Increase to Jadar Project Mineral Resources

2 March 2017

Included in Rio Tinto's annual Mineral Resources and Ore Reserves tables, released to the market today as part of its 2016 Annual report, are increases in Mineral Resources for Rio Tinto's 100 per cent-owned Jadar Lithium and Borates Mineral Project in Jadar, Serbia.

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. As such, the reported increases relating to the Jadar project requires the additional supporting information set out in this release and its appendix.

Rio Tinto's Ore Reserves and Mineral Resources are set out in full in its 2016 Annual report.

During 2016, Jadar Mineral Resources have increased by 19Mt from 117Mt to 136Mt, a 16 per cent increase, including the first release of Indicated category Mineral Resources.

The updated Mineral Resource estimate comprises:

- Indicated Resource: 52.4 Mt @ 1.79% Li_2O, 19.2% B_2O_3
- Inferred Resource: 83.3 Mt @ 1.90% Li_2O, 13.0% B_2O_3
- Total Mineral Resource: 135.7 Mt @ 1.86% Li_2O, 15.4% B_2O_3

Equivalent borate product resources are 21Mt of B_2O_3.

The upgrades have resulted from continuing orebody knowledge programmes undertaken at Jadar by Rio Tinto. This increase in orebody knowledge has been obtained from the following work programmes which represent components of the Pre-Feasibility study currently underway:

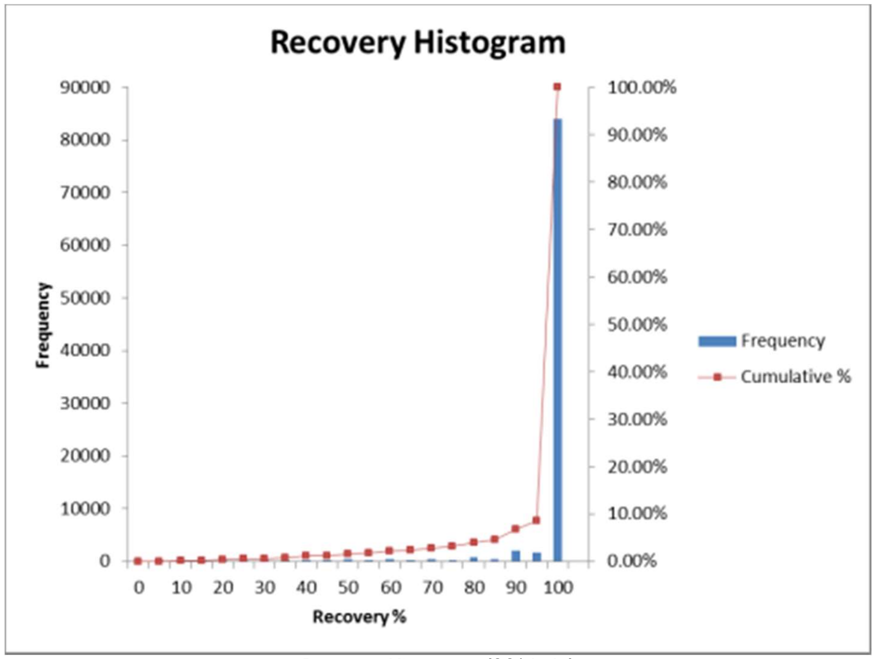
- 3D seismic data processing and interpretation.
- Consolidating and analysing a large volume of new geology data sets from previous drilling campaigns.
- Reinterpreting and standardising all Jadar structural and geology models, allowed by the expanded range of available data sets.
- Improved understanding of the lithostratigraphy and controls on mineralisation.
- Adopting new Mineral Resource estimation methods.

Jadar Project - Table 1

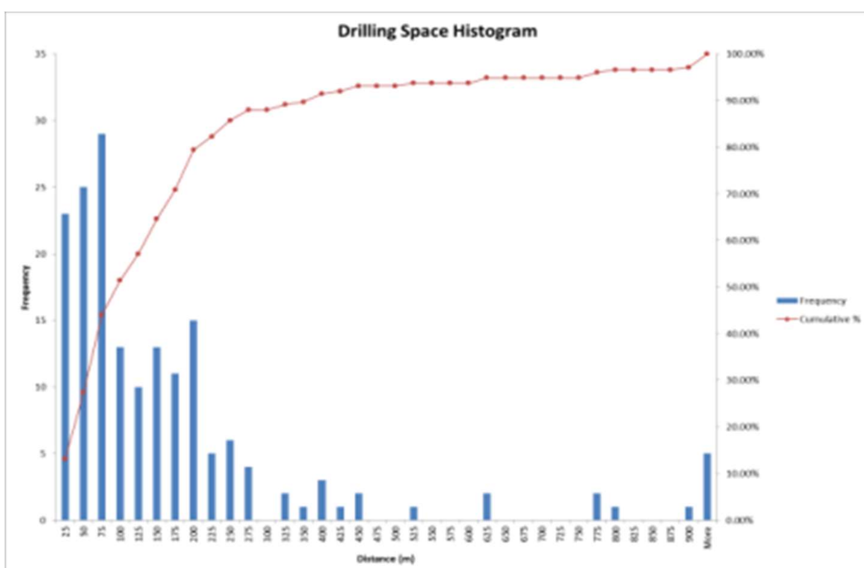
The following table provides a summary of important assessment and reporting criteria used at the Jadar Project for the reporting of mineral resources in accordance with the Table 1 checklist in *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition)*. Criteria in each section apply to all preceding and succeeding sections. Section 4 is omitted due no reported Reserves.

SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	Commentary
Sampling techniques	• All samples for assaying and density determination are taken from predominant HQ3 (some PQ3 and rarely NQ3) vertical or occasionally inclined core drilling. • Sample representativity is ensured by drilling on a grid that is generally evenly spaced at average of 130 m, but with closer spacing at certain locations so that geostatistical measures are informed. Most holes are drilled through the entire Jadarite-bearing sequence into visibly low-grade material below the Lower Jadarite Zone. Drill core size is considerably larger than grain size, and orientation approximately perpendicular to the bedding ensures that each sample is representative of the beds through which it passes.
Drilling techniques	• Since 2004 a total of 310 drill holes (125,904.6 m) were drilled for resource, geotechnical, hydrogeological, sterilisation, etc. drilling programs. The holes are up to 837.6 m in length with average of 575 m. The drill holes were normally planned as vertical, except 37 inclined holes orientated to intercept structural features, regularly surveyed after drilling. • A total of 175 drill holes (100,622 m) support the Resource estimation (100% cored drilling). • Coring is predominantly HQ3 – standard triple-tube wireline drilling bit, with some early holes reduced to NQ3 at depth. • Bulk sample drilling for pilot plant metallurgical test-work was taken from 11 large-diameter (500 mm) RC drill holes and from one large-diameter (368 mm) core hole. A limited number of PQ3- standard triple-tube wireline drill holes (14 holes, 9,253.1m in total) were also drilled for metallurgical sampling. • A number (54) of open rotary bit holes (86-244mm) were also drilled as a part of hydrogeological drilling program (installed: piezometers, wells, shallow wells, etc.) for ground water monitoring.
Drill sample recovery	• All core is usually un-broken with excellent recovery (total average of 97.3%). Core loss is mostly recorded in the near surface (up to 30-35 m) in alluvium, well above the mineralised horizons. Vugs or cavities are rarely seen. Some ‘disking’ occurs, usually because of low adhesion of one bed to another and the occurrence fine-grained phyllosilicates – i.e. clays - on bedding faces, though this does not materially impact recovery. • Core recovery in jadarite mineralization is generally excellent (98.8% in average) and no relationship between reduced recovery and mineralization has been observed. Sample bias due to preferential loss/gain of fine/coarse material in Jadarite mineralization is considered very unlikely. Jadarite particles adhere to their matrix during drilling, and are cut through at core edges. Neither the particles nor the matrix are lost preferentially. An exception occurs in the NaBo zone, where occasional bands of a higher-solubility borate mineral is ‘necked’ down, but calculations indicate that the consequent bias is negligible (loss of pure borax is estimated to bias positively the assay results by +0.06%).

	• When lower core recovery is obtained, this is usually due to structural fracturing, producing brecciated core. Holes with less than 85% recovery in total or less than 95% recovery in mineralisation are re-drilled. • HQ core in 0.6 m-long core boxes is taken to the core shed where recovery per meter is estimated and recorded by the logging geologist. For the PQ holes PVC core boxes 1m-long were used, with the same logging procedure applied. • Large diameter (86-244mm) drilling uses a rotary bit to obtain samples of large chippings, with acceptable recovery calculated on a 1 m long sample weight/estimated weight base but these are only used for process test-work and are not used for Mineral Resource estimation.  Recovery Histogram (261 hole)
Logging	• All core has been photographed both dry and wet and logged by geologists for geotechnical features, lithology, stratigraphy, visible mineralization and other characteristics (grainsize, texture, colour, etc.). • Logging is done in the core shed, directly using dedicated laptops, with logging templates that will only accept pre-defined codes or values within numeric ranges. For the 2016 drilling campaign an acQuire off-line logging modules (synchronised with main database) was implemented for lithology, mineralogy and geotechnical logging. • Logging is currently peer reviewed and regularly supervised by a senior Project Geologist. During 2015 and 2016 a separate core re-logging program covered the main mineralized section for 87 holes drilled in previous years. The validated dataset has been used to develop geo domains to support resource estimation, mining, hydrogeology, geotechnical and metallurgical studies. • Down-hole logging was performed using a variety of probes for deviation surveys, calliper and temperature. This included geophysical logging to record the orientation of bedding, structures, and for other geotechnical measurements (ABI, N-Gamma, porosity, Density, MagSus, etc.).
Sub-sampling techniques and sample preparation	• Core sampling is completed at the core shed, after logging, based on sampling criteria determined by Jadar project Sampling Procedure. • Early holes sampled all core with longer sample intervals in un-mineralized lengths. In 2010 a review of results for un-mineralized intervals demonstrated that these were of very low grade (near analytical method detection limit) and not of economic interest. From that moment (from hole JDR_38) sampling is based on core intervals containing visible jadarite or borate mineralization, extended for a further 4 samples

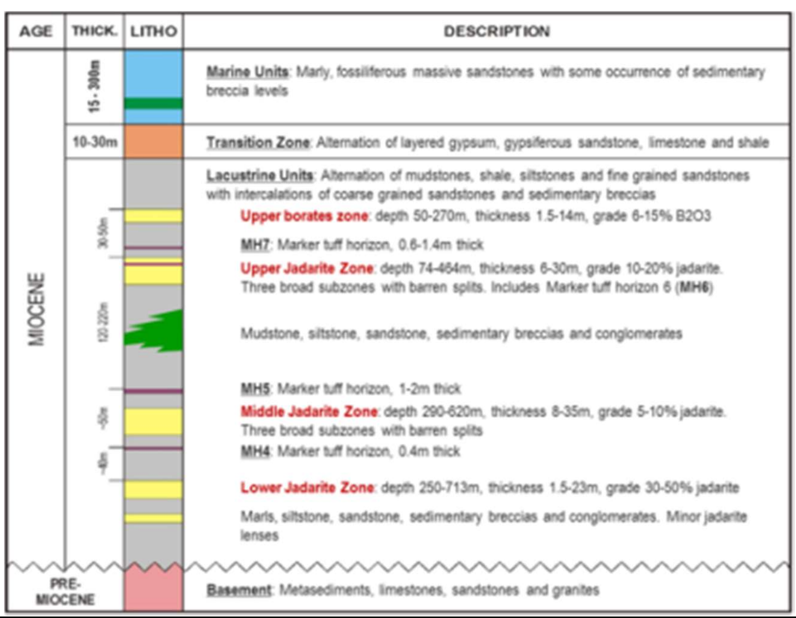
	above and below observed mineralisation. • HQ3 is sampled by quarter-core, generally 1 m length quarter core is processed, with the remainder being retained for later submission as duplicates, re-assay etc. Sampling from NQ3 intervals is half core. All cores are cut by diamond saw. • Sampling from the 2015 and 2016 PQ3 bulk sampling drilling program used a diamond core side-cut (6-7mm) with the remaining core being send to pilot plant for processing test-work. PQ3 sample lengths were assigned based on lithological-geodomain boundaries. • Pre 2011 drill hole samples were prepared in an external preparation laboratory in Belgrade. Since 2011 sample preparation is completed at Jadar core shed facilities, from where sealed pulp batches are sent to the ALS Laboratory for assaying. Last batches from 2016 were also prepared in an external laboratory (ALS Laboratory Services in Bor, Serbia) due to the limited in house capacity. In total 25,699 samples were prepared for the project, 5,460 of them in external facilities and 20,239 at Jadar prep-laboratory. • Samples as received at the lab are weighed, immersed in water for volumetric measurement and then dried at temperature just under 60°C, for a minimum of 24 hours. The low temperature precludes thermal decomposition or dehydration of minerals present in the ore, so no crystal water losses occurs during drying. • After drying, samples are weighed again to determine dry bulk density, and then the entire sample is crushed to -1.4 mm in two stages (first stage to –2 mm by jaw crusher and in second stage to -1.4 mm by rotary crusher, both stages >85% passing). • The crushed sample is subsampled in a rotary splitter to obtain 200-300g, pulverized to -75 µm (>85% passing) and then riffle split to produce 100-150g pulp for assaying. The unused rifle split pulp is stored in the sample archive. The sampling procedure is considered appropriate to the mineralization type. Drill quarter-core size is considerably larger than grain size (except where mineralisation occurs in the form of veins) and orientated approximately perpendicular to the bedding. Use of a rotary splitter when the coarse sample size is near the jadarite grain size should ensure no bias introduced in splitting. The final pulp size is much smaller than the grains which will break by brittle fracturing to ensure full homogenization so that the pulp is representative.
Quality of assay data and laboratory tests	• A general quality assurance/quality control (QAQC) involving duplicate samples in every stage (core duplicates, crush, pulp and laboratory stage duplicates) is implemented. All results are assessed via crossplots and statistics for precision and accuracy. • The following QA/QC controls are inserted in each batch of pulps: – 1^{st} and every 40^{th} are blanks, – Every 20^{th} is a field duplicate, from a 2^{nd} quarter-core from a sample in the same batch, – Every 20^{th} is a coarse duplicate – prepared from a second split of the rotation splitter, – Pulp duplicates are produced by ALS and reported at a frequency of 1 in 20 of the pulps they receive. – Standards are inserted in pairs (one high-grade & one low-grade) every 20^{th} • From mid-2015 QA/QC the procedure was modified to include a full set of cascaded duplicates from core to pulp , where every 20^{th} primary sample was twinned by a core duplicate and each of these duplicated at crush and pulp stages, resulting in 8 individual pulps for assaying. • The standard suite of assays includes: Li_2O, B_2O_3, SiO_2, Fe_2O_3, CaO, MgO, Na_2O, K_2O, MnO and SrO. Additional assays as, C_GAS05, S_IRO7, C_CO3_NONLECO, S_SO3_NONLECO, Cl and F were conducted on selected samples for processing testing purposes. • Early samples (till 2012) were assayed at the SGS-Lakefield laboratory in Ontario, Canada, where samples for lithium and boron were prepared by KOH fusion and then assayed by ICP-AES. In 2012 the decision was made to switch laboratory for improved

	turnaround times and to use a broadly adopted fusion package comparable across labs. A round robin test involving six laboratories was conducted and since all lithium and boron samples have been assayed by ALS-Vancouver using Na_2O_2 fusion followed by ICP-AES. Both laboratories used XRF for the determination of major oxides.
Verification of sampling and assaying	• High and low -grade intersections visibly identified & verified by Rio Sava geologists • Sample details are recorded directly into templates in laptops. All data transfer is electronic covered by an agreed protocol and procedures (sampling data entry procedure, assays data verification and data storage into a database). • Lithium and boron assays are verified against visual mineral estimates and cross checked against core where discrepancies are noted. • The acQuire software was used for data validation by standard QAQC procedure. There is no post adjustment to assays. • There are no twinned holes in the project area.
Location of data points	• All surveyed coordinates are within Serbian Gauss Kruger projection system, using the Hermannskogel datum, Zone 6 (MGI_Zone_6). • Drill-hole collars post drilling survey is conducted by an external licensed surveyors company, Geomax, using a total station instrument SOKKIA-SET610 with stated accuracies of 2mm ± 2mm/km. • Down-holes surveys including deviation are carried out by an external company, Fugro, with deviation data exported at 25 m intervals. • All down-hole survey data azimuths (deviation and ABI) are oriented to Magnetic North. Magnetic declination correction were provided by the Serbian Magnetic Institute, and back calculated to determine local monthly average correction factors to be used for True North Geodetic azimuths calculation. • Total of 28 early holes do not have downhole survey data. The 28 un-surveyed holes were collared vertically, and after investigation of deviations in surveyed holes it is considered that locational inaccuracy for un-surveyed holes is within acceptable error, and suitable for use in resource modelling. • In addition, of 16 of the 28 un-surveyed early holes are barren (or very low-grade mineralisation) thus do not impact on the mineralised project area.
Data spacing and distribution	• Drill spacing is in a random arrangement (semi grid) with average drill hole spacing of 130 m. Drill hole spacing range from 25 m around the geostats-cross area, moving up to 500m in the peripheral areas. Drill spacing is sufficient to establish geological and grade continuity, and to support the current Mineral Resource classifications.  Drill hole spacing histogram (261 holes)

Orientation of data in relation to geological structure	• Majority of resource drill holes are vertical resulting in the drilling intersecting the sub-horizontal mineralisation at right-angles. • Geological structures such as faulting are mostly sub-vertical, therefore vertical drilling is unlikely to regularly intersect these structures. • Since 2012, around 31 inclined holes were drilled to intercept interpreted fault structures. These faults displace the ore in the vertical direction and are important for mining studies. • In 2015, a 3D seismic survey, covering 10,5 km^2 was undertaken to improve understanding of the structural model. An additional 6 inclined drill holes were then drilled to confirm the new structural interpretation.
Sample security	• All sampling (cutting, tagging and packing into PVC bags) is conducted within the core shed by technicians based on sample lists, prepared and supervised by geologist. • Most of the samples were prepared in the Jadar prep-laboratory core shed. The pulverised samples were then sealed in plastic bags for despatch to assay laboratory by courier. • Chain of custody was followed insuring that only dedicated personal from Jadar team and assaying laboratory had access to the samples at all stages of the sampling process. • There was no analytical laboratory visits or audits. The ALS–Bor prep-laboratory was randomly visited by Jadar team members when samples are prepared externally. • Remaining pulp material is returned after assaying and stored in the Jadar project main warehouse as well as archive pulp duplicates.

Audits or reviews	• An independent review and resource estimation was undertaken by AMEC in January 2009 which was presented as a fully compliant NI 43-101 report.
	• Two internal resource estimation reviews were conducted by T&I and RTX in Dec. 2012 and November 2013.
	• An internal QAQC review was conducted in December 2013 by a Rio Tinto Exploration senior geologist and Jadar Project CP. A second review was conducted by the end of the 2016 drilling campaign.
	• Jadar Project has had two audits completed in the past five years:
	  – An audit in October 2011 conducted by SRK (Rio Tinto Corporate Assurance QAQC Internal Audit Report - Dec. 2011)
	  – An audit in September 2016 conducted by SRK (Rio Tinto Group Internal Audit Resources and Reserves Internal Audit Report – Oct. 2016)
	• Audits concluded that the fundamental data collection techniques are appropriate and overall internal audit rating is Satisfactory.

SECTION 2 REPORTING OF EXPLORATION RESULTS

Criteria	Commentary
Mineral tenement and land tenure status	• The Jadar Project is owned by Rio Sava Exploration d.o.o., a fully owned subsidiary of Rio Tinto Energy and Minerals Product Group. • The current Jadar Exploration License, granted in 2016, covers an area of 66.8 km^2 and it's valid until March 2018 (Fig. 1).
Exploration done by other parties	• Not applicable - Serbian and American geologists working for Rio Tinto discovered the Jadar deposit in 2004.
Geology	• The Jadar deposit, discovered in 2004 in Western Serbia, is a concentration of lithium and borates in a mineral new to science named jadarite, LiNaSiB3O7(OH). The deposit lies in a valley with flat-lying farmland covering a surface area of 3.0 km by 2.5 km. Known lithium and borate mineralisation lies at depths from 100 m to 720m below surface. • The deposit includes three types of mineralization occurring as stratiform lenses of variable thickness, and hosted in gently dipping sequence of mainly fine-grained sediments that is crossed by faults: - Jadarite LiNaSiB3O7(OH) mineralization, new to science and so far unique to this deposit, occurs within a stratiform sedimentary lacustrine deposit with sub-horizontal beds of Jadarite as rounded grains, nodules, or concretions generally in the range 1mm to 10mm in a siltstone / mudstone matrix. The Jadarite is mainly concentrated in three gently dipping tabular zones known as the Upper, Middle and Lower Jadarite Zones (UJZ, MJZ and LJZ), - Sodium borates (mainly Ezcurrite $Na_4B_{10}O_{17}·7H_2O$, but also Kernite-$Na_2B_4O_7·4H_2O$ and Borax - $Na_2B_4O_7·10H_2O$) occurs as lenses that are interbedded with Jadarite-bearing siltstones and mudstones, present mainly enclosed or adjacent to the LJZ with a more restricted areal distribution, - Gypsum occurs as fibrous bands concentrated in the gypsum zone in the upper part of the stratigraphic sequence (sub economic). • The mineralization is hosted in a lacustrine sedimentary sequence of Miocene age dominated by calcareous claystones, siltstones, sandstones and clastic rocks (about 400 m to 500 m thick). The sequence dips to the north at between 0 and 25 degrees or more, but typically between 5 and 10 degrees, and it includes several thin tuff beds that provide valuable marker horizons for stratigraphic correlation. The Miocene sediments lay unconformably on a basement of Cretaceous age. 

Drill hole information	• Since 2004 a total of 310 drill holes (125,604.6 m) were drilled for resource, geotechnical, hydrogeological and sterilisation drilling programs. A total of 175 drill holes (100,622.35 m) support the current resource estimates. • Core drilling was predominant (261in total, 114,345 m) but some open holes using rotary bit were also drilled for ground water monitoring system as a part of hydrogeological drilling program (installed: piezometers, wells, shallow Alluvium wells, etc.). Eleven (11) large diameter (LDD) RC holes (500 mm) were drilled, including one converted into diamond drill hole (308 mm) coring the LJZ, as a part of a bulk sampling drilling program.

Year	Rotary bit		Diamond bit	
	# Holes	Metres	# Holes	Metres
2004	-	-	3	461
2005	-	-	11	4,573
2006	-	-	5	3,077
2007	-	-	13	7,401
2008	-	-	4	2,063
2009	-	-	6	3,107
2010	-	-	13	6,682
2011	5	332	76	27,077
2012	14	5,494	61	27,784
2013	-	-	4	2,300
2014	11	1,729	5	2,420
2015	24	4,036	30	18,999
2016	-	-	30	8,402
Total	**54**	**11,592**	**261**	**114,345**

Data aggregation methods	• Lithological and stratigraphic criteria were used to define geodomains for geological modelling, but no compositing was applied to geochemical assays prior to the resource estimation process.
Relationship between mineralisation widths and intercept lengths	• Based on drilling techniques and sub horizontal stratigraphy, the mineralisation intercepts approximate the true thickness.

Diagrams

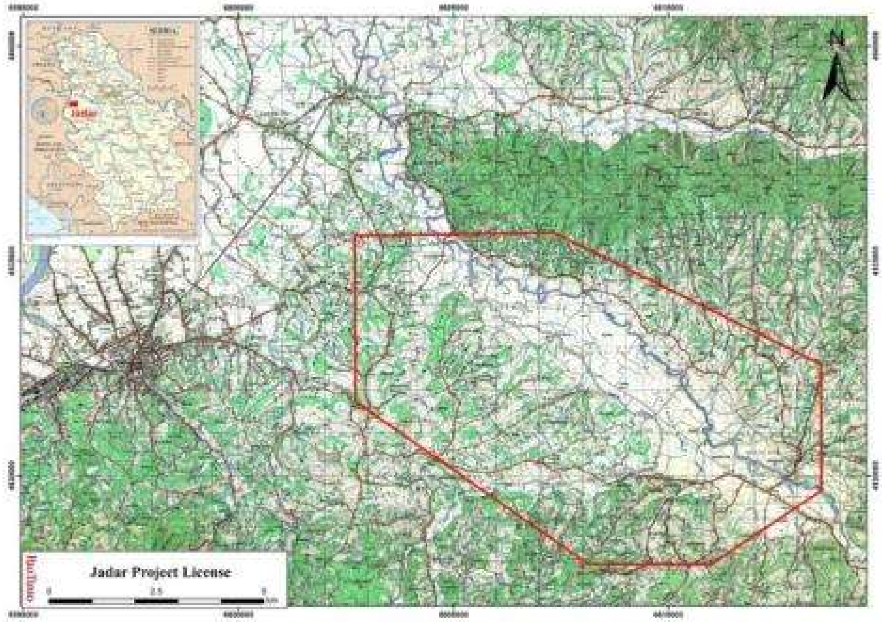


Fig. 1. Exploratory License map

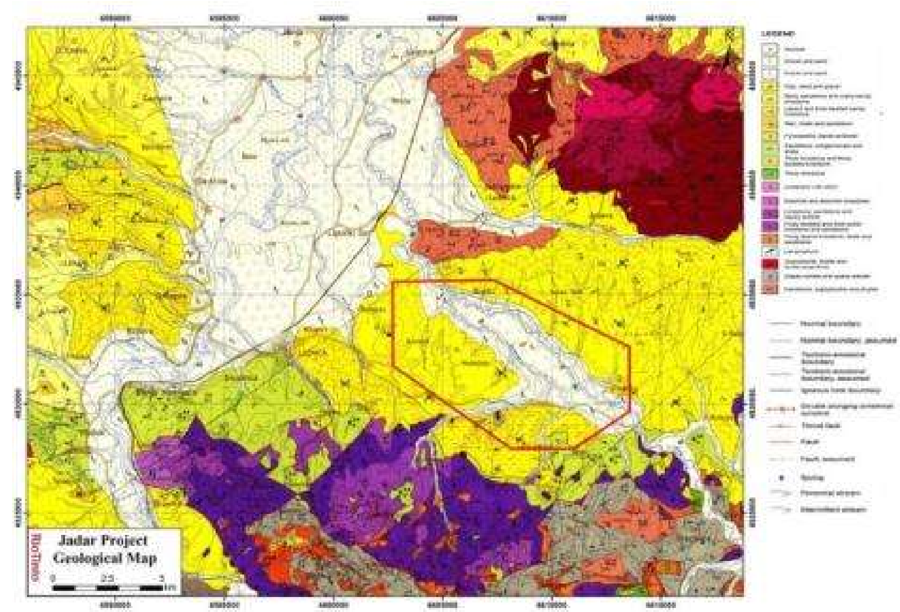


Fig. 2. Jadar basin geological map(based on SFRY General Geological Map 1:100,000)

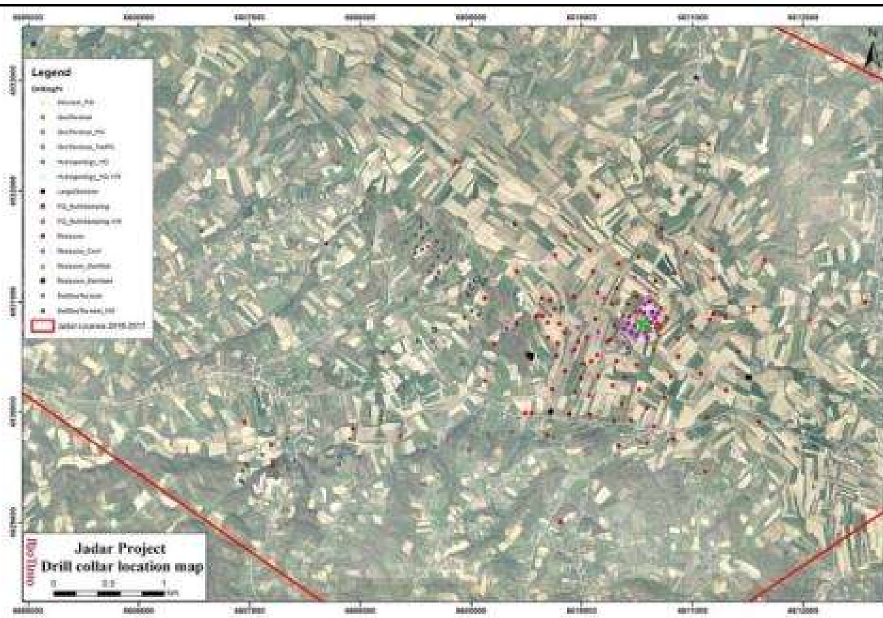


Fig. 3. Drill collar location map

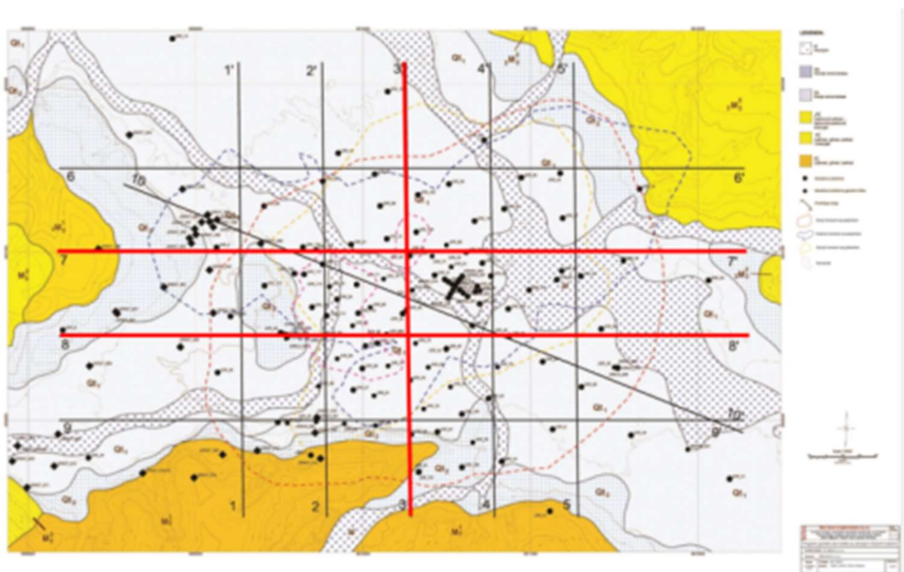
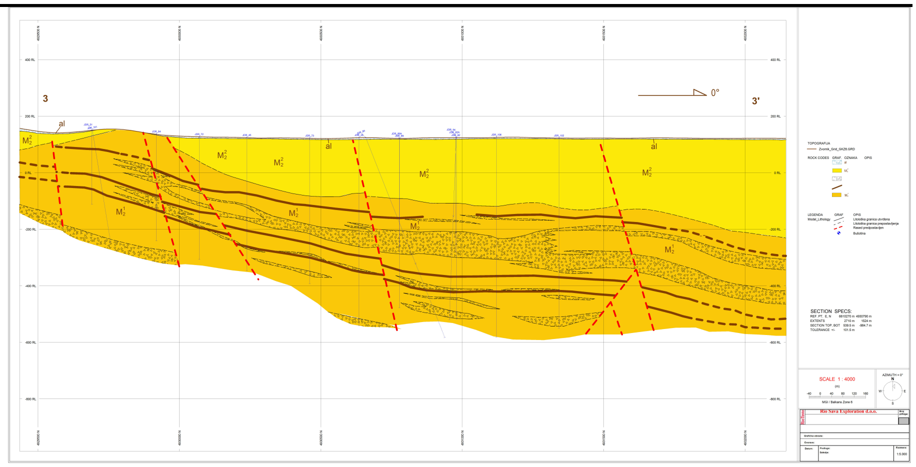
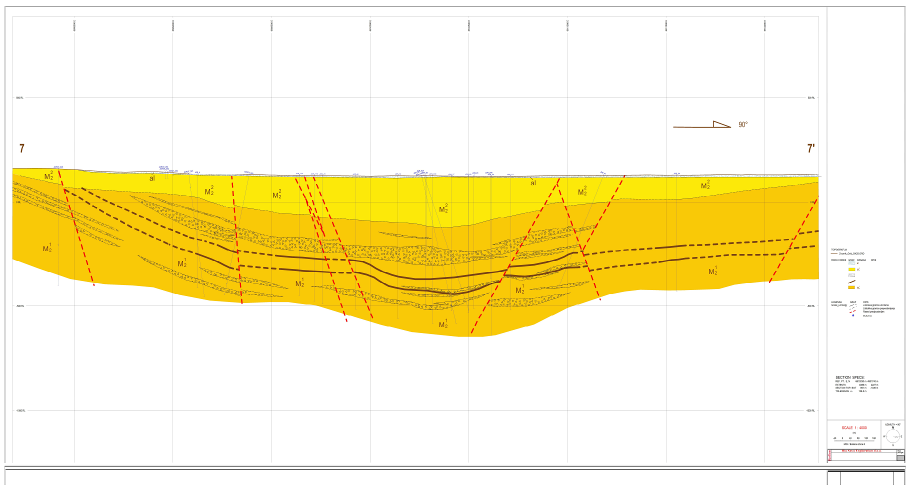
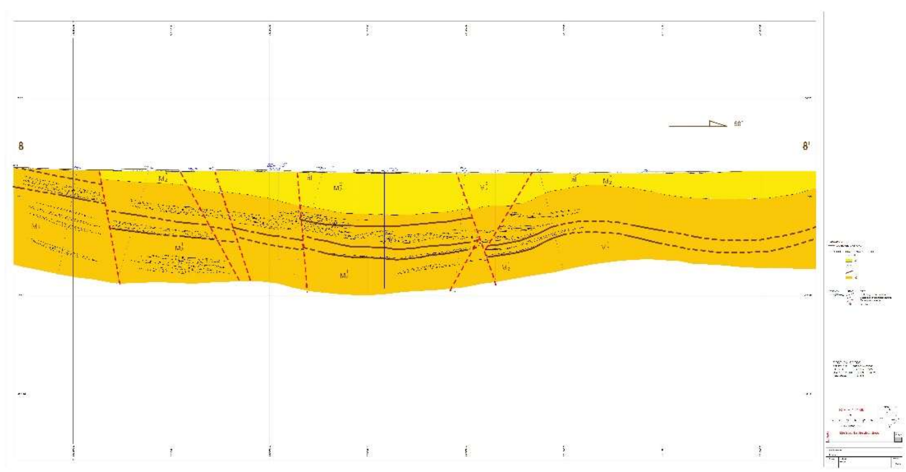


Fig. 4. Deposit geological map and cross sections 3,7 and 8

	  
Balanced reporting	• Not applicable. There are no specifically released exploration results for Jadar deposit.
Other substantive exploration data	• In addition to drilling, ground magnetic, 2D test seismic line and full 3D seismic surveys have been completed since 2004 to identify faults, possible dykes, and alluvial limits. • During the early exploration stage (pre-2007) geophysical surveys were conducted over a wider area including gravity, magneto-telluric and magnetic techniques, providing initial information about Jadar basin basement depth. • Early in 2015 a 2D Seismic test line (2.2 km) was carried out across the central part of

	deposit to determine ground response and optimum seismic layout parameters and energy source for a later 3D seismic survey. • In the summer of 2015 a 3D seismic survey, within an area of approx. 10.5 km^2 (covering planned decline area, central part of deposit as well as jadarite intercept on the north (JDR_123), was carried out. First results of 3D seismic data processing and interpretation provided additional information enhancing confidence in the continuity of the stratigraphic unit's, subsurface structures and identification of the main faults position and orientation.
Further work	• Ongoing re-processing of 3D seismic data should provide more detailed structural features and allow update of structural model. • Ongoing re-correlation of core above LJZ should allow better GeoDomaining in MJZ and UJZ as well as update of the litostratigraphical model. • Ongoing assaying of MJZ intervals in the central part of deposit as well as planned MJZ processing test work, should allow better estimation of MJZ and maybe partial upgrade into Inferred resource category.

SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

Criteria	Commentary
Database integrity	• All drill hole data are securely stored in the Jadar Project AcQuire database that is located in the Belgrade office server. The server is backed up daily. • All data transfer to the AcQuire database is in digital form, and has been verified and validated by the database geologist and exploration geologists. Additional automated validation checks have also been incorporated into the AcQuire logging modules. As a result, the likelihood of transcription or keying errors in the final resource database is low.
Site visits	• The Jadar Competent Persons have visited the Jadar Project on at least 4 occasions in 2016. The site visits typically included the Belgrade office, and the drilling operations, core shed and sample prep lab facilities on site.
Geological interpretation	• The lithostratigraphic model is well understood, and is considered to be robust: ○ The lithostratigraphic interpretation is supported by detailed logging from drilling with variable data density. The lithostratigraphy from the Lower Jadarite Zone to surface has been logged and modelled as 2D wireframe surfaces. ○ Volcanoclastic material in the form of tuffs, tuffaceous sandstones and pyroclastic fragments provide useful marker horizons for grade modelling and resource estimation. • The structural model at Jadar is complex but is considered to be at a stage of development that is appropriate for PFS and associated mining studies: ○ The main basin scale structural faults displacing the mineralised domains during and post deposition have been identified. Major faulting appears to be a combination of plastic deformation and fault displacement based on seismic interpretations and drill core orientation angles. ○ Minor faulting (<10m) at the scale of mining is considered to be less well understood, many of these faults are not yet in the current structural model. 3D seismic re-processing work will be undertaken, with the objective to confirm structural interpretation and to improve structural resolution of the fault model within the early mining areas. • The jadarite and borate mineralisation has been modelled in three separate horizons: ○ Lower Jadarite Zone (LJZ) - thickness: 1m - 50 m ○ Middle Jadarite Zone (MJZ) - thickness: 1m – 20 m ○ Upper Jadarite Zone (UJZ) - thickne3ss: 1m – 15 m ○ Only LJZ has been classified as Mineral Resource based on completed studies. Both UJZ and MJZ are currently at mineral inventory level only, Additional assaying and processing studies on the MJZ are ongoing to improve MJZ resource confidence. • The horizontal and vertical spatial distribution of the tabular Jadarite and Sodium Borates (NaBo) is well understood based on current drilling, and has resulted in robust 3D wireframes for the Jadarite and Borate mineralisation. • The 3D mineralised wireframes used to constrain grade estimation have been defined using a US$300/tonne contained COG. The dollar COG is based on a US dollar value calculated using Rio Tinto price curves for lithium carbonate and boric acid. • The genesis of the jadarite and borate mineralisation is conceptual at this stage: ○ Jadarite and borate beds are thought to be formed in the water–sediment interphase from hydrothermal fluids entering the basin. ○ The jadarite and borate mineralisation has similarities to other deep water

	borate environments (i.e. Furnace Creek Fm. in US) The significant changes in mineralogy in the vertical direction are controlled by the chemical evolution of the mineralising events over time, and also by the basin scale graben faulting that constrains the jadarite and NaBo mineralisation.
Dimensions	• Jadarite mineralization is found in a continuous area of approximately 3 km in W-E direction by 2.5 km in N-S direction, and at depths from about 100m to 720m below surface. The Jadar deposit is sub-divided in three major zones known as the Upper, Middle and Lower Jadarite Zones (UJZ, MJZ and LJZ), of which the LJZ is the most economic and at this stage contributes all the reported Mineral Resources. • Jadarite mineralisation in the LJZ occurs as a lens shaped orebody with an average thickness of approx. 15m (ranging in thickness from 2 m to 50 m).
Estimation and modelling techniques	• The estimation process was completed using the Maptek Vulcan geological modelling and Isatis geostatistical software packages. The unfolding option in Vulcan was used to account for the undulating jadarite and borate mineralisation, and to preserve grade variations in the vertical direction. • Mineralised domains and background mineralisation were estimated in 3D space using ordinary kriging with up to four estimation passes to account for the highly variable nature of the drilling density, that ranges from 25m to greater than 200m in plan view. • A parent block size of 25m (X) by 25m (Y) by 2m (Z) was used for grade estimation. No sub-celling was used in the block model. It is anticipated that the initial mining area will be proximal to the densest drilling area, thus supporting the current block size for resource estimation. • Data was composited to 2m, the same intervals the parent block thickness in the vertical direction. The 2m composites were selected from the 1m raw assay data to remove unwanted variability in the vertical direction. Larger composite intervals were not evaluated as they would exceed the vertical dimensions of the parent block in the block model. • Statistical and variography studies were undertaken using the Isatis geostatistical software package and confirmed that the geostatistical approach to grade estimation was appropriate. No grade cutting was required for either the jadarite or borate mineralisation. • Grade estimates were constrained laterally within a boundary polygon that contains the majority of drill holes from the resource database. Grade estimates were not extrapolated outside of this polygon. Grade estimation parameters were optimized using Kriging Neighborhood Analysis (KNA) studies, taking into account data density, kriging variance, and minimum and maximum numbers of samples. • Block model validation included visual inspection of block grades against composites, composite statistics versus block grades by domain, and Swath plots. Check estimates (inverse distance squared – ID2) were undertaken on the economic variables Li_2O and B_2O_3 only. There are no production statistics for reconciliation.
Moisture	• All density and tonnages and grades are estimated on a dry basis (drying for 24 hours at just under 60°C).
Cut-off parameters	• The CoG of US$300/t for Mineral Resources has been applied to include only material with prospects for economic extraction from the available mineralised inventory. Sharp hanging wall and footwall grade boundaries preclude the addition of significant tonnes, unless the COG was significantly reduced. • Rio Tinto applies a common process to the generation of commodity prices across the group. This involves generation of long-term price curves based on current sales contracts, industry capacity analysis, global commodity consumption and economic growth trends. In this process, a price curve rather than a single price point is used to develop estimates of mine returns over the life of the project. The detail of this process and of the price point curves is commercially sensitive and is not disclosed

Mining factors or assumptions	• Underground mining layouts utilize a variety of underground panel and stope designs for the Jadar Project. A prerequisite for underground mining is that surface subsidence is minimised. As such, stabilised stope fill mining options are being developed. • No assumptions were made regarding modelling of selective mining units at this stage given the proposed variable mining methods and stope sizes. • No minimum ore thicknesses were assumed in the modelling of the jadarite mineralisation to allow mine layout trade-off studies. • In the central area of the Lower Jadarite Zone, mineralised thickness varies between 3m and 50m, with an average ore thickness of around 15m.The assessment of internal dilution is dependent on the mining cut-off grade and will be evaluated during the economic assessment of the ore material for underground mining.
Metallurgical factors or assumptions	• The pilot plant test-work on bulk samples from LJZ has been successful in achieving the separation of jadarite particles from the fine-grained matrix, then dissolution in acid and refining to produce market-quality lithium carbonate and boric acid products. • While costs and recovery estimates are still under development within the current PFS study, it is clear that there is a viable processing route to economically process the jadarite and borate ore from recent pilot processing studies.
Environmental factors or assumptions	• Work on the communities, social performance, environment and permitting aspects of the Jadar Project is ongoing. No major issues have been reported that could potentially impact on the resource estimate.
Bulk density	• Dry Bulk Density (DBD) measurements are determined by the water displacement method on uncoated core. • The drill hole core condition is generally good, with high percentage core recoveries. Observed voids in the core are rare, as a result, core density is considered to be a reliable estimator of dry bulk in-situ density. • Dry bulk density measurements have been validated by external laboratory test work. • Total of 16,821 dry bulk density estimates are in the resource database. • Density values have been estimated into the block model using the inverse distance estimation method.

Classification	• The Jadar resource model for the Lower Jadarite zone has been reported as Indicated and Inferred Mineral Resource categories.
	• The resource category determination is based on a number of factors:
	  ○ Drill hole density in the LJZ
	  ○ Slope of Regression geostatistical parameter
	  ○ Geological continuity and confidence in the structural model
	  ○ Grade continuity based on the semivariogram and sectional interpretations
	• The Competent Person is satisfied that the stated Mineral Resource classification accurately reflects the interpreted geological and structural controls, and confidence in the grade estimates.

Audits or reviews	• Jadar Project has had two audits completed in the past five years:
	  ○ An audit in October 2011 conducted by SRK (Rio Tinto Corporate Assurance QAQC Internal Audit Report - Dec. 2011)
	  ○ An audit in September 2016 conducted by SRK (Rio Tinto Group Internal Audit Resources and Reserves Internal Audit Report – Oct. 2016)
	• The 2016 Audit covered two main components:
	  ○ Data collection component (all field, core-shed and office activities

	related to the so-called “Core to Model” procedures C2M); o Resource estimation component (resource estimation block model BM 4.1). • The 2016 Audit concluded that the fundamental data collection and resource estimation techniques are appropriate and overall internal audit rating is ‘Satisfactory’. No technical findings related to the resource estimation process were identified. Two low rated findings were identified relating to procedural issues, these have now been addressed.
Discussion of relative accuracy/ confidence	• There is a high level of confidence in the reported global estimates of the tonnes and grades for the Jadar Mineral Resources due to observed grade and geological continuity of the Jadarite and borate mineralisation. • Inferred Mineral Resource estimates are generally based on drill hole spacing greater than 100m, and block grades should be considered as smoothed given the relatively small block size of 25m (X) by 25m (Y) by 2m (Z). • Due to uncertainties in the structural model there may be structural disturbance at the scale of mining that have not been identified. The 3D seismic interpretation and orientated core data are being used assist in resolving these issues and improve confidence in the structural model. • Grade estimation has been improved by the use of 3D wireframe domains to constrain the grade estimates. Wireframes are based on a US$300 COG, further work is required to determine the most suitable economic COG for the project once mining and processing cost estimates are further developed in the current PFS. • Accuracy and confidence of Mineral Resource estimation estimatehas been accepted by the Competent Person.

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2016 Annual report Mineral Resources table, showing line items relating to the Jadar changes

	Likely mining method (a)	Resources at end 2016						Total resources 2016 compared with 2015				
		Measured		Indicated		Inferred		**2016**		2015		
BORATE (b)		Millions of tonnes	B_2O_3 %	Millions of tonnes	B_2O_3 %	Millions of tonnes	B_2O_3 %	**Millions of tonnes**	B_2O_3 %	Millions of tonnes	B_2O_3 %	Rio Tinto interest %
Jadar (Serbia) (c)	U/G			10		11		**21**		18		100.00

	Likely mining method (a)	Resources at end 2016						Total resources 2016 compared with 2015				
		Measured		Indicated		Inferred		**2016**		2015		
LITHIUM		Millions of tonnes	Li_2O %	Millions of tonnes	Li_2O %	Millions of tonnes	Li_2O %	**Millions of tonnes**	Li_2O %	Millions of tonnes	Li_2O %	Rio Tinto interest %
Jadar (Serbia) (c)	U/G			52	1.8	83	1.9	**136**	**1.9**	117	1.8	100.00

Notes

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

(b) Borates Resources are reported as in situ B_2O_3, rather than marketable product as in Reserves.

(c) Resources at Jadar increased following additional drilling and an updated geological model supported by a 3D seismic survey. 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/factsheets/JORC. Borate resources are quoted as product at 21mt B_2O_3. The equivalent in situ Resource is 52 million tonnes at 19.2 per cent B2O3 (Indicated) and 83 million tonnes at 13.0 per cent B2O3 (Inferred).

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Summary of information to support the Mineral Resources estimates

Increases in the Mineral Resource estimate for the Jadar Project are supported by the information set out in the appendix to this release and located at riotinto.com/JORC in accordance with the Table 1 checklist (Sections 1 to 3) in the JORC Code.

All models (structural and geological) supporting the Mineral Resource increase were updated to incorporate new and legacy drilling and 3D seismic data, leading to revised interpretations of main structures, geology and Lower Jaderite Zone grade continuity.

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

Geology and geological interpretation

The Jadar deposit, discovered in 2004 in western Serbia is a concentration of lithium and borates in a mineral at that time new to science, named Jadarite. It lies in a valley within flat-lying farmland area of 3.0 by 2.5 km, at depths from 100 m to 720 m below surface. The deposit includes three types of mineralization occurring as stratiform lenses of variable thickness, and hosted in gently dipping sequence of mainly fine-grained sediments that is crossed by faults:

- Jadarite $LiNaSiB_3O_7(OH)$ mineralization, so far unique to this deposit, is mainly concentrated in three gently dipping tabular zones known as the Upper, Middle and Lower Jadarite Zones (UJZ, MJZ and LJZ),
- Sodium borates (mainly Ezcurrite, but also Kernite and Borax) as lenses interbedded with Jadarite, mainly enclosed or adjacent to the LJZ with a more restricted areal distribution,
- Gypsum, in the gypsum zone in the upper part of the stratigraphic sequence (sub economic).

All Jadar geology models contain comprehensive datasets and well defined interpretations of the main structures and geological units. All models are supported by various drilling programs and a full range of downhole logging and geophysical surveys, as well as 3D seismic survey of the extended deposit area, supported by data processing and interpretation, that has enhanced understanding of main structural fault systems controlling the location of the Jadarite mineralisation.

Drilling techniques

The HQ3 core drilling was the predominant drilling type for the Jadar deposit. Since 2004, a total of 310 drill holes (aggregate depth of 125,605 m) were drilled for resource definition, geotechnical, hydrogeological, sterilisation drilling purposes. This includes 11, large-diameter (500 mm), reverse circulation drill holes and 14 PQ core holes, that primarily, but not exclusively, served for the collection of a bulk samples required for the metallurgical test-work program.

Resource estimation is supported by total of 175 drill holes with an aggregate depth of 100,622 m. The drill holes are normally planned and executed as vertical drill holes, except for 37 inclined holes, that were orientated to intercept structural features. All holes were consistently downhole surveyed after drilling was completed. Downhole logging included various probes for deviation surveys, calliper and temperature as well as other logging methodologies to detect and define the orientation of bedding and structures and/or other geotechnical characteristics.

Drill hole spacing (random arrangement-semi grid) ranges from 25 m in the central part, moving up to 500 m in the peripheral areas (130 m on average) and is considered sufficient to establish geological and grade continuity to support the current Mineral Resource classifications.

Sampling, sub-sampling method and sample analysis method

All samples for assaying and density determination are taken from predominant HQ3 (some PQ3 and rarely NQ3) vertical or occasionally inclined core drilling. Sampling was completed at RT drill core storage facility, after logging, based on sampling criteria determined by lithology and mineralogy, in accordance with established formal protocols.

From 2015 onwards, the sample lengths were assigned based on lithological – geodomain boundaries, rather than at 1m fixed intervals, following the maximum and minimum thickness criteria's established in the sampling protocols. Since 2011, sample preparation has been completed at RT Jadar sample prep laboratory located at the core storage facility (rarely in an external ALS prep-laboratory). After weighing, samples were immersed in water for volumetric measurement and then dried at temperature just below 60ºC, for minimum 24 hours, and weighing again for dry density calculation. Samples were crushed to -1.4 mm in two stages, subsampled in a rotary splitter to obtain 200-300g, pulverized to -75 µm (>85 per cent passing) and then riffle split to produce 100-150g pulp for assaying. The unused rifle split pulp is stored in the sample archive. Sealed batches of pulverized samples were sent to the ALS Laboratory for assaying.

Besides Li and B, a standard suit of assays includes: main oxides as Fe_2O_3, CaO, MgO, Na_2O, K_2O, MnO and SrO. Additional assays as, C, S, Cl and F were conducted on selected samples for processing tests purpose. Additional assays of about 26 other elements have been conducted on a limited number of batches, including poisonous and radioactive elements, to test for by-products, deleterious constituents and to ensure that neither the mineralization nor its host rocks are abnormally hazardous. Blanks (every 40th) and Jadarite high and Low grade standards (every 20th) were inserted in every batch, as well as sampling, crush and pulp duplicates (every 20th).

Criteria used for classification

The Jadar resource model for the Lower Jadarite Zone (LJZ) has been reported as Indicated and Inferred Mineral Resource categories.

The resource category determination is based on a number of factors:

- Drill hole density in the LJZ
- Slope of Regression geostatistical parameter
- Geological continuity and confidence in the structural model
- Grade continuity based on the semivariogram and sectional interpretations

Indicated Mineral Resource estimates are generally based on drill hole spacing less than 100m and Inferred Mineral Resource on drill hole spacing greater than 100m and less than 200 m.

Estimation methodology

The estimation process was completed using the Maptek Vulcan geological modelling and Isatis geostatistical software packages. Mineralised domains and background mineralisation were estimated in 3D space using ordinary kriging with up to four estimation passes to account for the highly variable nature of the drilling density (25m to greater than 200m in plain view). A parent block size of 25m (X) by 25m (Y) by 2m (Z) was used for grade estimation (no sub-celling).

Data was composited to 2m, the same vertical interval as the parent block thickness in the vertical direction, to remove unwanted variability in the vertical direction. Statistical and variography studies were undertaken and confirmed that the geostatistical approach to grade estimation was appropriate.

Grade estimates were constrained laterally within a boundary polygon that contains the majority of drill holes from the resource database (grade estimates were not extrapolated outside of this polygon). Grade estimation parameters were optimized using Kriging Neighborhood Analysis (KNA) studies, taking into account data density, kriging variance, and minimum and maximum numbers of samples.

Reasonable prospects for eventual economic extraction

Underground mining layouts utilize a variety of underground panel and stope designs for the Jadar Project. A prerequisite for underground mining is that surface subsidence is minimised. As such, stabilised stope fill mining options are being developed. No minimum ore thicknesses were assumed in the modelling of the jadarite mineralisation, given the zone ranges between 3 and 50m thick (average 15 m) and the need to complete stope design trade-off studies. The assessment of internal dilution is dependent on the mining cut-off grade and will be evaluated during the economic assessment of the ore material for underground mining.

A cut-off grade of US$300/t for Mineral Resources has been applied to include only material with prospects for economic extraction from the available mineralised inventory. Sharp hanging wall and footwall grade boundaries preclude the addition of significant thickness and therefore tonnes, unless the COG was significantly reduced.

The pilot plant test-work on bulk samples from LJZ has been successful in achieving the separation of jadarite particles from the fine-grained matrix, then dissolution in acid and refining to produce market-quality lithium carbonate and boric acid products. While costs and recovery estimates are still under development within the current PFS study, it is clear that there is a viable processing route to economically process the jadarite and borate ore from recent pilot processing studies.

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Competent Persons Statement

The material in this report that relates to Mineral Resources is based on information prepared by Jorge Garcia, a Competent Person who is a Member of the EFG and Mark Sweeney, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy, both full-time employees of Rio Tinto.

Mr Garcia and Mr Sweeney have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Each of Mr Garcia and Mr Sweeney consents to the inclusion in the report of the material based on the information that he has prepared in the form and context in which it appears.

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