Notice to ASX

Changes to Boron Ore Reserves and Mineral Resources

2 March 2018

Rio Tinto’s 2017 annual report, released to the market today, includes significant changes in estimates of Ore Reserves and Mineral Resources at the Boron open pit mine in Boron, California (RTB Boron), compared to the previous estimate in the 2016 annual report.

The updated Ore Reserves and 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 appendix. Ore Reserves and Minerals Resources are quoted on a 100 per cent basis. Rio Tinto’s interest is 100 per cent.

RTB Boron Ore Reserves have decreased by 6 Mt, from 22 Mt to 16 Mt.

Accordingly, RTB Boron Mineral Resources exclusive of Ore Reserves have increased by 8.5 Mt, from 0 Mt to 8.5 Mt.

The reduction in Ore Reserves applies to the body of calcium borate ore types at the site. This decrease in Ore Reserves reflects a reassessment of the study support level of processing assumptions following independent technical review, leading to updated asessments of processing flowsheet options, and likely economics. The the sodium borate Ore Reserves, being majority of the Ore Reserves at the site, are unaffected.

Following this write back of Ore Reserves the operating life of RTB Boron has been reduced by 7 years and is anticipated to run until 2042.

Calcium borate extraction options and economics will be reviewed in the future as required subject to market opportunities and updated technical asessments.

Schedule – RTB Boron Ore Reserves

Ore reserves

	Type of mine (a)	Proved ore reserves at end 2017 Tonnage	Proved ore reserves at end 2017 Grade	Probable ore reserves at end 2017 Tonnage	Probable ore reserves at end 2017 Grade	Total ore reserves 2017 compared with 2016 Tonnage 2017	Tonnage 2016	Grade 2017	Grade 2016	Rio Tinto share Interest %	Rio Tinto share Marketable product
Borates (h)											
		millions of tonnes		millions of tonnes		**millions of tonnes**	millions of tonnes				**millions of tonnes**
Reserves at operating mine											
Rio Tinto Borates - Boron (US) (i)	O/P	11		5.2		**16**	22			100.0	**16**

Notes

(a) Type of mine: O/P = open pit, O/C = open cut, U/G = underground, D/O = dredging operation.
(h) Reserves of borates are expressed in terms of marketable product (B_2O_3) after all mining and processing losses.
(i) Rio Tinto Borates - Boron Reserve tonnes decreased following the transfer of calcium borate Reserves to Resources as a result of a reassessment of processing assumptions. 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.

Schedule – RTB Boron Mineral Resources

Mineral resources

	Likely mining method (a)	Measured resources at end 2017 Tonnage	Measured resources at end 2017 Grade	Indicated resources at end 2017 Tonnage	Indicated resources at end 2017 Grade	Inferred resources at end 2017 Tonnage	Inferred resources at end 2017 Grade	Total resources 2017 compared with 2016 Tonnage 2017	Tonnage 2016	Grade 2017	Grade 2016	Rio Tinto interest %
Borates (h)												
		millions of tonnes		millions of tonnes		millions of tonnes		**millions of tonnes**	millions of tonnes			
Rio Tinto Borates - Boron (US) (i)	O/P	3.6		0.4		4.5		**8.5**	-			100.0

Notes

(a) Likely mining method: O/P = open pit; O/C = open cut; U/G = underground; D/O = dredging operation.
(h) Borates Resources are reported as in situ B_2O_3, rather than marketable product as in Reserves.
(i) Rio Tinto Borates - Boron Reserve tonnes decreased following the transfer of calcium borate Reserves to Resources as a result of a reassessment of processing assumptions. 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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Summary of information to support the Mineral Resource estimate

The RTB Boron Mineral Resource Estimate is supported by a JORC Table 1 (Section 1 to 3) document provided as the appendix to this release and also located at www.riotinto.com/investors/reserves-and-resources.

An increase in RTB Boron Mineral Resources coincides with the write back of calcium borate ore types form Ore Reserves to Mineral Resources.

The following summary of information for Mineral Resource Estimates is provided in accordance with Chapter 5.8 of ASX Listing Rules.

Geology and geological interpretation

RTB Boron is an open pit borate mining operation located within the Kramer Borate deposit in Boron, California. The Kramer ore body is a roughly lenticular sedimentary sequence of borax ($Na_2B_4O_7.10H_2O$) and kernite ($Na_2B4O_7.4H_2O$) containing interbedded claystone. This central crystalline facies is successively enveloped by facies consisting of ulexite ($NaCaB_5O_9.8H_2O$) and colemanite ($Ca_2B_6O_{11}.5H_2O$) - bearing claystone, and barren claystone. Studies indicate the Kramer borates were deposited in a small structural, non-marine basin, associated with thermal (volcanic) spring activity during Miocene time.

RTB Boron geology and geotechnical models are supported by a comprehensive drill hole dataset and well defined interpretations for borate quality and geological structure, including mineralization continuity and faulting. The RTB Boron geology model is also supported by mapping, surveying data, and continuous mining operations spanning 90 years.

Drilling techniques

3,173 drill holes (1,453,980 ft) have been drilled for exploration, resource, geotechnical, hydrological, sterilization, etc. drilling programs at Boron. A total of 1,699 drill holes (660,220 ft) support the current resource model. The drill holes are up to 3,500 ft in length with an average of 458 ft. Coring is predominantly HQ, drilled vertically. Downhole surveys on several of the deeper core holes have confirmed that drilling is essentially vertical, with average drift of less than 10 ft at 600 ft depth. Core drill hole spacing of 200 ft is validated by geostatistical work, which shows grade continuity on the order of 400 ft. Drill spacing is sufficient to establish geological and grade continuity, and to support the current Mineral Resource and Ore Reserve classifications.

Sampling, sub-sampling method and sample analysis method

Core samples, once collected from the drill rig, are transported to the core shed, where they are stacked prior to logging. Drillhole logging within borates and core splitting techniques have remained relatively unchanged for over 30 years, and similar-type logs are available for drilling since that time. Logging of borates is performed using site-developed logging forms in which have pre-defined rock type codes. Core is marked to define sample boundaries, photographed, and split vertically using a hydraulic splitter, ½ is set aside for assay preparation, and ½ is replaced in the core box for permanent storage. Assay preparation consists of air drying, crushing to nominal size, and riffle split to produce a 500 g sample. The sample is bagged, sealed, and boxed for shipment to the offsite assay laboratory. QA/QC samples are inserted into each box which consists of 20-25 samples (batch). Assaying is performed on all ore core as follows: 2 minute boil % B_2O_3/Total acid soluble % B_2O_3/ppm As (tincal); 1 hour boil % B_2O_3/Total acid soluble % B_2O_3/ppm As (kernite); Total acid soluble % B_2O_3/ppm As (ulexite). All sample treatment and analysis was conducted according to procedures which adhere to Australian or International equivalent standards in National Association of Testing Authorities or ISO certified laboratories.

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Criteria used for classification

RTB Boron employed a standard methodology for classifying borate Mineral Resources into Inferred, Measured and Indicated confidence categories. Drill holes were assessed according to the value and reliability of contained data to contribute a point of observation to Mineral Resource classifications. Resource categories for in-situ borates are classified based on distance from the estimated block to the nearest sample used for the estimation. Statistics, variography, and mining history prove that each ore zone is very consistent with respect to B2O3 grade, over the entire deposit. Blocks within 425 feet of a sample are classified measured, while those from 425 to 1600 feet are Indicated, and those outside 1600 feet are Inferred. With the average drill spacing approaching half the distance used to gauge the measured resource there is little material in the deposit that is not classified as Measured.

Estimation methodology

The estimation process was completed using the Maptek Vulcan geological modelling software package. The model was built by developing east-west cross sections at intervals through the deposit, using all drill holes and mapping data available. Each sodium borate ore zone is modelled as a discrete unit (domain), and the ulexite rocktype includes all calcium borates directly above and below the sodium borates. Grade values used in the models are generated using ordinary kriging, and checked using inverse distance and nearest neighbor. Modelled grades are validated visually using grade plots of each ore zone in addition to cross sections. Swath plots are also generated for estimate and model validation. Statistics of block grades estimated by ordinary kriging within each rock zone are calculated and compared against the composite statistics.

Reasonable prospects for eventual economic extraction

RTB Boron employs a standard approach to identify Mineral Resource volumes with reasonable prospects for eventual economic extraction.

There is no cut-off grade currently applied to borates from the Boron deposit. Boron resources and reserves have not historically been sensitive to pricing assumptions. Mineral Resources correspond with practical mineable borate ore thicknesses employing open pit mining methods and ore separation techniques.

Following a review of the current study level support and technical pathway options for calcium borate oretypes (both in-situ and those currently in stocklpile) , this material has been written back to Mineral Resources unitl such time updated processing pathway studies, capital estimates and reviews of marketing options are scheduled .

Summary of information to support the Ore Reserve estimate

The RTB Boron Ore Reserve Estimate is supported by a JORC Table 1 (Section 4) document provided as the appendix to this release and located at www.riotinto.com/investors/reserves-and-resources.

RTB Boron Reserve tonnes decreased following the transfer of calcium borate Ore Reserves to Mineral Resources as a result of a reassessment of processing assumptions.

The following summary of information for the Ore Reserve Estimate is provided in accordance with Chapter 5.9 of ASX Listing Rules.

Economic assumptions

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.

Criteria used for classification

Measured and Indicated Mineral Resource classifications are generally used to classify Proven and Probable Ore Reserves. Elevation above or below 1,500 ft below surface is also used to classify Proven and Probable Ore Rserves due to elevated geotechnical risk. Short term surface stockpiles and reclaimed pond material are classified as Probable Ore Reserves. There are no Inferred or Unclassified Minearl Resources included in the stated reserve numbers.

Mining and recovery factors

RTB Boron is an open pit mine utilizing a conventional truck and shovel operation. Ore mining equipment (wheel loaders occasionally assisted by dozers or backhoes for additional separation) is smaller than the waste shovel fleet to facilitate better selectivity during mining. The SMU is at smallest a 5 foot cube, representing sand backfill in old underground workings, which is incorporated into the block model. Mining practice in the stope areas involves using the backhoe or dozer to remove backfill from the stopes ahead of ore mining, minimizing dilution and ore loss.

Sodium borate mining recovery for open pit mining in Boron is estimated at 95% for the life of the mine. Dilution is not factored into reserve calculations because B_2O_3 tons are not affected by diluting materials. However dilution is included in mining schedules. The effect of dilution is to increase the crude tons of material into the process plants, thereby reducing the ore grade and slightly elevating costs. Typical dilution rates applied are 10% for tincal mined and 3% for kernite mined.

Cut-off grades

There is no cut-off grade currently applied to borates from the Boron deposit. The ore-waste boundary is very clearly defined and visible both in drilling and mining. Boron resources and reserves have not historically been sensitive to pricing assumptions. Some work has been done to determine a cut-off grade, and the results have shown that any reasonable potential cut-off grade is significantly lower than the mineable ore grade in the deposit.

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Processing

The Primary Process plant uses the MDDK process to dissolve the ore. MDDK involves the fine grinding of a blend of tincal and kernite ores followed by dissolution in water in a series of agitated tanks. A mechanical evaporator is added to the sodium borate process to allow direct usage of MDDK-derived liquors for both sodium borate pentahydrate (Neobor) production and sodium borate decahydrate (Borax) production. The Boric Acid Plant uses sulfuric acid to dissolve kernite due to the relatively slow water-solubility of kernite ore. After dissolution, the gangue is separated using rake classifiers, and the liquor is sent to thickeners for settling of fine clays.

Boron ore is principally composed of three main components: borate, clay, and water, with minor amounts of deleterious materials present locally. Deleterious materials are blended in the feed to maintain manageable concentrations.

RTB Boron has been in operation for over 90 years, as such, the process technology for the Ore Reserve estimate is well tested and proven.

Modifying factors

Appropriate environmental permitting and licences are in place for mining operations at RTB Boron. Boron environmental aspects are managed under and are compliant with ISO 14001 principles and Boron has been ISO certified for several years. RTB Boron has an extensive environmental and heritage approval and compliance process. No issues are expected that would impact the Mineral Reserve estimate.

RTB Boron is an operating site with existing infrastructure in place to support the operation. The current LOM plan takes into consideration sustaining capital to maintain the existing infrastructure as well as capital for plant upgrades. Where required, replacement infrastructure is captured in capital assessments. All necessary Government approvals are currently in place or are expected to be received within the timeframes anticipated in the Life of Mine (LOM) plan.

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Competent Persons Statement

The information in this report that relates to Mineral Resources is based on information compiled by Brandon Griffiths, a Competent Person who is a Registered Member of The Society for Mining, Metallurgy, and Exploration, Inc. (SME). Brandon Griffiths is a full-time employee of the company.

The information in this report that relates to Ore Reserves is based on information compiled by Brandon Griffiths and Oyku Galvan, both are Competent Persons that are Registered Members of The Society for Mining, Metallurgy, and Exploration, Inc. (SME). Brandon Griffiths and Oyku Galvan are full-time employees of the company.

Brandon Griffiths and Oyku Galvan 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 Griffiths and Mrs Galvan consents to the inclusion in the report of the matters based on the information that they have compiled in the form and context in which it appears.

Contacts

media.enquiries@riotinto.com

riotinto.com

Follow @RioTinto on Twitter

Media Relations
Illtud Harri
T +44 20 7781 1152
M +44 7920 503 600

David Outhwaite
T +44 20 7781 1623
M +44 7787 597 493

Media Relations, Australia
Jonathan Rose
T +61 3 9283 3088
M +61 447 028 913

Investor Relations, United Kingdom
John Smelt
T +44 20 7781 1654
M +44 7879 642 675

David Ovington
T +44 20 7781 2051
M +44 7920 010 978

Nick Parkinson
T +44 20 7781 1552
M +44 7810 657 556

Investor Relations, Australia
Natalie Worley
T +61 3 9283 3063
M +61 409 210 462

Rachel Storrs
T +61 3 9283 3628
M +61 417 401 018

Rio Tinto plc
6 St James's Square
London SW1Y 4AD
United Kingdom

T +44 20 7781 2000
Registered in England
No. 719885

Rio Tinto Limited
Level 7, 360 Collins Street
Melbourne 3000
Australia

T +61 3 9283 3333
Registered in Australia
ABN 96 004 458 404

RTB Boron - Table 1

The following table provides a summary of important assessment and reporting criteria used at the Boron open pit mine in Boron, California (RTB Boron) for the reporting of Mineral Resources/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.

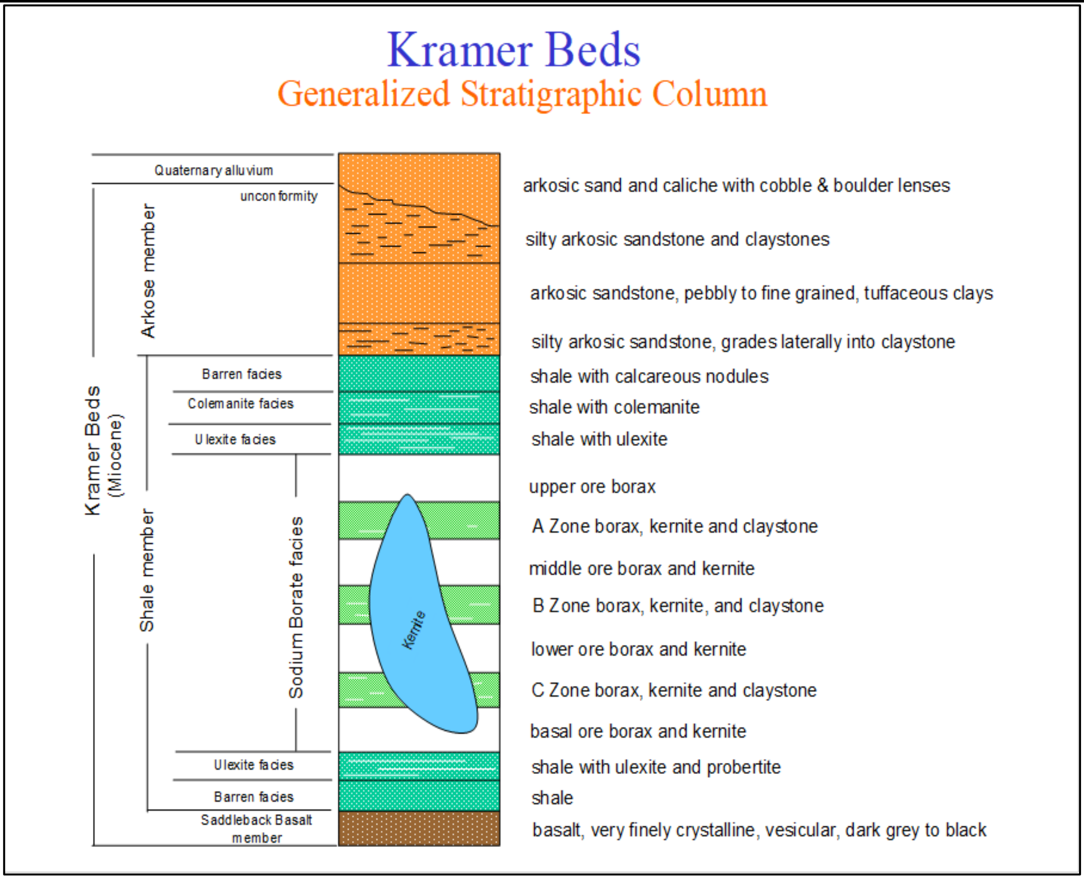
SECTION 1 SAMPLING TECHNIQUES AND DATA

Criteria	Commentary
Sampling techniques	• All samples for assaying and density determination of the in-situ orebody are taken from 2.4 inch diameter HQ core, drilled vertically. • A combination of reverse circulation and sonic core methods have been used for assaying of Calcium Ulexite Stockpiles. • Sample representability is ensured by drilling on a grid that is generally evenly spaced at an average of 200 ft (70 m), with variability in spacing along faults, in stope areas, along the orebody fringe, and in outlying fault blocks. Core Drillhole spacing of 200 ft is validated by geostatistical work which shows grade continuity on the order of 425 ft or more.
Drilling techniques	• 3,173 drill holes (1,453,980 ft) have been drilled for exploration, resource, geotechnical, hydrological, sterilization, etc. drilling programs at Boron. A total of 1,699 drill holes (660,220 ft) support the current resource model. The drill holes are up to 3,500 ft in length with an average of 458 ft. • Coring is predominantly HQ, drilled vertically. Downhole surveys on several of the deeper core holes have confirmed that drilling is essentially vertical, with average drift of less than 10 ft at 600 ft depth. • A combination of reverse circulation and sonic core methods have been used for assaying of Calcium Ulexite Stockpiles.
Drill sample recovery	• Core recovery is recorded by the geologist while logging the drill hole. • Core recovery in borate mineralization is typically very good (95 %+), as the ores are generally the strongest rock types encountered. No relationship between reduced recovery and mineralization has been observed. Sample bias due to preferential loss/gain of fine/course material in borate mineralization is considered very unlikely. • Occasional lower core recovery is experienced typically due to structural faulting or fracturing, or when drilling through high sand content waste rock types. Holes with less than 95% recovery in borate mineralization are re-drilled.
Logging	• Core samples, once collected from the drill rig, are transported to the core shed, where they are stacked prior to logging. Drillhole logging within borates and core splitting techniques have remained relatively unchanged for over 30 years, and similar-type logs are available for drilling since that time. Some early logs use slightly different forms, however rock codes remain consistent. • All core logging is done in the core shed and is logged by geologists for geotechnical features, lithology, stratigraphy, visible mineralization, and other characteristics (grainsize, texture, color, etc.). All core is photographed. • Logging of borates is performed using site-developed logging forms in which have pre-defined rock type codes. Logging is peer reviewed and validated prior to inclusion of new data into the Vulcan ISIS drillhole database.
Sub-sampling techniques and sample preparation	• Core is marked to define sample boundaries, and then photographed. • Borate bearing core is split vertically using a hydraulic splitter, ½ is set aside for preparation, and ½ is replaced in the core box for permanent storage. Core with no visible borates is generally not split nor assayed. • The ½ portion of the core chosen for assaying is prepared for the lab by crushing (Terminator jaw crusher), entire crushed sample is then riffle split to produce a weighed sample of 500 g. The sample bag is then sealed and boxed. • Sample intervals are determined by geology, with a maximum length of 5 feet. • Prepared core samples are placed in a box with a submittal list and assay requirements. Each box contains one sample batch of 20-25 samples, and is generally limited to a single rock type and assay scheme. Each batch must contain one borate standard sample, one blank sample, and one coarse duplicate. The lab creates and assays a pulp duplicate for each batch after pulverization. • Samples as received at the lab are weighed, pulverized, and then riffle split to obtain a minimum

	of 100 g for assaying.
Quality of assay data and laboratory tests	• A general quality assurance/quality control (QAQC) program involving duplicate samples is completed. All results are assessed via crossplots and statistics for precision and accuracy. • Each batch must contain one borate standard sample, one blank sample, and one coarse duplicate. The lab creates and assays a pulp duplicate for each batch after pulverization. • Assaying is performed on all ore core as follows: 2 minute boil % B2O3/Total acid soluble % B2O3/ppm As (Tincal); 1 hour boil % B2O3/Total acid soluble % B2O3/ppm As (Kernite); Total acid soluble % B2O3/ppm As (Ulexite). • Samples are currently assayed at the SGS-Lakefield laboratory in Ontario, Canada, an ISO-certified laboratory. • Assay results are checked after receipt by plotting results using MAPD routines and/or scatter plots. In addition to duplicates, the lab checks its own performance internally.
Verification of sampling and assaying	• High and low-grade intersections (rock zones) are visibly identified & verified by RTB Boron geologists. • All borate ore sampling and analysis is overseen and verified by other suitably qualified Rio Tinto personnel. • There are no twinned holes in the project area. • All data transfer is covered by an agreed protocol and procedure (core drilling data transfer file management procedure, assay data verification and data storage into a database). • There are no post adjustments to assays.
Location of data points	• All surveyed coordinates are within the NAD 83 projection. A local RTB Boron survey grid system is used which is referenced to the NAD 83 projection. • Drill hole collars were surveyed post drilling using differential GPS with an accuracy of ± 10 mm. • Down-hole surveys including deviation are carried out by the contractor drilling company on 50 ft. measurement intervals. Downhole surveys on several of the deeper core holes have confirmed that drilling is essentially vertical, with average deviation of less than 10 ft at 600 ft drill depth.
Data spacing and distribution	• Typical core drill hole spacing is on a 200 ft x 200 ft grid throughout much of the orebody, with variability in spacing along faults, in stope areas, along the orebody fringe, and in outlying fault blocks. • Core drill hole spacing of 200 ft is validated by geostatistical work, which shows grade continuity on the order of 400 ft. Drill spacing is sufficient to establish geological and grade continuity, and to support the current Mineral Resource and Ore Reserve classifications. • Drilling data is composited on 10 ft intervals within each ore zone and rocky type.
Orientation of data in relation to geological structure	• The majority of resource drill holes are vertical resulting in the drilling intersecting the shallow dipping sub-horizontal mineralization (bedding) at right angles. The orientation of drilling is therefore suitable for shallow dipping stratified deposits.
Sample security	• All sampling is conducted within the core shed by geologists based on sample lists prepared and supervised by the resource geologist. • All samples were prepared in the core shed and placed in sealed plastic bags, then boxed for shipment to the assay laboratory. • Chain of custody was followed for all boxes of samples shipped to the laboratory ensuring that only authorized personnel from RTB Boron and assaying laboratory had access to the samples at all stages of the sampling process. • Remaining sample pulp material and pulp duplicates are returned after assaying and are stored in the core shed at Boron.
Audits or reviews	• RTB Boron has had multiple audits and reviews of resource & reserve reporting since 2001, they include: o Review of US Borax Mineral Resource and Reserve Estimates, N Weatherstone, RTTS Report #BR3012, 4/01 o Resource and Reserve Health Check, S. Eldridge, M. Randall, Rio Tinto Technical Services, 4/04. o Borax Resource Model Review, Memo, G. Ballantyne, Rio Tinto Technical Services, 1/05. o Reserve and Resource audit, AMEC, 5/08. Overall audit rating: Satisfactory o Reserve and Resource compliance audit for corporate assurance, AMEC, 9/11. Overall audit rating: Satisfactory o Rio Tinto Group Internal Audit Resources and Reserves, Xstract Mining, 7/17. Overall audit rating: Marginal. • These reviews and audits concluded that the fundamental data collection techniques are appropriate.

SECTION 2 REPORTING OF EXPLORATION RESULTS

Criteria	Commentary
Mineral tenement and land tenure status	• RTB Boron is 100% owned by Rio Tinto Borates, a fully owned subsidiary of Rio Tinto Energy and Minerals Product Group. • RTB Boron comprises approximately 24,000 acres, all held in fee-simple ownership. • RTB Boron has completed the Life of Mine permitting process with the Kern County Board of Supervisors and the company's right to mine its resources and reserves is established for the foreseeable future.
Exploration done by other parties	• Not applicable – all exploration for the deposit at RTB Boron has been completed by geologists working for Rio Tinto.
Geology	• The Kramer ore body is a roughly lenticular sedimentary sequence of borax ($Na_2B_4O_7.10H_2O$) and kernite ($Na_2B_4O_7.4H_2O$) containing interbedded claystone. This central crystalline facies is successively enveloped by facies consisting of ulexite ($NaCaB_5O_9.8H_2O$) and colemanite ($Ca_2B_6O_{11}.5H_2O$) - bearing claystone, and barren claystone. Studies indicate the Kramer borates were deposited in a small structural, non-marine basin, associated with thermal (volcanic) spring activity during Miocene time. • The Miocene Kramer beds are divided into three distinct members, the Saddleback basalt member, the Shale member, and the Arkose member, in ascending order. The Saddleback basalt comprises up to 600 feet of olivine basalt flows and is the only Kramer member forming surface outcrops – as ridges northwest, north, and northwest of Boron open pit. The basalt is overlain by the Shale member, which consist of up to 400 feet of borate-bearing and barren claystones and shale. The Shale member is overlain by the Arkose member, which comprises up to 800 feet of arkosic sandstones, which are locally silty and interbedded with tuffaceous clays. • The sodium borate facies is divided into seven stratigraphic units: o Four high-grade units: Upper ore, Middle ore, Lower ore, and Basal ore, typically contain over 75-percent borax. o Three generally low-grade units, A-zone, B-zone, and C-zone, which typically contain less than 60-percent borax. o The Basal ore is the thinnest and least extensive of the high-grade units; the Lower ore is the thickest and most extensive high-grade unit. Only in the thick central portion of the sodium borate facies, are all the units present. Stratigraphic control is maintained by use of a number of clay-tuff and claystone marker beds within the sodium borate facies.

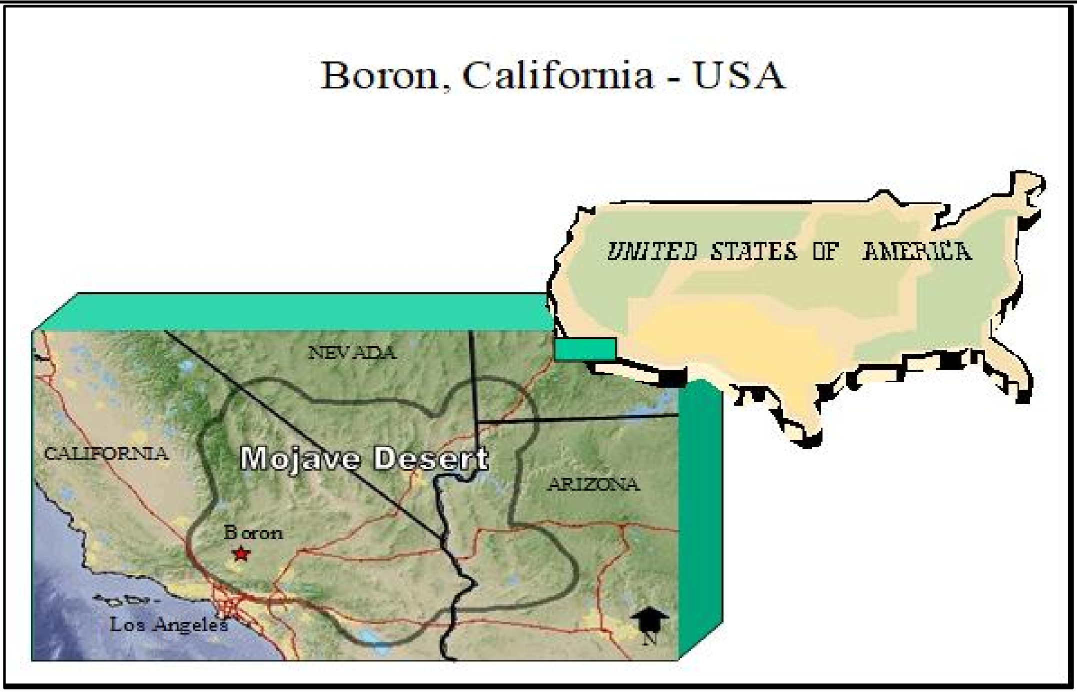


Drill hole Information

- 3,173 drill holes (1,453,980 ft) have been drilled for exploration, resource, geotechnical, hydrological, sterilization, etc. drilling programs at Boron. A total of 1,699 drill holes (660,220 ft) support the current resource model. The drill holes are up to 3,500 ft in length with an average of 458 ft.
- Coring is predominantly HQ, drilled vertically. Downhole surveys on several of the deeper core holes have confirmed that drilling is essentially vertical, with average drift of less than 10 ft at 600 ft depth.
- A combination of reverse circulation and sonic core methods have been used for assaying of Calcium Ulexite Stockpiles.

Year	Holes	Footage	RC Footage	Core Footage
No Date	1,362	582,625	7,764	1,286
1913	1	450	0	0
1917	5	1,347	0	0
1918	3	1,036	0	0
1919	3	802	0	0
1920	6	1,434	0	0
1921	2	705	0	0
1925	3	1,188	0	0
1926	8	3,886	0	0
1927	10	5,022	0	0
1928	7	4,655	287	155
1929	1	609	0	0
1930	2	1,281	0	0
1934	1	568	0	0
1935	2	1,038	0	0
1938	4	1,392	0	0

	1939	3	786	0	0
	1940	6	2,180	0	0
	1941	22	6,975	0	0
	1942	23	5,911	0	0
	1943	14	7,478	0	0
	1944	8	4,660	0	1,772
	1945	10	3,546	0	1,203
	1946	29	12,718	2,524	9,877
	1947	16	8,381	0	8,381
	1949	8	4,615	0	4,615
	1957	2	536	0	536
	1962	1	100	0	100
	1968	1	1,088	0	0
	1975	29	6,238	6,238	0
	1976	2	460	460	0
	1977	1	132	35	97
	1985	3	428	428	0
	1986	1	440	148	292
	1987	1	100	100	0
	1988	26	6,670	0	0
	1989	2	842	0	472
	1991	4	978	0	0
	1993	12	3,946	3,946	0
	1994	4	886	0	0
	1995	3	927	0	0
	1996	4	4,158	0	0
	1997	24	12,462	500	0
	1998	43	18,466	0	0
	1999	295	131,021	32,962	18,911
	2000	275	152,870	74,318	32,668
	2001	188	96,846	70,978	25,566
	2002	126	65,730	33,212	32,518
	2003	146	69,675	31,493	31,679
	2004	87	50,185	26,646	23,539
	2005	113	49,350	36,714	11,543
	2006	26	16,382	11,095	5,287
	2007	36	20,057	16,439	3,618
	2008	20	13,624	13,624	0
	2009	18	7,873	6,027	1,846
	2010	15	6,866	5,754	1,112
	2011	11	6,652	283	6,369
	2012	30	15,975	11,903	4,072
	2013	12	5,955	5,955	0
	2014	29	12,314	6,615	5,699
	2015	8	3,780	3,780	0
	2016	16	4,685	4,685	0
	Grand Total	**3,173**	**1,453,980**	**414,912**	**233,210**

Data aggregation methods	• Lithological and stratigraphic criteria were used to define the geodomains for geological modelling. Each sodium borate ore zone is modelled as a discrete unit, and the ulexite rocktype includes all calcium borates directly above and below the sodium borates. • Core drilling data is composited on 10-foot intervals within each ore zone and rock type, and grade estimation is limited to samples within the same zone and ore type. This methodology allows for vertical variability within an ore zone, while maintaining recognition that each ore zone is continuous only unto itself. Composite thickness has been chosen as a best fit based on the general thicknesses of ore zones present, plus sample length. • A maximum grade was applied to the borate estimates of the block model. Tincal has a maximum of 36.5 percent B2O3. All composites with values greater than 36.5 for all three variables, B_2M, B_1HR, and B_TOTL were not used in the estimation. Kernite has a maximum of 50.96 percent B2O3. All composites with values greater than 50.96 for the variables B_1HR and B_TOTL were not used in the estimation. Ulexite has a maximum of 42.95 percent B2O3. All composites with values greater than 42.95 for the variable B_TOTL were not used in the estimation. • There is no cut-off grade applied to borates from the Boron deposit.
Relationship between mineralisation widths and intercept lengths	• Based on drilling techniques and sub horizontal (shallow dipping) stratigraphy, the mineralization intercepts approximate the true borate thickness.
Diagrams	 Figure 1. Boron Location Map

[HS(1]

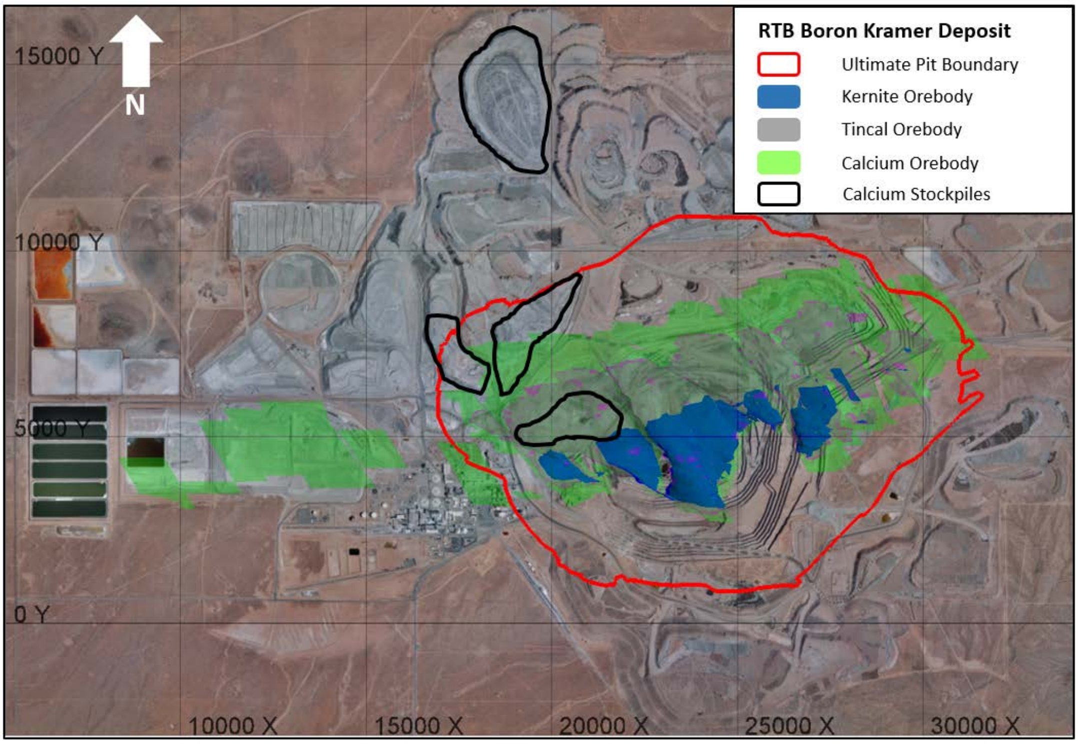


Figure 2. Map of the Kramer Deposit Borates

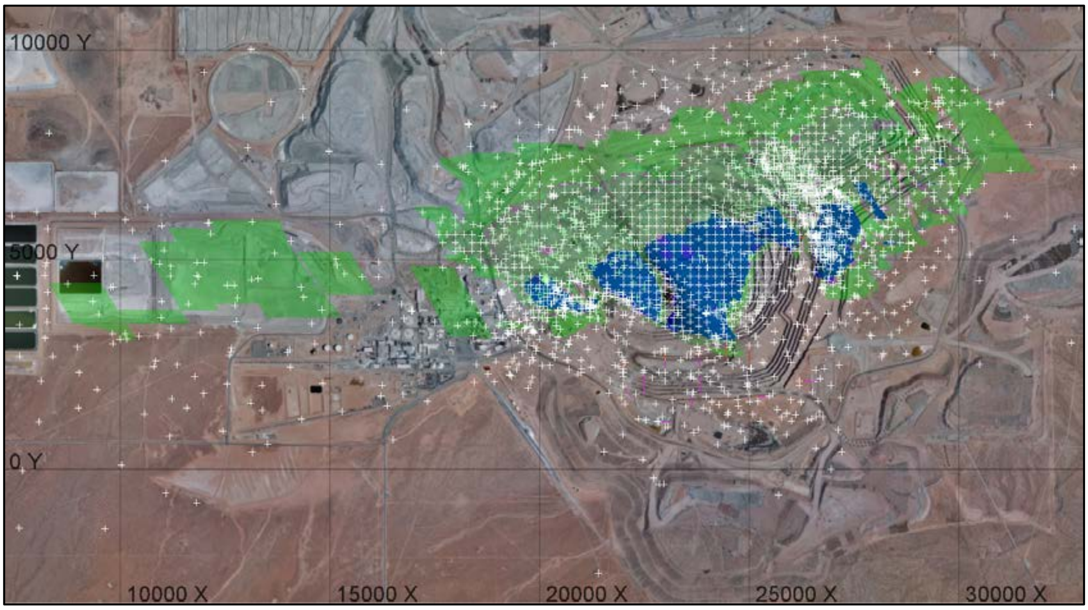


Figure 3. Drill collar location map

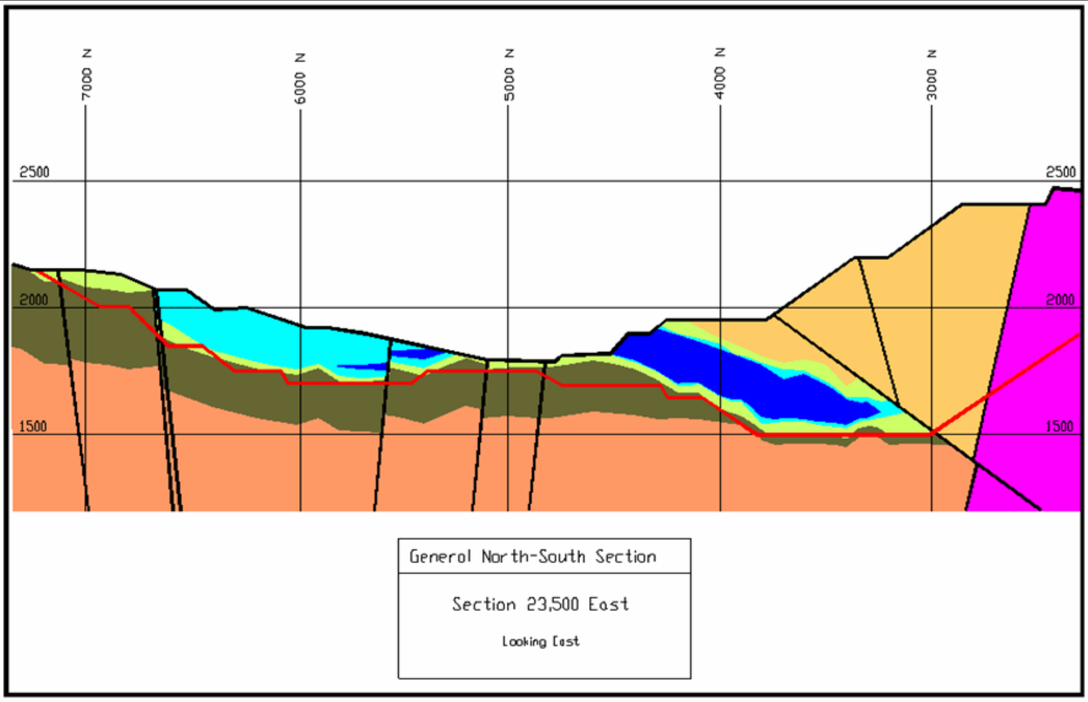


Figure 4. RTB Boron Cross-section

Balanced reporting	• Not applicable. There are no specifically released exploration results for the RTB Boron deposit.
Other substantive exploration data	• Data has been collected from surface exploration drilling as well as underground drilling.
Further work	• Surface core drilling for block model and reconciliation improvements are ongoing; core drilling and RC drilling for geotechnical and hydrologic modelling are ongoing.

SECTION 3 ESTIMATION AND REPORTING OF MINERAL RESOURCES

Criteria	Commentary
Database integrity	• All drill hole data are securely stored in a database which is stored on the Boron server in a permission protected folder, and is backed up regularly. • Hard copy drill logs and assay data are stored in fireproof filing cabinets in Boron. In addition, electronic copies of original documents and/or data submittals are held on the MTS file server. • Data are validated by the resource geologist prior to loading into the Boron drill hole database, in accordance with the Boron drilling database build and validation procedure.
Site visits	• The Boron Resource and Reserve Competent Persons both work onsite at RTB Boron.
Geological interpretation	• The deposit is well known and bedded with all major controlling structures defined. Infill drilling and mining exposure and mapping has supported and refined the model. The current interpretation is thus considered robust. • Lithological and stratigraphic criteria were used to define the geodomains for geological modelling. Each sodium borate ore zone is modelled as a discrete unit, and the ulexite rocktype includes all calcium borates directly above and below the sodium borates. • Core drill hole spacing of 200 ft is validated by geostatistical work, which shows grade continuity on the order of 400 ft. Drill spacing is sufficient to establish geological and grade continuity, and to support the current Mineral Resource and Ore Reserve classifications.
Dimensions	• The sodium borates are roughly elliptical-shaped in plan, 2 miles in length (E-W), 1 mile in width, and range to a greatest thickness of 300 feet in the south-central portion of the deposit. • Calcium borates are far more extensive, with thin beds extending more than 1 mile to the west of the pit, and some related stratigraphy as far as several miles away.

	• Borate mineralization occurs from about 50 ft to 1,200 ft below surface.
Estimation and modelling techniques	• The estimation process was completed using the Maptek Vulcan geological modelling software package. The model was built by developing east-west cross sections at intervals through the deposit, using all drill holes and mapping data available. • Each sodium borate ore zone is modelled as a discrete unit (domain), and the ulexite rocktype includes all calcium borates directly above and below the sodium borates. • Block sizes were determined based on the structural and stratigraphic (fault and ore seam thickness) parameters of the orebody, as well as mining methods. The model contains just over 21 million blocks, with a parent size of 200'x200'x50' and a minimum subcell size of 5'x5'x5'. All borates are limited to a maximum block size of 25'x25'x5', to allow suitable ore seam and structural resolution. Subcelling to 5'x5'x5' occurs in and adjacent to blocks that were previously mined by underground, as well as at stratigraphic and structural contacts. • Grade values used in the models are generated using ordinary kriging, and checked using inverse distance (and nearest neighbor starting with the 2011 model). The kriging parameters were originally developed with the help of Rio Tinto Technical Services (RTTS) Melbourne during the development of the 1999 block model. • There is no significant difference between results of ordinary kriging, inverse distance, and nearest neighbor. In 2008 AMEC performed comparisons between the three methods and found no significant differences. These comparisons are now performed each time the model is updated. • Searches are spherical at 425, 1600, and 3200 feet. Block grades are estimated using sample grades only within the same ore zone and rocktype. • Total Borax % B2O3 and water soluble %B2O3 as well as arsenic (ppm As) are estimated using ordinary kriging, and are checked by inverse distance and nearest neighbor; but only the ordinary kriging estimate is used for classification and resource calculations. • Drilling data is composited on 10-foot intervals within each ore zone and rock type, and grade estimation is limited to samples within the same zone and ore type. This methodology allows for vertical variability within an ore zone, while maintaining recognition that each ore zone is continuous only unto itself. Composite thickness has been chosen as a best fit based on the general thickness of ore zones present, plus sample length. • A maximum grade was applied to the borate estimates of the block model. Tincal has a maximum of 36.5 percent B2O3. All composites with values greater than 36.5 for all three variables, B_2M, B_1HR, and B_TOTL were not used in the estimation. Kernite has a maximum of 50.96 percent B2O3. All composites with values greater than 50.96 for the variables B_1HR and B_TOTL were not used in the estimation. Ulexite has a maximum of 42.95 percent B2O3. All composites with values greater than 42.95 for the variable B_TOTL were not used in the estimation. • There is no cut-off grade applied to borates from the Boron deposit. • Significant parameters used in the estimation process include: o Assigning of parent block values to sub-blocks. Estimates are only calculated at the center of each 25'x25'x5' block within the borax, and the estimated value is then assigned to all sub-blocks existing within the parent block space. o Only composites with a value greater than zero were used. o Only composites with lengths greater than three feet were used. o A minimum of 2 and maximum of 8 samples were used for all estimations. o A maximum of 2 composites were used per drill hole. o Composites were selected using anisotropic distances. o Only composites within each RKZONE were used to estimate blocks within that RKZONE. o B2O3 grades greater than the maximum percent (Table 1) for each rock type were not used for estimation. Arsenic grades above the cap grade listed in Table 1 were limited to a range of influence of 25'x25'x10'. • Modelled grades are validated visually using grade plots of each ore zone in addition to cross sections. Swath plots are also generated for estimate and model validation. Statistics of block grades estimated by ordinary kriging within each rock zone are calculated and compared against the composite statistics.
Moisture	• All ore tonnages are estimated on a "near dry" (2-3% free moisture) basis by allowing samples to air-dry sufficiently. This is based upon imprecise relationships between air-dried and equilibrium moisture, with in-situ moisture tempered by borate ore zone and grade, variable groundwater intrusion into the orebody, water addition for dust control during mining, and plant feed moisture.
Cut-off parameters	• There is no cut-off grade currently applied to borates from the Boron deposit. • The ore-waste boundary is very clearly defined and visible both in drilling and mining. The ore is clear to white, and the waste is typically green, tan, or black. There is clear stratigraphic and

	occasionally structural contact between ore and waste materials. • Boron resources and reserves have not historically been sensitive to pricing assumptions. Some work has been done to determine a cut-off grade, and the results have shown that any reasonable potential cut-off grade is significantly lower than the mineable ore in the deposit. • Rio Tinto applies a common process to the generation of commodity prices across the group. This involves generation of long-term price curves 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	• The current mining method is conventional truck and shovel, open pit mining at appropriate bench heights. Current mining practices include grade control utilizing blast hole data. • The ore mining equipment (wheel loaders occasionally assisted by dozers or backhoes for additional separation) is smaller than the waste shovel fleet to facilitate better selectivity during mining. The SMU is at smallest a 5 foot cube, representing sand backfill in old underground workings, which is incorporated into the block model. Mining practice in the stope areas involves using the backhoe or dozer to remove backfill from the stopes ahead of ore mining, minimizing dilution and ore loss. • Sodium borate mining recovery for open pit mining in Boron is estimated at 95% for the life of the mine. Calcium borate recovery is estimated at 60% for open pit mining, and 95% for stockpile mining. • Dilution is not factored into reserve calculations because B2O3 tons are not affected by diluting materials. However dilution is included in mining schedules. The effect of dilution is to increase the crude tons of material into the process plants, thereby reducing the ore grade and slightly elevating costs. Typical dilution rates applied are 10% for tincal mined and 3% for kernite mined. • Dilutants primarily include hanging- and footwall ulexite, and to a lesser extent different wastes directly in contact with ore at fault contacts. This is referred to as "contact dilution". Secondarily, the sand used historically to backfill underground stopes is called "stope dilution". Contact and stope dilution are calculated in the mining schedule, since modelling these directly in the block model would be exceedingly complex, and dilution is variable depending on location and separation ability.
Metallurgical factors or assumptions	• Boron ore is principally composed of three main components: borate, clay, and water, with minor amounts of deleterious materials present locally. Deleterious materials are blended in the feed to maintain manageable concentrations. Deleterious elements of concern include: Moisture, Sand, Wood, Arsenic, Soluble Sulfate, Soluble Iron, and size fraction of insoluble (clay) materials. • The principal concern of the refinery is ore grade control. As long as the ore feed is maintained at an average % B2O3 grade of 22%+/-2.2% for Primary Process (Modified Direct Dissolving of Kernite - MDDK) and 32%+/-3.2% for the Boric Acid Plant, there are few other attributes that have significant regular impact on refinery processes. • The Primary Process plant uses the MDDK process to dissolve the ore. MDDK involves the fine grinding of a blend of tincal and kernite ores followed by dissolution in water in a series of agitated tanks. A mechanical evaporator is added to the sodium borate process to allow direct usage of MDDK-derived liquors for both sodium borate pentahydrate (Neobor) production and sodium borate decahydrate (Borax) production. • The Boric Acid Plant uses sulfuric acid to dissolve kernite due to the relatively slow water-solubility of kernite ore. After dissolution, the gangue is separated using rake classifiers, and the liquor is sent to thickeners for settling of fine clays. • Refinery recovery traditionally used for reserve estimation is the average of the recoveries experienced for the previous 5 years. Since the MDDK process was commissioned in 2014, we use the available 2.5-3 years of MDDK refinery recovery for reserve estimation of that plant. • Calcium borates (Ulexite) are mined and stockpiled with future plans to be processed by the Boric Acid Plant as well as other potential end uses. Multiple processing options exist for multiple markets. The general process for extraction is understood (beneficiation to acceptable head grade and dissolving in sulfuric acid). RTB Boron is currently reassessing the processing assumptions and likely economics of calcium borates through additional pilot plant studies and improving our stockpile knowledge.
Environmental factors or assumptions	• Appropriate environmental permitting and licences are in place for mining operations at RTB Boron. • Boron environmental aspects are managed under and are compliant with ISO 14001 principles and Boron has been ISO certified for several years. • RTB Boron has an extensive environmental and heritage approval and compliance process. No issues are expected that would impact the Mineral Resource estimate.

Bulk density	• Dry Bulk Density (DBD) measurements are determined by the water displacement method using the CoreLok® Density Measurement Apparatus and Procedure. • 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. • Ore densities are assigned based on estimated grades (densities are a function of grades). A linear estimator for the grade to density correlation for the ore types are calculated by using the Reduction to Major Axis method.
Classification	• Resource categories for in-situ borates are classified based on distance from the estimated block to the nearest sample used for the estimation. Statistics, variography, and mining history prove that each ore zone is very consistent with respect to B2O3 grade, over the entire deposit[HS(2)]. • Blocks within 425 feet of a minimum of 2 samples are classified Measured, while those from 425 to 1600 feet are Indicated, and those outside 1600 feet are Inferred. With the average drill spacing approaching half the distance used to gauge the measured resource there is little material in the deposit that is not classified as Measured. • Calcium borate stockpiles are classified as Inferred due to lower confidence levels from the inherent variability and lack of geological continuity between drill holes in the stockpile. Global average grades from stockpile drilling and tonnages based on those grades are currently estimated and used in resource reporting. • 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	• RTB Boron has had 2 audits and reviews of resource & reserve estimates since 2010, they include: o Reserve and Resource compliance audit for corporate assurance, AMEC, 9/11. Overall audit rating: Satisfactory. No High Rated Findings for Resource estimates were found. Only a few moderate and low findings were identified which covered recommended documentation improvements, model validation improvements, and procedural improvements. These issues have since been addressed. o Rio Tinto Group Internal Audit Resources and Reserves, Xstract Mining, 7/17. Overall audit rating: Marginal. 1 High Rated Finding, 4 Moderate Findings, and 6 Low findings for Resource estimates were identified. • The 2017 Audit High Rating finding identified (positive, but unexplained) discrepancies between reconciliation of the Resource model estimates and grade control estimates on a blast basis in both tonnes and grade in certain areas exist. This is currently being addressed by implementing a Grade Control Model based on blast hole sampling data using Maptek Vulcan modelling software which will be reconciled with the Resource model. • The 2017 Audit Moderate Rating findings included: o Assignment of Indicated resource classification to low grade ulexite stockpiles. This has been addressed by reclassifying the ulexite stockpiles to inferred status while additional work to establish an economic cut-off criteria is updated.[HS(3)] o Mineral Resource process and signoff. This issue has been addressed by creating and implementing a Mineral Resource Reporting Process Flowsheet which includes signoff's for every step of the Mineral Resource estimation and reporting process by responsible persons and by the Competent Person. o Mineral Resource Classification Process based solely on estimation search pass criteria. This issue is being addressed by scheduling a review of the current resource classification process and inclusion of considerations for geological complexity and faulting as well as drill hole coverage and sample spacing be implemented into the process. o Sampling protocol at Primary Process plant issues were identified. The issues are currently being addressed by having a review performed of the sampling systems as well as a QA/QC program at the onsite laboratory instated. • The 2017 Audit Low Rating findings covered procedural documentation, recommendations for geological modelling and domaining improvements, database security improvements, grade control improvements, ulexite reference standard implementation, and density data QA/QC improvements. All of these issues are currently being addressed.
Discussion of relative accuracy/ confidence	• Statistics, variography, and mining history prove that each ore zone is very consistent with respect to B2O3 grade, over the entire deposit. • With the average drill spacing approaching half the distance used to gauge the measured resource, there is a high level of confidence in the reported global estimates of tonnes and grades for the RTB Boron Mineral Resources. • Due to uncertainties in the structural model, there may be structural disturbance at the scale of mining that have not been identified. Further planned infill drilling will be used to assist in

	resolving these issues and to improve confidence in the resource model. • Accuracy and confidence of the Mineral Resource estimation estimate has been accepted by the Competent Person.

SECTION 4 ESTIMATION AND REPORTING OF ORE RESERVES

Criteria	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• A 3D resource model of topography, structure, and quality is used for in-situ resource definition. • Modifying factors for this Ore Reserve estimate were applied to the Mineral Resource estimate. • The most recent Mineral Resource estimate together with the latest update of Life of Mine pit designs and mining schedules were used for reporting of Ore Reserves. • Mineral Resources are reported in addition to Mineral Reserves.
Site visits	• The Boron Resource and Reserve Competent Persons both work onsite at RTB Boron.
Study status	• RTB Boron is an existing operation of over 90 years. • The reportable Ore Reserve is based on the life of mine plan and has been determined a mine plan that is technically achievable and economically viable, and that material modifying factors have been considered.
Cut-off parameters	• There is no cut-off grade currently applied to borates from the Boron deposit. • The ore-waste boundary is very clearly defined and visible both in drilling and mining. The ore is clear to white, and the waste is typically green, tan, or black. There is clear stratigraphic and occasionally structural contact between ore and waste materials. • Boron resources and reserves have not historically been sensitive to pricing assumptions. Some work has been done to determine a cut-off grade, and the results have shown that any reasonable potential cut-off grade is significantly lower than the mineable ore in the deposit. • Rio Tinto applies a common process to the generation of commodity prices across the group. This involves generation of long-term price curves 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. • For annual JORC reserves reporting purposes, detailed mine design and schedules are constructed to generate detailed cash flow schedules. A discounted cash flow analysis is conducted to re-assess under the latest economic assumptions the potential reserves remain net cash flow positive.
Mining factors or assumptions	• The current mining method is conventional truck and shovel, open pit mining at appropriate bench heights. Current mining practices include grade control utilizing blast hole data. • The ore mining equipment (wheel loaders occasionally assisted by dozers or backhoes for additional separation) is smaller than the waste shovel fleet to facilitate better selectivity during mining. The SMU is at smallest a 5 foot cube, representing sand backfill in old underground workings, which is incorporated into the block model. Mining practice in the stope areas involves using the backhoe or dozer to remove backfill from the stopes ahead of ore mining, minimizing dilution and ore loss. • Sodium borate mining recovery for open pit mining in Boron is estimated at 95% for the life of the mine. ~~Calcium borate recovery is estimated at 60% for open pit mining, and 95% for stockpile mining~~[HS(4)]. • Dilution is not factored into reserve calculations because B2O3 tons are not affected by diluting materials. However dilution is included in mining schedules. The effect of dilution is to increase the crude tons of material into the process plants, thereby reducing the ore grade and slightly elevating costs. Typical dilution rates applied are 10% for tincal mined and 3% for kernite mined. • Dilutants primarily include hanging- and footwall ulexite, and to a lesser extent different wastes directly in contact with ore at fault contacts. This is referred to as "contact dilution". Secondarily, the sand used historically to backfill underground stopes is called "stope dilution". Contact and stope dilution are calculated in the mining schedule, since modelling these directly in the block model would be exceedingly complex, and dilution is variable depending on location and separation ability. • All sodium borate resources within the ultimate pit are converted to Ore Reserves, with the exception of any classified as Inferred. There are a very small number of inferred sodium borate blocks in the model, all of which are categorized as waste during the modelling process. Pond and stockpile material included in the mine plans are also converted to reserves based on resource confidence and economic viability. • Pit optimization is an ongoing process. The software package Comet was previously used for pit

	optimization. Currently, the Whittle software package is being utilized for pit optimization and economic sensitivity analysis. Valuation of blocks for floating-cone analyses is challenging at best due to the fact that kernite may report to either BAP or Primary Process, each of which results in significantly different value. • Due consideration of geotechnical, geometric, and access constraints are all taken into account. Elevation above or below 1,500 ft is used as a modifying factor for Proven and Probable reserve classification due to elevated geotechnical risk. • Geotechnical factors included in reserve LOM designs include slopes that are designed with a combination of limit equilibrium and finite different modelling, rock mass strengths are a function of intact rock strength combined with fracture shear strength and RQD, dual requirement for Factor of Safety and Probability of Failure, Factor of Safety greater than or equal to 1.2, probability of failure less than or equal to 20%, overall wall failures are controlled through a combination of low slope angles and regular step outs, production blasts are designed to minimize impacts on interim and final walls.
Metallurgical factors or assumptions	• Boron ore is principally composed of three main components: borate, clay, and water, with minor amounts of deleterious materials present locally. Deleterious materials are blended in the feed to maintain manageable concentrations. Deleterious elements of concern include: Moisture, Sand, Wood, Arsenic, Soluble Sulfate, Soluble Iron, and size fraction of insoluble (clay) materials. • The principal concern of the refinery is ore grade control. As long as the ore feed is maintained at an average % B2O3 grade of 22%+/-2.2% for Primary Process (Modified Direct Dissolving of Kernite - MDDK) and 32%+/-3.2% for the Boric Acid Plant, there are few other attributes that have significant regular impact on refinery processes. • The Primary Process plant uses the MDDK process to dissolve the ore. MDDK involves the fine grinding of a blend of tincal and kernite ores followed by dissolution in water in a series of agitated tanks. A mechanical evaporator is added to the sodium borate process to allow direct usage of MDDK-derived liquors for both sodium borate pentahydrate (Neobor) production and sodium borate decahydrate (Borax) production. • The Boric Acid Plant uses sulfuric acid to dissolve kernite due to the relatively slow water-solubility of kernite ore. After dissolution, the gangue is separated using rake classifiers, and the liquor is sent to thickeners for settling of fine clays. • Refinery recovery traditionally used for reserve estimation is the average of the recoveries experienced for the previous 5 years. Since the MDDK process was commissioned in 2014, we use the available 2.5-3 years of MDDK refinery recovery for reserve estimation of that plant. • RTB Boron has been in operation for over 90 years, as such, the process technology for the Reserve estimate is well tested and proven.
Environmental	• Appropriate environmental permitting and licences are in place for mining operations at RTB Boron. • Boron environmental aspects are managed under and are compliant with ISO 14001 principles and Boron has been ISO certified for several years. • RTB Boron has an extensive environmental and heritage approval and compliance process. No issues are expected that would impact the Mineral Reserve estimate. • The RTB Boron mine (including the refining operation) is a zero-discharge facility, meaning all water and wastes are kept onsite. The only exception is any waste deemed hazardous, which is disposed according to state and federal laws and guidelines. Other environmental considerations include the potential for acid rock drainage (ARD) and the potential for asbestiform minerals (PAM's).
Infrastructure	• RTB Boron is an operating site with existing infrastructure in place to support the operation. The current LOM plan takes into consideration sustaining capital to maintain the existing infrastructure as well as capital for plant upgrades. Where required, replacement infrastructure is captured in capital assessments.
Costs	• Operating costs are derived from the 5 year plan process with a differentiation between fixed and variable and are aligned with Rio Tinto Procurement estimates on consumables for the Boron mine. Fixed costs are held flat through the LOM, while the variable component fluctuates with changes in production over the LOM. Mine operating costs are pulled from the LOM schedule which differentiates variable and fixed over the LOM. Supply chain costs are derived from the 5 year plan from the logistics team. The long-term distribution cost assumption outside of the 5 year plan is considered variable and fluctuates with changes in the volumes over the LOM. Corporate SG&A is considered fixed and is held flat outside of the 5 year plan Inflation and FX is supplied from Rio Tinto Economics. Taxes estimates are based on guidance from RT Tax and includes the inclusion of depletion and US based depreciation schedules. • The capital profile is derived from the Q3 2017 5 year plan process and is based on first principles engineering estimates. Beyond the 5 year plan, mining capital is derived from the LOM mining schedule, i.e. HME replacements and expansions to support production targets.

	Processing capital estimates outside of the 5 year plan are based on a 5 year average run rate per B2O3mt produced and fluctuates with changes in production over LOM. Although minimal debottlenecking projects outside of the 5 year plan were derived from pilot plant engineering expertise.
Revenue factors	• Rio Tinto applies a common process to the generation of commodity prices across the group. This involves generation of long-term price curves 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.
Market assessment	• The financial model for the borates business uses a top-down approach in which product sales volumes are forecasted by region in the 5 year plan by the Borates Marketing and Commercial team (not a publicly traded commodity). The long-term volume growth assumption outside of the 5 year plan is developed with internal guidance from Marketing as well as the global demand forecast from RT economics, which takes into account global demand and competitor behaviour. Volumes growth is limited by production capacity limitations as agreed up in the development in the LOM during the 2017 planning process.
Economic	• Economic inputs such as foreign exchange rates, carbon pricing, and inflation rates are generated internally by Rio Tinto and are applied to the LOM valuation assumptions. The detail of this process is commercially sensitive and is not disclosed.
Social	• Appropriate environmental permitting and licences are in place for mining operations at Boron. • Boron environmental aspects are managed under and are compliant with ISO 14001 principles and Boron has been ISO certified for several years. • RTB Boron has an extensive environmental and heritage approval and compliance process. No issues are expected that would impact the Mineral Reserve estimate or licence to operate.
Other	• Semi-quantitative risk assessments have been undertaken throughout the LOM and Reserve phases. No material naturally occurring risks have been identified through the above mentioned risk management processes.
Classification	• The Ore Reserve consists of 68% Proved Reserves and 32% Probable Reserves. 69% of Probable Reserves are derived from Measured Mineral Resources. • Elevation above or below 1,500 ft below surface is also used to classify Proven and Probable Reserves due to elevated geotechnical risk. • Short term surface stockpiles and reclaimed pond material are classified as Probable Reserves. • There are no Inferred or Unclassified Mineral Resources included in the stated Ore Reserve numbers. • The Competent Person is satisfied that the stated Ore Reserve classification reflects the outcome of technical and economic studies.
Audits or reviews	• RTB Boron has had 2 audits and reviews of resource & reserve estimates since 2010: o Reserve and Resource compliance audit for corporate assurance, AMEC, 9/11. Overall audit rating: Satisfactory. 1 High Rated Finding for Reserve estimates was found in which involved spatial reconciliation not being performed. This has since been addressed. Only a few moderate and low findings were identified which involved QA/QC at the Boron assay laboratory, economic testing for ulexite outside of the Reserve pit, blast hole assay relevance for reconciliation purposes, and documentation improvements. These issues have since been addressed. o Rio Tinto Group Internal Audit Resources and Reserves, Xstract Mining, 7/17. Overall audit rating: Marginal. 2 High Rated Findings, 2 Moderate Findings, and 2 Low findings for Resource estimates were identified. • The first 2017 Audit High Rating finding identified the lack of a Mineral Process pathway for the low grade ulexite stockpile to Pre-feasibility level. This has been addressed by reclassifying the ulexite stockpiles to inferred Resource status and remaining in-situ ulexite material to measured and indicated Resource status until a reassessment of processing assumptions is completed[HS(5]]. • The second 2017 Audit High Rating finding identified (positive, but unexplained) discrepancies of reconciliation between the Resource model estimates and grade control estimates on a blast basis in both tonnes and grade in certain areas exist. This is currently being addressed by implementing a Grade Control Model based on blast hole sampling data using Maptek Vulcan modelling software which will be reconciled with the Resource model. Other steps to address this include improvements to sampling and measuring systems, developing strategies to and work plans to improve reconciliation results, adjust infill drilling as needed to understand unique features within the deposit, improve the reconciliation data management system to allow greater accuracy.

	• The 2017 Audit Moderate Rating findings included: o A change in marketing strategy and subsequent mine plan has not triggered the development of a detailed supporting work program and timeline. This issue is being addressed by evaluating different LOM scenarios and updating the business implementation timeline with critical tasks to be completed. o Valuation model requires validating and written process and procedures are required for financial modelling. This issue has been addressed by implementation of internal validations and a formal signoff process for the valuation model. • The 2017 Audit Low Rating findings covered procedural documentation, economic consideration of ulexite outside of current reserve pit. These issues are currently being addressed.
Discussion of relative accuracy/ confidence	• The Ore Reserve estimation techniques utilized for the Boron Mine are consistent with those applied across other Rio Tinto operations. • Accuracy and confidence of modifying factors are generally consistent with the current operation. • Reconciliation of actual production with the Ore Reserve estimate for the existing operation is generally within 10% for B2O3 tonnage. This result is indicative of a satisfactorily robust Ore Reserve estimation process. Projects are underway to improve reconciliation results which will increase the relative confidence in the Ore Reserve estimation.