted.
Location of data points	• The drillholes were surveyed in Mine Grid of Australia 1994 (MGA94) Zone 50 coordinates using Differential Global Positioning System (DGPS) survey equipment, which was accurate to 10 cm in both horizontal and vertical directions. Upon receipt of the coordinate data, it was validated against the planned drillhole coordinates, and then uploaded to the drillhole database. • All holes were surveyed by qualified surveyors. • 1997 and 1998 drillholes were surveyed by West Angelas mine site surveyors in AMG84 co-ordinates (subsequently translated to MGA94 in the RTIODB). Visual field checks on a number of these holes were subsequently carried out to ensure they were robust for use in the geological interpretation. • Down-hole surveys were conducted on every hole, with the exception of collapsed or otherwise hazardous holes. Significant, unexpected deviations were investigated and validated. Holes greater than 100 m depth were surveyed with an in-rod gyro tool. • All holes interpreted and used in the model had surveyed coordinates. • Drillhole collar reduced level (RL) data was compared to detailed topographic maps and showed that the collar survey data was accurate. • The topographic surface has been derived from a composite surface developed from 30 m resolution Shuttle Research Topographic Mission (SRTM) data, and 5 m resolution Light Detecting and Ranging (LiDAR) data. Accuracy of the topographic surface was further enhanced by incorporation of additional spot height data including the validated DGPS drilhole collar points generated in each successive drilling campaign.
Data spacing and distribution	• The drill spacing across the deposit is varied. The overall spacing is 200 m x 50 m, with intermittent in-fill to 100 m x100 m. The western part of the drilling has been conducted on a nominal 200 m x 100 m grid pattern. • The data spacing within mineralised domains for the Western Hill deposit have demonstrated sufficient continuity in both geology and grade to support the definition of Mineral Resources, and the classifications applied under the 2012 JORC Code guidelines. • Sample compositing has not been performed.
Orientation of data in relation to geological structure	• Drill lines were oriented north – south (N-S), approximately perpendicular to the deposit strike. • Stratigraphy is gently undulating, with mineralisation focused within a synclinal structure. • Drilling was predominantly vertical with some angled holes drilled at -70°, to allow for better intersection of the stratigraphy and collection of televiewer data. • While mineralisation was frequently intersected at an angle, the orientation of mineralisation relevant to drilling was not considered likely to have introduced any material bias.
Sample security	• The sample chain of custody was managed by Rio Tinto Iron Ore Ltd. • Analytical samples (‘A’ splits) were collected by field assistants, placed into bulk bags and delivered to Perth by recognised freight service and then to the assay laboratory by a Perth-based courier service. Whilst in storage the samples were kept in a locked yard. • Retention samples (‘B’ splits) were collected and stored in drums at on-site facilities. • 150 grams of excess pulps from primary samples were retained indefinitely at laboratories and external storage facilities at CTI Logistics Ltd in Perth, Western Australia.
Audits or reviews	• External audits have not been performed specifically on the sampling techniques or data. • Internal Rio Tinto Iron Ore peer review processes and internal Rio Tinto technical reviews were completed. These reviews concluded that the fundamental data collection techniques were appropriate.

SECTION 2 REPORTING OF EXPLORATION RESULTS

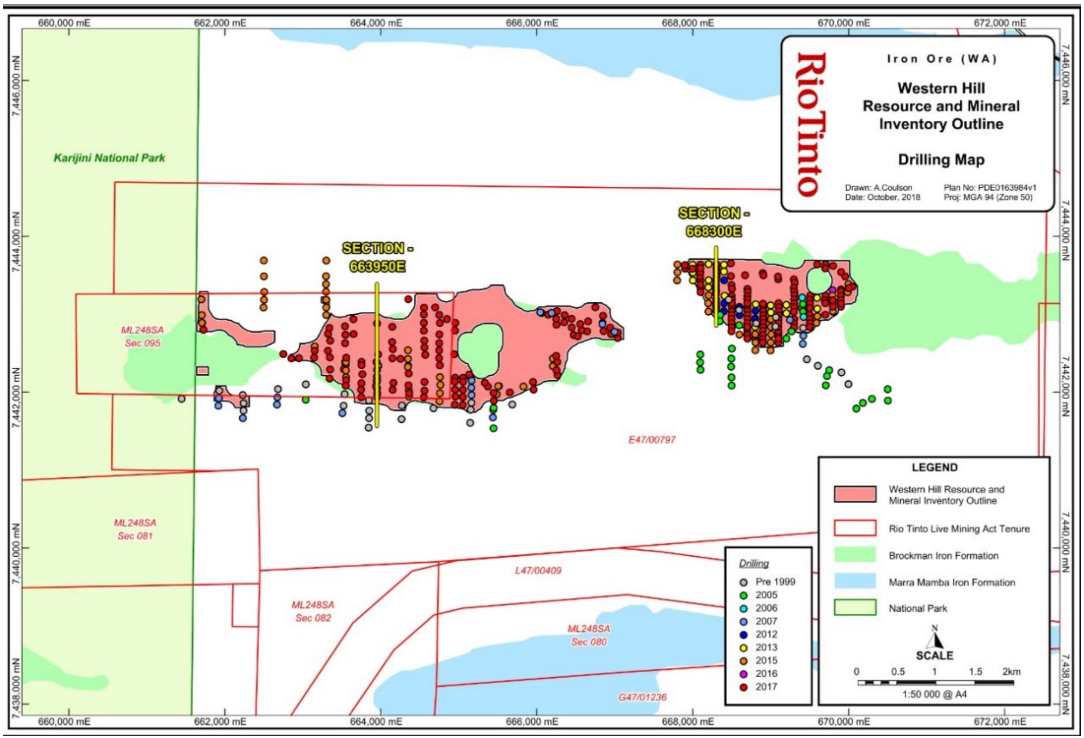
<table>
<tr><th>Criteria</th><th>Commentary</th></tr>
<tr><td>Mineral tenement and land tenure status</td><td>The Western Hill deposit is located within Mineral Lease (ML) 248Sa Sec 095 and Exploration License E47/00797.
The above tenure is subject to the ROBE Joint Venture Agreement. The present ownership of the joint venture and the tenement is as follows:
Rio Tinto Ltd 53%;
Mitsui & Co 33%;
Nippon Steel & Sumitomo Metal Corporation14%.
There are currently no known or anticipated impediments to developing the resources within these tenures.</td></tr>
<tr><td>Exploration done by other parties</td><td>Exploration was completed by Cliffs International Drilling Pty Ltd during 1974 and by Robe Exploration Pty Ltd in two drilling programmes, 1997-1998 and 2005-2007.
All data is currently available within Rio Tinto databases and most of this data has been used for the Mineral Resource estimate.</td></tr>
<tr><td>Geology</td><td>Western Hill is located on the northern flank of the Wonmunna anticline.
Mineralisation was interpreted to be primarily derived from supergene enrichment of the Brockman Banded Iron Formation (BIF), to form a high phosphorous, hematite-goethite dominant iron ore; primary mineralisation occurs within the Dales Gorge Member, with an additional component of weathered or re-deposited material classified as detritals.
Approximately 24% of the Mineral Resource lies below the water table.</td></tr>
<tr><td>Drill hole Information</td><td>Summary of drilling data used for the Western Hill Mineral Resource estimate:
<table>
<tr><th rowspan="2">Year</th><th colspan="2">Reverse Circulation</th><th colspan="2">Diamond Drill</th></tr>
<tr><th># Holes</th><th>Metres</th><th>#Holes</th><th>Metres</th></tr>
<tr><td>2005</td><td>27</td><td>1,566</td><td></td><td></td></tr>
<tr><td>2006</td><td>7</td><td>394</td><td></td><td></td></tr>
<tr><td>2007</td><td>17</td><td>650</td><td></td><td></td></tr>
<tr><td>2012</td><td>7</td><td>740</td><td></td><td></td></tr>
<tr><td>2013</td><td>19</td><td>1,978</td><td></td><td></td></tr>
<tr><td>2015</td><td>64</td><td>4,432</td><td>4</td><td>560</td></tr>
<tr><td>2016</td><td></td><td></td><td>7</td><td>767</td></tr>
<tr><td>2017</td><td>282</td><td>24,493</td><td>12</td><td>1,020</td></tr>
<tr><td>Total</td><td>423</td><td>34,253</td><td>23</td><td>2,347</td></tr>
</table>
Drilling data prior to 2005 was not used in the Mineral Resource estimate as it was deemed of insufficient quality.</td></tr>
<tr><td>Data aggregation methods</td><td>Compositing was not deemed necessary as samples were collected at 2 m intervals.
Grade truncations were not performed.</td></tr>
<tr><td>Relationship between mineralisation widths and intercept lengths</td><td>Drilling programs were designed to intersect dipping mineralised sequences as close as practically possible to perpendicular.
In general, down-hole intercept lengths are deemed to provide an acceptable representation of true mineralisation widths due to vertical or near-vertical drilling and the predominance of gently dipping to moderately undulating strata.
Where stratigraphy is more tightly folded and displaying steeper dips, the difference between down-hole and true thickness was resolved graphically via sectional and three-dimensional interpretation of mineralisation boundaries, based on the prevailing bedding, and stratigraphic and structural controls.</td></tr>
</table>

Diagrams	Location Map

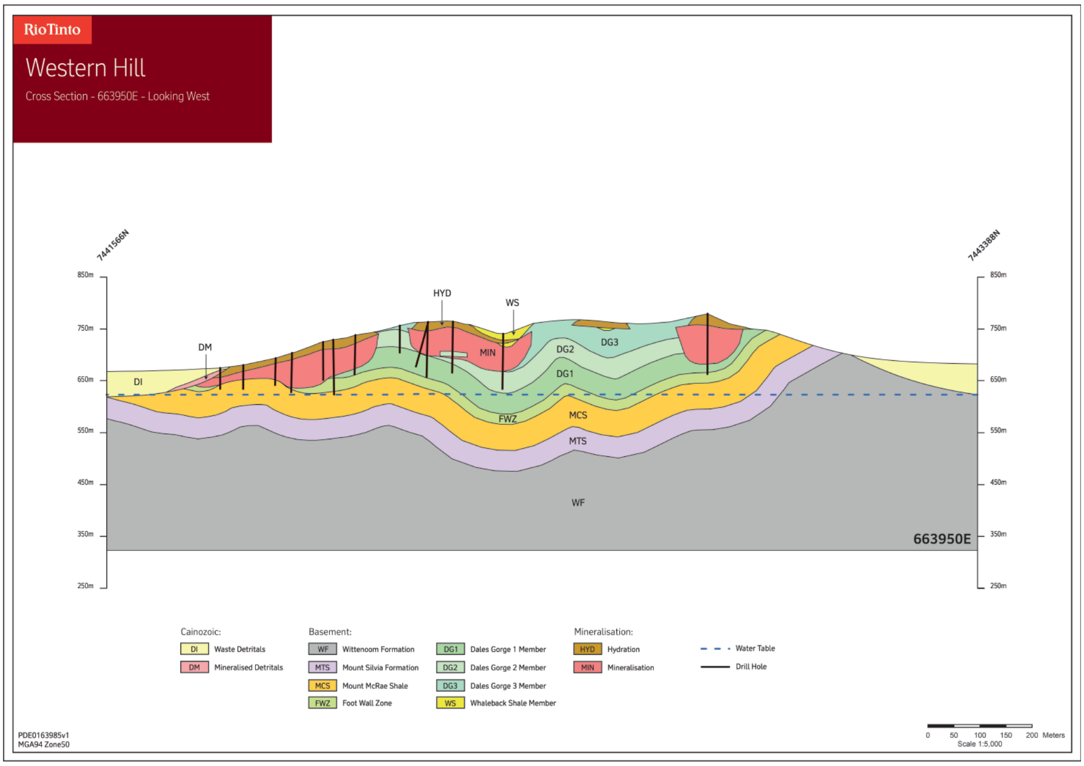


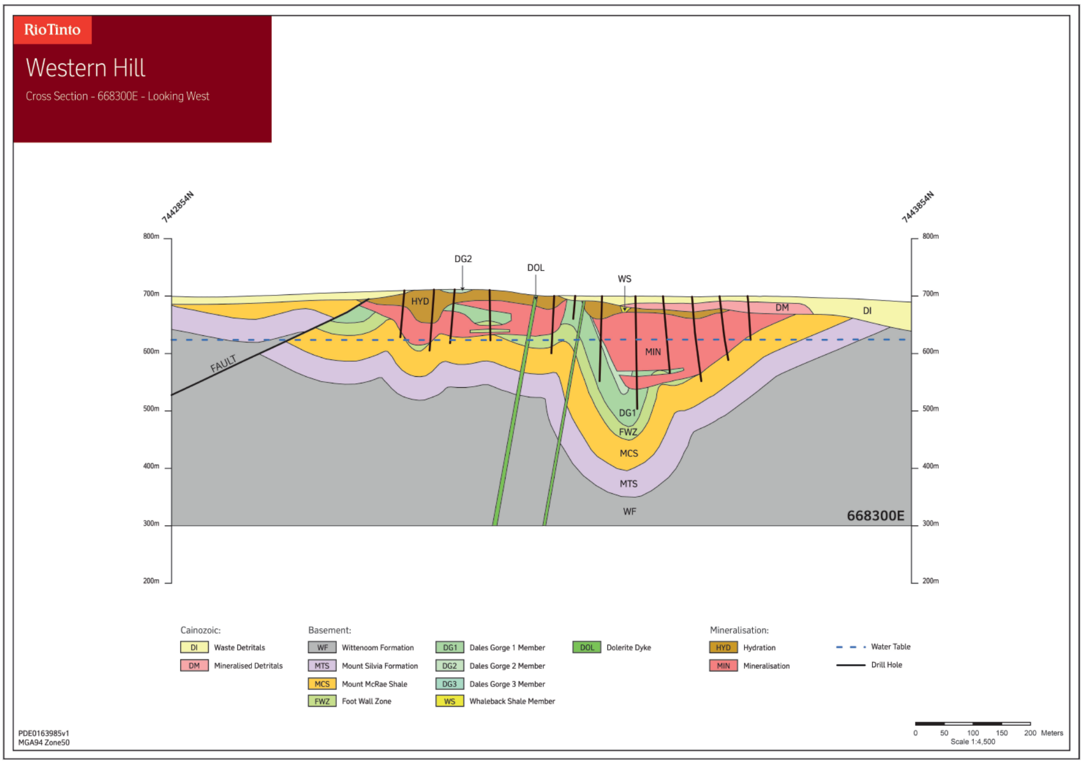


Drillhole Locations Map



Geological Cross Sections





Balanced reporting	• Not applicable as Rio Tinto has not specifically released exploration results for this deposit.
Other substantive exploration data	• Detailed geological surface mapping was collected at Western Hill in 2014, at 1:5,000 scale. Additional 1:10,000 scale mapping by Robe Exploration Pty Ltd is also available through the area. • West Angelas district gravity images, West Angelas district electromagnetic “SkyTEM” survey and GSWA Ashburton Magnetics survey geophysical data has been used where necessary to aid interpretation of stratigraphy.
Further work	• Further work at Western Hill is required to better define the orebody geometry and grades, and improve structural understanding. Additional infill reverse circulation drilling is required across the deposit. • Diamond drilling for metallurgical, density, and geotechnical purposes is required across the deposit.

SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

Criteria	Commentary

Database integrity	• All drilling data is securely stored within the Rio Tinto Iron Ore acQuire™ database (RTIODB) and is managed by a dedicated team within Rio Tinto Iron Ore. The system is backed up nightly on servers located in Perth, Western Australia. The backup system was tested in January 2018, demonstrating that the system is effective.
	• The import/exporting process requires limited keyboard transcription and has multiple built-in safeguards to ensure information is not overwritten or deleted. These include:
	  ○ Data is imported and exported through automated interfaces, with limited manual input;
	  ○ Automated validation checks ensure errors are identified prior to import;
	  ○ Once within the RTIODB, editing is very limited and warning messages ensure accidental changes are not made;
	  ○ Audit trail records updates and deletions should an anomaly be identified;
	  ○ Export interface ensures the correct tables, fields and format are selected.
	• The drillhole database used for Mineral Resource estimation has been internally validated. Methods include checking:
	  ○ acQuire™ scripts for relational integrity, duplicates, total assay and missing or blank assay values;
	  ○ Grade ranges in each domain;
	  ○ Domain names and tags;
	  ○ Survey data down-hole consistency;
	  ○ Null and negative grade values;
	  ○ Missing or overlapping intervals;
	  ○ Duplicate data.
	• The drillhole data was also validated visually by domain and compared to the geological model.

Site visits	• The Competent Person has not visited the Western Hill deposit. • No site visits have been undertaken at this stage as development of the deposit is outside the current five year mine plan.
Geological interpretation	• Overall, the Competent Person's confidence in the geological interpretation of the area is good, based on the quantity and quality of data available, and the continuity and nature of the mineralisation. • Geological modelling was performed by Rio Tinto Iron Ore geologists. The method involves interpretation of stratigraphy using surface geological mapping, lithological logging data, down-hole gamma data, and assay data. • Cross-sectional interpretation of each stratigraphic unit is performed, followed by interpretation of mineralisation boundaries. Three-dimensional wireframes of the sectional interpretations are created to produce the geological model. • Mineralisation is continuous; it is affected by stratigraphy, structure and weathering. The drillhole spacing is sufficient to capture density, grade and geology variation for Mineral Resource reporting. • The geological model is sub-divided into domains and both the composites and model blocks are coded with these domains.
Dimensions	• The Western Hill deposit extends approximately 9 km along strike in an east-northeast direction, up to 1.6 km across strike and to a maximum depth of 280 m below the current topographical surface.
Estimation and modelling techniques	• Ten grade attributes (Fe, SiO_2, Al_2O_3, P, Mn, LOI, S, TiO_2, MgO, and CaO), and density were estimated for input into Mine Planning and Marketing assessments. • Statistical analysis was carried out on data for all domains. • The grade estimation process was completed using Maptek™ Vulcan™ software. • A block size of 100 m (X) × 25 m (Y) × 10 m (Z) was used for parent blocks. Parent blocks were sub-celled to the geological boundaries to preserve volume. • Estimates were completed on parent blocks. • Mineralised domains were estimated by ordinary kriging. Non-mineralised domains were estimated by inverse distance weighting to the second power (ID^2) or assigned average grades via scripting. These methods are deemed appropriate by the Competent Person for estimating the tonnes and grade of the reported Mineral Resources.

Criteria	Commentary
	• A 'high yield limit' or grade-dependent restriction on a sample's range of influence was used for Mn, CaO and S for selected domains. The limits differed for different domains and were selected based on histograms and the spatial distribution of the respective assay values. • Grades were extrapolated to a maximum distance of approximately 400 m from data points. • The estimated model was validated using a combination of visual, statistical, and a check estimate using multivariate global change of support techniques. No production data is available for reconciliation.
Moisture	• All Mineral Resource tonnages are estimated and reported on a dry basis.
Cut-off parameters	• The cut-off grade for Brockman and Detrital Mineral Resource is material greater than or equal to 60% Fe. • The cut-off for Brockman Process Ore is material 50% ≤ Fe < 60% and ≤3% Al_2O_3 < 6%
Mining factors or assumptions	• Development of this Mineral Resource assumes mining using standard Rio Tinto Iron Ore equipment and methods similar to other Rio Tinto Iron Ore operations. The assumed mining method is conventional truck and shovel open pit mining at an appropriate bench height. Mining practices will include grade control utilising blast hole data. • It is planned to blend ore from Western Hill with ore from other Rio Tinto Iron Ore mine sites to make a saleable ore product. This plan is in line with current Rio Tinto Iron Ore practices where ore from multiple mines is combined to produce the Pilbara Blend product.
Metallurgical factors or assumptions	• It is assumed that standard crushing and screening processes used by Rio Tinto Iron Ore will be applicable for the processing of Western Hill.
Environmental factors or assumptions	• Rio Tinto Iron Ore has an extensive environmental approval process, and environmental studies will be completed during the project study phases to determine if the project requires formal State and Commonwealth environmental assessment and approval. • Mapping of oxidised shales, black carbonaceous shales, lignite, and the location of the water table, is used in prediction and planning for the treatment of potential environmental impacts. This process is in accordance with Rio Tinto's Chemically Reactive Mineral Waste Standard.

Bulk density	• Dry bulk density is derived from accepted gamma-density data collected at 10 cm intervals from down-hole geophysical sondes. Accepted gamma-density data is corrected for moisture using diamond drill core specifically drilled throughout the deposit.
	• Dry core densities are generated via the following process:
	  ○ The core volume is measured in the split and the mass of the core is measured and recorded;
	  ○ Wet core densities are calculated by the split and by the tray;
	  ○ Core recovery is recorded;
	  ○ The core is then dried and dry core masses are measured and recorded;
	  ○ Dry core densities are then calculated.
	• Accepted gamma-density values at Western Hill were estimated using ordinary kriging in mineralised zones and inverse distance weighted to the second power in waste zones.

Classification	• The Mineral Resource has been classified into the categories of Indicated and Inferred. The determination of the applicable resource category has considered the relevant factors (geology, mineralisation continuity, sample spacing, data quality, and others). • Approximately 84% of the Western Hill Mineral Resource lies above the water table. • The Competent Person is satisfied that the stated Mineral Resource classification reflects the relevant factors of the deposit.
Audits or reviews	• All stages of the Mineral Resource have undergone an internal peer review process, which has documented all phases of the process. The Resource estimate has been accepted by the peer reviewer as well as the Competent Person.
Discussion of relative accuracy/ confidence	• Rio Tinto Iron Ore operates multiple mines in the Pilbara region of Western Australia. The Mineral Resource data collection and estimation techniques used for Western Hill are consistent with those applied at other deposits where mining has commenced. Reconciliation of actual production with the Mineral Resource estimates for individual deposits is generally accurate to within ten percent for tonnes on an annual basis. This

Criteria	Commentary
	result is indicative of a robust process. • The accuracy and confidence of the Mineral Resource estimate is consistent with the current level of study (Order of Magnitude Study).