Red River increases Liontown contained gold by 125%

Highlights:

- **Updated Liontown Mineral Resource (Fresh Sulphide) of 2.6 Mt @ 0.7% Cu, 1.6% Pb, 5.1% Zn, 1.4 g/t Au & 30 g/t Ag (12.4 % Zn Eq.)**
- **Material increase in tonnage and contained metal from 2015 Liontown Mineral Resource (Fresh Sulphide) estimate:**
  - **36% increase in Mineral Resource Tonnage**
  - **125% increase in contained gold**
  - **109% increase in contained copper**
  - **53% increase in contained zinc**
  - **34% increase in contained lead**
  - **51% increase in contained silver**
- **Total Liontown Project Mineral Resource (Fresh Sulphide) (Liontown + Liontown East) increases +20% to 4.1Mt @ 0.6% Cu, 1.9% Pb, 5.9% Zn, 1.1 g/t Au & 29 g/t Ag (12.7% Zn Eq.)**
- **Separate shallow oxide resource of 113,000 tonnes @ 1.9g/t Au & 24 g/t Ag**
- **The Liontown Project is open at depth and strike – excellent potential for further increases**
- **Liontown progressing as the next mine at Thalanga – mine design and mine planning studies expected next quarter.**

Base and precious metals producer Red River Resources Limited (ASX: RVR) ("Red River" or "the Company") is pleased to announce it has updated the Liontown Mineral Resource Estimate following recent drilling, delivering a Liontown Mineral Resource (Fresh Sulphide) for the Liontown Main, New Queen, Western Footwall and Gap lodes of **2.6 Mt @ 0.7% Cu, 1.6% Pb, 5.1% Zn, 1.4 g/t Au and 30 g/t Ag (12.4% Zn Eq.)**. Liontown is part of Red River's Thalanga operations in northern Queensland.

The updated Liontown Mineral Resource (Fresh Sulphide) is a material increase in tonnage and contained metal over the previously announced (2015) Liontown Mineral Resource (Fresh Sulphide). Tonnage has increased by 36%, with a 125% increase in contained gold, a 51% increase in contained silver, a 109% increase in contained copper, a 34% increase in contained lead and a 53% increase in contained zinc.

The Liontown Mineral Resource contains a high-grade copper-gold resource of 612,000 tonnes @ 1.6% Cu, 0.7% Pb, 2.1% Zn, 3.5 g/t Au & 13 g/t Au in the Western Footwall and Gap Lodes and also reported is a separate shallow oxide resource of 113,000 tonnes @ 1.9g/t Au & 24 g/t Ag.

The total Liontown Project Mineral Resource (Liontown & Liontown East) has increased by 20% to 4.2Mt @ 0.6% Cu, 1.9% Pb, 5.9% Zn, 1.1 g/t Au & 29 g/t Ag (12.7% Zn Eq.)

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Red River Managing Director Mel Palancian said, *"The material upgrade to the Liontown Mineral Resource, with contained gold and copper more than doubling is an outstanding result, and validates our decision to develop Liontown as the third mine as part of our Thalanga operations, especially given its high gold content.*

"This year we plan to progress Liontown for potential development next year as we work to increase our exposure to gold at Thalanga while prices are at record highs, in tandem with bringing the Hillgrove gold project in NSW back into production this year."

Red River plans to develop Liontown as the third mine as part of its Thalanga operations, given the high-grade gold-rich nature of the deposit. It has a pre-existing Mining Lease (ML 10277) at Liontown and this may enable early works to commence to develop the deposit, initially targeting the New Queens Lens. Liontown mine design work and mining studies are proceeding and expected to be complete next quarter.

Red River updated the Liontown Mineral Resource using results from its recently completed drilling program of (34 holes drilled in 2019 and 3 holes drilled in 2018) at Liontown. Geological data from the drilling program was also used to more accurately model the various lodes at Liontown. A separate shallow oxide Mineral Resource of 113,000 tonnes @ 1.9 g/t Au & 24 g/t Ag was estimated. Transitional mineralisation was also estimated but not reported (metallurgically complex and not material).

Table 1 Liontown Mineral Resource (Fresh Sulphide) (5% Zn Eq. CoG; Main, New Queen, Western Footwall & Gap)

Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	1,063	0.4	2.0	6.0	1.0	42	12.2
Inferred	1,547	0.9	1.3	4.5	1.6	22	12.5
Total	**2,610**	**0.7**	**1.6**	**5.1**	**1.4**	**30**	**12.4**

Table 2 Liontown Mineral Resource (Oxide) (1 g/t Au CoG)

Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)
Inferred	113	0.6	1.9	1.2	1.9	24
Total	**113**	**0.6**	**1.9**	**1.2**	**1.9**	**24**

Table 3 Liontown Mineral Resource (Fresh Sulphide) 2020 versus Liontown Mineral Resource (Fresh Sulphide) 2015

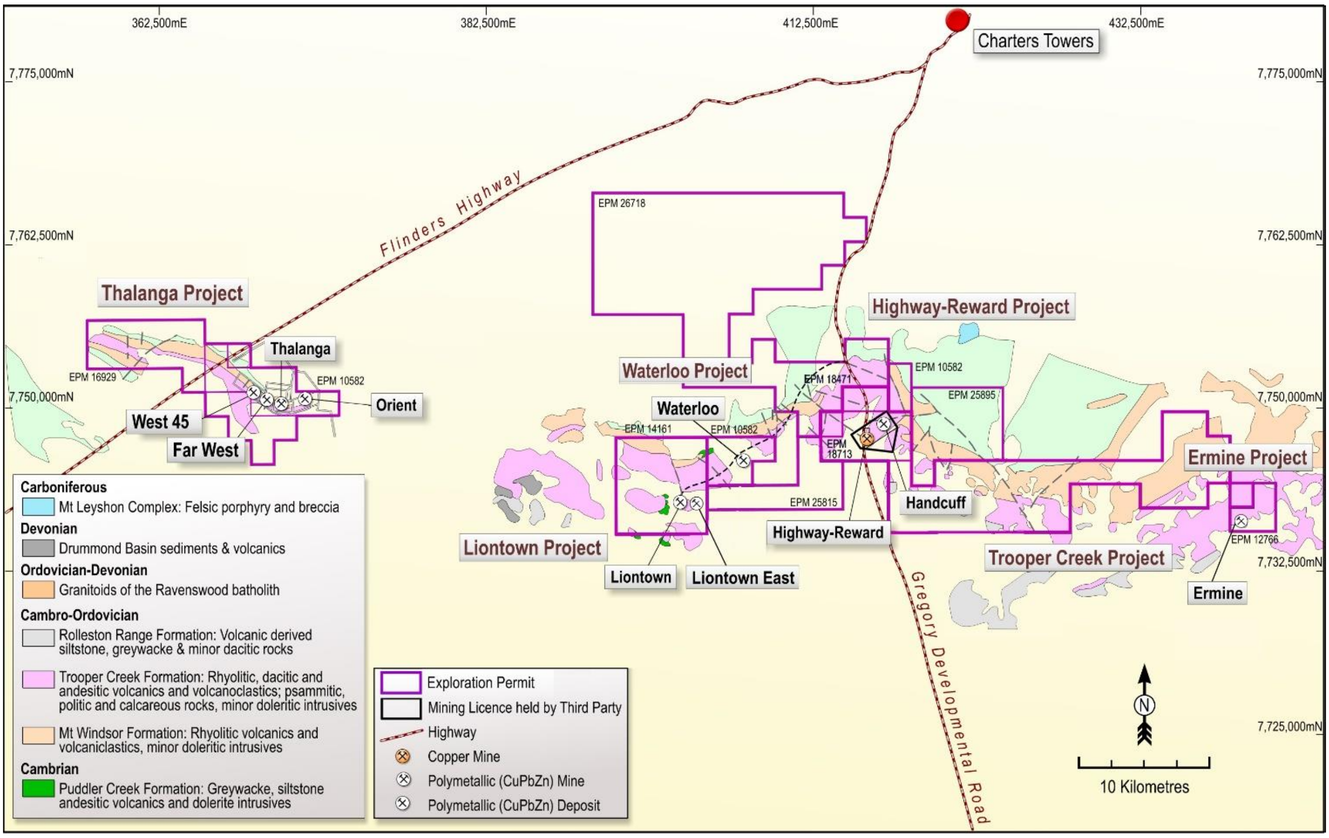
Resource Estimate	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Liontown Fresh Sulphide (2020)	**2,610**	**0.7%**	**1.6%**	**5.1%**	**1.4**	**30**	**12.4%**
		Copper (kt)	Lead (kt)	Zinc (kt)	Gold (koz)	Silver (koz)	Zinc Eq. (kt)
Contained Metal		**18**	**41**	**134**	**117**	**2,516**	**323**
Resource Estimate	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Liontown Fresh Sulphide (2015)	*1,920*	*0.5%*	*1.6%*	*4.6%*	*0.8*	*27*	*8.2%*
		Copper (kt)	Lead (kt)	Zinc (kt)	Gold (koz)	Silver (koz)	Zinc Eq. (kt)
Contained Metal		*9*	*31*	*88*	*52*	*1,662*	*158*
	Tonnage (kt)	Copper (kt)	Lead (kt)	Zinc (kt)	Gold (koz)	Silver (koz)	Zinc Eq. (kt)
Change (%)	**+36%**	**+109%**	**+34%**	**+53%**	**+125%**	**+51%**	**+105%**

The Liontown Project consists of the Liontown and Liontown East deposits (refer to Figure 1), located approximately 32km in a direct line from Red River's Thalanga operations and 107km by road. The trucking route by existing road would consist of 21km by unsealed road from Liontown to the junction with the sealed Gregory Development Road, then 86km by sealed road (Gregory Development Road, Flinders Highway, Thalanga Operations Access Road) to Thalanga.

The Liontown deposit was discovered by Frederick Carrington in 1905, when he observed gold in float material. The identified copper-gold stringer system situated within the footwall of the Liontown deposit was initially mined during 1905-1911. The bulk of production is quoted as coming from the oxide and supergene ores above the water table, however the Lion PC shaft eventually reached a depth of 270m, well into the sulphide ore. The workings and the adjacent town were abandoned in 1911.

The Liontown East deposit was discovered by Red River Resources in July 2016, when a coincident geochemical and geophysical target was drilled approximately 1.2km east of the Liontown Deposit.

Figure 1 Liontown Project Location



The Liontown Mineral Resource can be divided into four major lode systems (Main Lode, Western Footwall, Gap and New Queen, with a small resource in the Carrington Lode). All lode systems are open at depth and strike.

The Mineral Resource contains a high-grade copper-gold resource of 612,000 tonnes @ 1.6% Cu, 0.7% Pb, 2.1% Zn, 3.5 g/t Au & 13 g/t Ag in Western Footwall and Gap Lodes.

Table 4 Liontown Mineral Resource (Fresh Sulphide) (5% Zn Eq. CoG) by Lode

Main Lode							
Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	537	0.5	2.2	7.8	0.4	47	13.5
Inferred	718	0.6	1.8	6.4	0.3	32	11.4
Total	**1,255**	**0.6**	**2.0**	**7.0**	**0.4**	**39**	**12.3**
Western Footwall							
Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	-	-	-	-	-	-	-
Inferred	209	1.3	0.4	2.5	3.7	15	15.0
Total	**209**	**1.3**	**0.4**	**2.5**	**3.7**	**15**	**15.0**
Gap							
Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	-	-	-	-	-	-	-
Inferred	403	1.7	0.8	1.9	3.5	12	15.3
Total	**403**	**1.7**	**0.8**	**1.9**	**3.5**	**12**	**15.3**
New Queen							
Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	526	0.2	1.7	4.3	1.6	37	10.8
Inferred	201	0.2	1.4	4.9	0.7	10	8.5
Total	**727**	**0.2**	**1.6**	**4.5**	**1.4**	**30**	**10.2**
Carrington							
Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	-	-	-	-	-	-	-
Inferred	16	0.4	1.3	4.4	1.3	26	10.0
Total	**16**	**0.4**	**1.3**	**4.4**	**1.3**	**26**	**10.0**
Liontown Fresh Sulphide							
Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	1,063	0.4	2.0	6.0	1.0	42	12.2
Inferred	1,547	0.9	1.3	4.5	1.6	22	12.5
Total	**2,610**	**0.7**	**1.6**	**5.1**	**1.4**	**30**	**12.4**

Figure 2 Liontown Mineral Resource – Oblique View towards NE

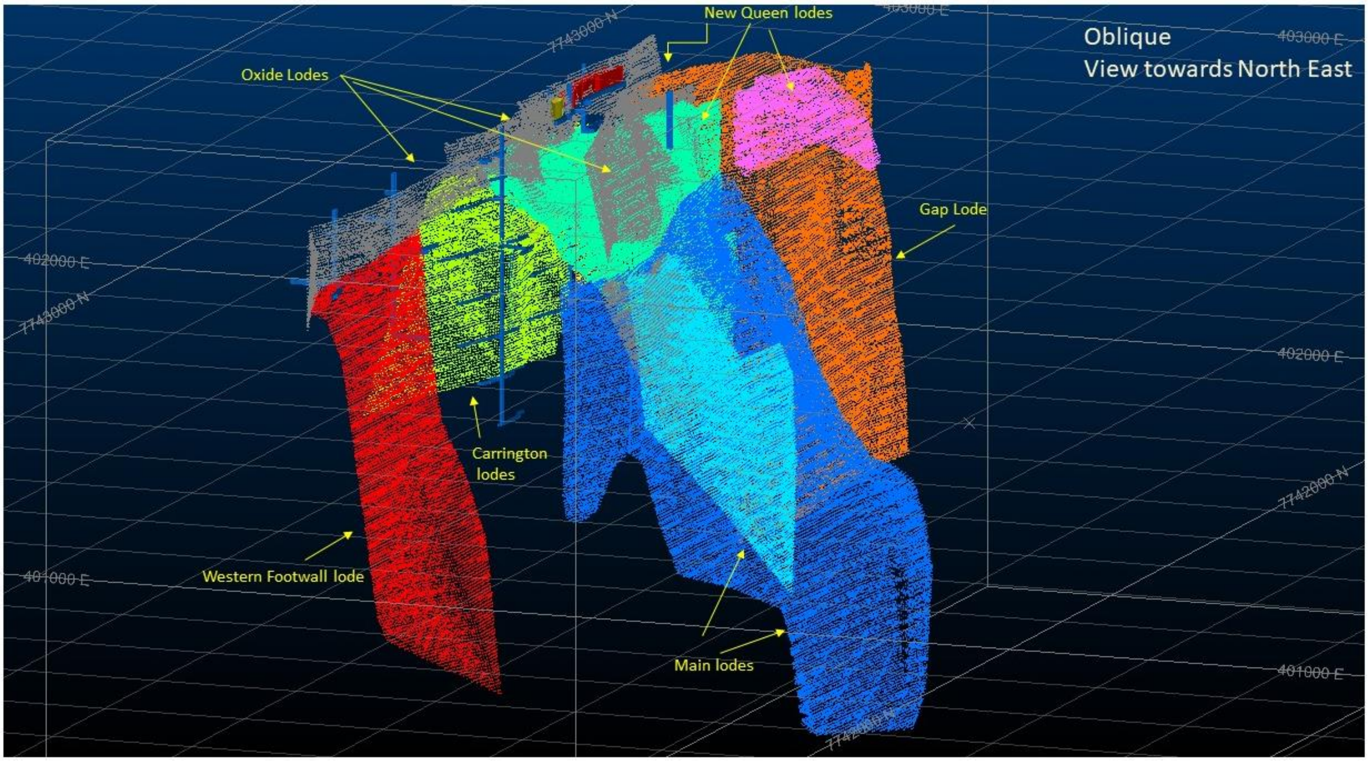
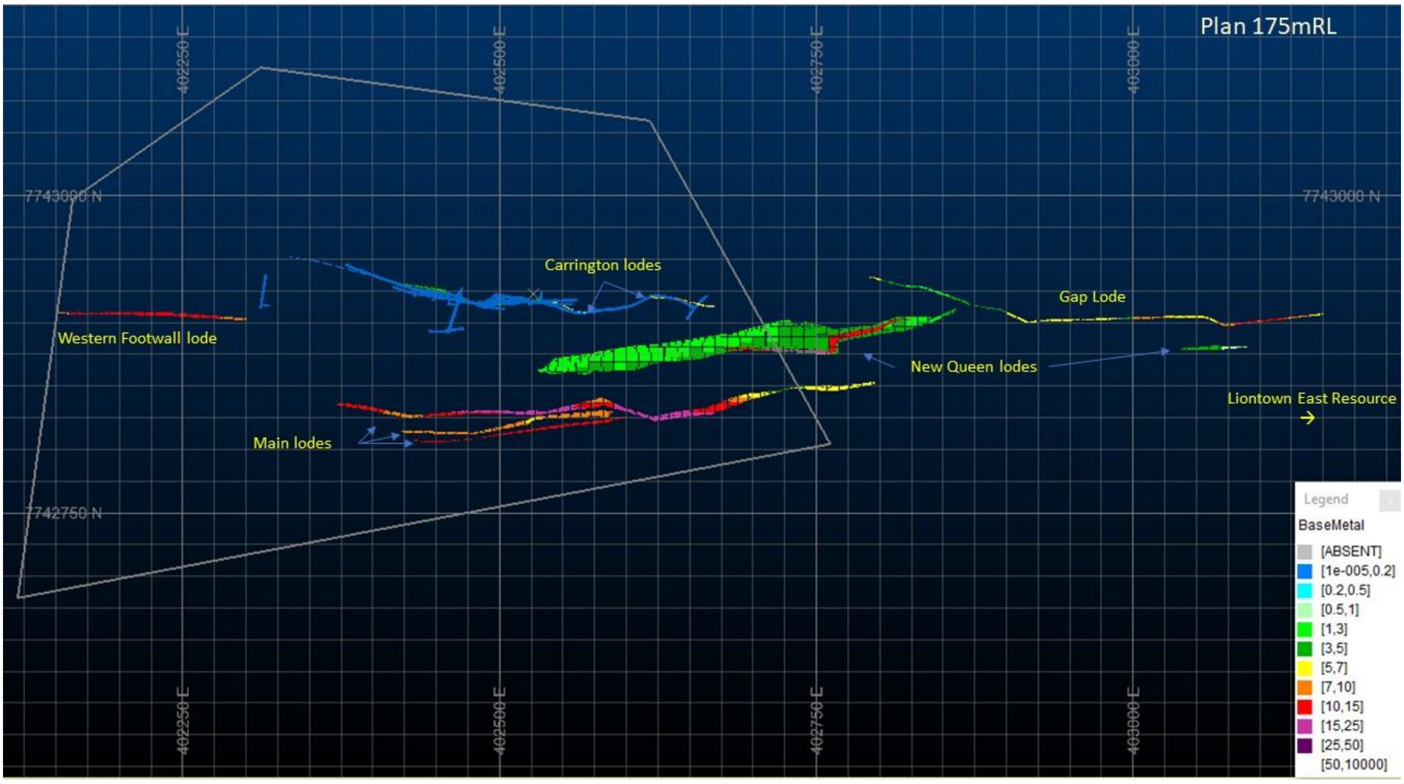


Figure 3 Liontown Mineral Resource - Plan 175mRL



The total Liontown Project Mineral Resource (Liontown & Liontown East) increased materially to 4.1Mt @ 0.6% Cu, 1.9% Pb, 5.9% Zn, 1.1 g/t Au & 29 g/t Ag (12.7% Zn Eq.), with total tonnage increasing by 20%, and contained metals increasing, particularly gold (increase of 75%) and copper (increase of 59%).

Table 5 Liontown Project Mineral Resource (Fresh Sulphide) (5% Zn Eq. cut-off grade)

Liontown							
Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	1,063	0.4	2.0	6.0	1.0	42	12.2
Inferred	1,547	0.9	1.3	4.5	1.6	22	12.5
Total	**2,610**	**0.7**	**1.6**	**5.1**	**1.4**	**30**	**12.4**
Liontown East							
Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	-	-	-	-	-	-	-
Inferred	1,528	0.5	2.5	7.3	0.7	28	13.2
Total	**1,528**	**0.5**	**2.5**	**7.3**	**0.7**	**28**	**13.2**
Liontown Project (2020)							
Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	1,063	0.4	2.0	6.0	1.0	42	12.2
Inferred	3,075	0.7	1.9	5.9	1.2	25	12.9
Total	**4,138**	**0.6**	**1.9**	**5.9**	**1.1**	**29**	**12.7**
		Copper (kt)	Lead (kt)	Zinc (kt)	Gold (koz)	Silver (koz)	Zinc Eq. (kt)
Contained Metal		**26**	**79**	**245**	**152**	**3,916**	**526**
Liontown Project (2018)							
Resource Class	Tonnage (kt)	Copper (%)	Lead (%)	Zinc (%)	Gold (g/t)	Silver (g/t)	Zinc Eq. (%)
Indicated	334	0.4	1.9	4.6	1.2	20	8.3
Inferred	3,101	0.5	2.0	5.9	0.7	29	10.2
Total	**3,435**	**0.5**	**2.0**	**5.8**	**0.8**	**28**	**10.0**
		Copper (kt)	Lead (kt)	Zinc (kt)	Gold (koz)	Silver (koz)	Zinc Eq. (kt)
Contained Metal		*16*	*68*	*198*	*87*	*3,057*	*343*
	Tonnage (kt)	Copper (kt)	Lead (kt)	Zinc (kt)	Gold (koz)	Silver (koz)	Zinc Eq. (kt)
Change (%)	**+20%**	**+59%**	**+15%**	**+23%**	**+75%**	**+28%**	**+53%**

Geology and geological interpretation

The Liontown deposit is of volcanogenic-hosted-massive-sulphide (VHMS) style and is hosted within Cambro-Ordovician marine volcanic and volcano-sedimentary sequences of the Mt Windsor Volcanic Sub-province. Liontown demonstrates strong affinities with other well-known deposits in the region including the Liontown East, Waterloo and the Thalanga group deposits.

The Liontown Main and New Queen lenses of mineralisation are contained between a fine-grained siltstone (hanging wall) and a thick package of rhyodacite pumice breccia (footwall). The mineralisation occurs as massive, banded and stringer sulphides of sphalerite, pyrite, galena and chalcopyrite. The Western Footwall and Gap lenses of copper-gold dominated mineralisation occur within the footwall pumice breccia.

Sampling and sub sampling techniques

Geological logging was carried out by company geologists applying industry standard practices. Reverse circulation samples were collected on a 1m interval and split using a rig-mounted cone splitter to collect samples of 3 to 5kg in size. Drill core was sampled to mineralised boundaries and sawn in half longitudinally while onsite with sample lengths targeting 1m with 97.5% of sample ranging from 0.3 to 2.0m. The samples from 2016 to 2019 drilling programs were sent to Intertek Laboratories Townsville for analysis. 5 holes were sampled as quarter core with half core used for metallurgical test work. Results of the metallurgical test work is awaited.

Hole count and metre count of samples intersecting the mineralised domains is shown below for each respective drill program:

Table 6 Liontown Hole Count & Metres Intersecting Mineralised Domains

Program	Hole Count	Metre Count
Nickel Mines	50	711.48
Esso	25	274.46
Great Mines Limited	43	623
Pancontinental	8	100
Pancontinental	26	341
Liontown Resources	35	268.87
Red River Resources (2016 to 2018)	20	75.98
Red River Resources (2019)	34	987.42

Drilling techniques

Diamond drilling (DD) and reverse circulation (RC) techniques were used to obtain samples during eight major programs of drilling carried out between 1970 and 2019.

Table 7 Liontown Drilling Programs & Technique

Program	Year	Drilling Method
Nickel Mines	1970 to 1973	Diamond Drilling
Esso	1982 to 1983	Diamond Drilling
Great Mines Limited	1987	Reverse Circulation
Pancontinental	1994	Diamond Drilling
Pancontinental	1994 to 1996	Reverse Circulation
Liontown Resources	2007 to 2008	Diamond Drilling
Red River Resources	2016 to 2018	Diamond Drilling
Red River Resources	2019	Diamond Drilling

The criteria used for classification, including drill and data spacing and distribution. This includes separately identifying the drill spacing used to classify each category of mineral resources (inferred, indicated and measured) where estimates for more than on category of mineral resource are reported

The resources have been reported above a 5% Zn Eq. cut-off, a value considered appropriate for potential economic extraction (supported by current mining parameters at Red River's Thalanga operation).

The resources have been classified according to the sample spacing and demonstrated continuity and consistency of the mineralised thickness and grade. A higher confidence in sample data is given to the recent drilling programs. Indicated and Inferred blocks have been reported. The distribution of drilling provides drill intersection spacings of:

10 - 40m for majority of New Queen Lode – Classified as Indicated

20 - 70m for the Main Lens upper sections – Classified as Indicated

60 - 100m for the Inferred area of the Main Lode

15 - 70m for the Western Footwall Lode – Classified as Inferred

15 - 150m for the Gap Lode – Classified as Inferred

Due to age of some data and the multiple project owners, complete records were not always available, in these circumstances lower confidence is placed in the results. In general, the drilling programs overlap spatially allowing for the comparison of programs between each other and eliminating the dominance of one sampling program in any specific area of the Resource.

Sample analysis method

Between 2016 and 2019, drill core samples were sent to Intertek Laboratories Townsville. Samples were crushed to sub 6mm, split and pulverised to sub 75µm in order to produce a representative sub-sample for analysis. Analysis consisted of a four acid digest and Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) for the following elements; Ag, As, Ba, Bi, Ca, Cu, Fe, K, Mg, Mn, Na, Pb, S, Sb, Ti, Zn, & Zr. Samples were assayed for Au using a 25g Fire Assay technique. Standards were submitted at an overall rate of 1 in 20 with greater than 95% of results for ore grade standards returning within 3 standard deviations of certified values for Zn, Pb, Cu and Ag.

For earlier sampling programs industry practices of the day were applied. In general, samples were crushed to sub 6mm, split and pulverised to sub 75µm in order to produce a representative sub-sample for analysis. Most samples were analysed following a three or four acid digest by either via Atomic Absorption Spectrum (AAS) or Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) for the base metal analysis. For gold analysis a fire assay method using either a 25g, 30g or 50g charge with an AAS finish was used.

Estimation methodology

Geological and geochemical interpretation including sectional assessment of hanging wall and footwall strata was undertaken and 3D wireframes of the mineralised domains were created. The mineralised domains are defined by continuous and consistent mineralisation style and grade continuity. The Liontown Main domain contains massive, semi massive and stringer sulphide mineralisation which approximates a 5% combined Zinc and Lead Grade. The New Queen domains are similar but contain a larger portion of sheared and low-grade mineralisation. The Gap and Western footwall domains are modelled with Au and Cu as the dominant mineralisation style. A 0.5 g/t Au domain was used for estimation of the Oxide Au Resource.

The Mineral Resource estimate was undertaken using ordinary kriging and inverse distance estimation methods depending on data availability for the generation on variograms and 3D estimation software. 3D wireframes of the mineralised envelope were filled with model blocks of appropriate size. Drill samples were top capped where appropriate to reduce the impact of extreme high-grade samples. Samples were composited to 1 m to reduce sample size bias. Estimations of copper, zinc, lead, silver, gold, iron and barium grades into the model blocks was undertaken using sample limitations and octant requirements to reduce sample distribution bias. Multiple increasing search distances for sample selection was used. The mineralised domain envelopes were considered a hard boundary for estimation purposes.

Cut-off grades, including the basis for the selected cut-off grades

The Sulphide Mineral Resources (Fresh) have been reported above a 5% Zn Eq. cut-off into Inferred, Indicated categories. The basis for cut-off grade is that a 5% Zn Eq. grade is assessed as the lower cut-off for definition of potential economic mineralization using the proposed underground mining methodology. It maintains a consistency of reporting across Red River operations. The possibility of a shallow open cut exists in this area and the model contains lower grade non-resource material that may be assessed, and may be moved into resource should its outlook be positive.

The Inferred Oxide Mineral Resource has been reported above a 1g/t Au cut off as this is assessed as appropriate for the mineralisation style and the likelihood of providing a potentially economic reserve for a shallow open cut operation. The Inferred Oxide Resource is shallow and located above the sulphide lodes, increasing its likelihood of adding value to an open pit reserve, once further drilling allows conversion to Indicated

Figure 4 Liontown Mineral Resource – Grade Tonnage Curve

Mining and metallurgical methods and parameters, and other material modifying factors considered

The bulk density of the Mineral Resource was calculated into blocks from content estimates of dense minerals based on the estimated block grades of Zn, Pb, Cu, Fe and Ba and measured gangue densities. The density calculation incorporates void and porosity influences through an assigned gangue density.

The density calculation was validated by a regression assessment against empirical test work on the Liontown core following the Archimedes principle. The densities are reported on a dry basis.

The Mineral Resource has been estimated with the intent of being mined by selective mining methods such as underground drive development and long hole stoping techniques. For conversion to Ore Reserve, material that is sub 2 metres thick will require a higher cut off to accommodate the additional minimum mining width dilution. The consideration of a shallow open cut is also expected.

It is assumed that mined parts of the Resource would be trucked to the Thalanga Processing Facility for processing via crushing, milling and conventional flotation to produce concentrates containing Zn, Pb, Ag, Cu and Au. Historic metallurgical test work exists, and further test work is ongoing. Ore sorting may be applicable.

A gold-silver oxide Mineral Resource has also been defined. Red River is currently investigating the potential to process gold-silver oxide ore through the Thalanga Mill.

COMPETENT PERSON'S STATEMENT

Mineral Resources

The information in this report that relates to the estimation and reporting of the Liontown Mineral Resource is based on and fairly represents, information and supporting documentation compiled by Mr Peter Carolan who is a Member of The Australasian Institute of Mining and Metallurgy and a full-time employee of Red River Resources Ltd.

Mr Carolan has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Mr Carolan consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. The information in this report that relates to database compilation, geological interpretation and mineralisation wireframing, project parameters and costs and overall supervision and direction of the Liontown Mineral Resource estimation is based on and fairly represents, information and supporting documentation compiled under the overall supervision and direction of Mr Carolan.

About Red River Resources (ASX: RVR)

RVR is seeking to build a multi-asset operating business focused on base and precious metals with the objective of delivering prosperity through lean and clever resource development.

RVR's foundation asset is the Thalanga Base Metal Operation in Northern Queensland, which was acquired in 2014 and where RVR commenced copper, lead and zinc concentrate production in September 2017.

RVR has recently acquired the high-grade Hillgrove Gold-Antimony Project in New South Wales, which will enable RVR to build a multi-asset operating business focused on base and precious metals.

On behalf of the Board,

Mel Palancian

Managing Director

Red River Resources Limited

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Zinc Equivalent Calculation

The net smelter return zinc equivalent (Zn Eq.) calculation adjusts individual grades for all metals included in the metal equivalent calculation applying the following modifying factors: metallurgical recoveries, payability factors (concentrate treatment charges, refining charges, metal payment terms, net smelter return royalties and logistic costs) and metal prices in generating a zinc equivalent value for copper (Cu), lead (Pb), zinc (Zn), gold (Au) and silver (Ag).

Red River has selected to report on a zinc equivalent basis, as zinc is the metal that contributes the most to the net smelter return zinc equivalent (Zn Eq.) calculation. It is the view of Red River Resources that all the metals used in the Zn Eq. formula are expected to be recovered and sold.

Where:

Metallurgical Recoveries are derived from historical metallurgical recoveries from test work carried out at the Liontown Project (Liontown and Liontown East) and from ongoing metallurgical data generated from operational activities at Thalanga (processing West 45 and Far West). The Liontown Project is related to and of a similar style of mineralisation to the Thalanga Deposit (West 45 and Far West) and it is appropriate to apply similar recoveries. The Metallurgical Recovery for each metal is shown below in Table 1.

Metal Prices and Foreign Exchange assumptions are set as per internal Red River price forecasts and are shown below in Table 1.

Table 1 Metallurgical Recoveries and Metal Prices

Metal	Metallurgical Recoveries	Price
Copper	80%	US$3.00/lb
Lead	70%	US$0.90/lb
Zinc	88%	US$1.00/lb
Gold	65%	US$1,200/oz
Silver	65%	US$17.00/oz
FX Rate: A$0.85:US$1		

Payable Metal Factors are calculated for each metal and make allowance for concentrate treatment charges, transport losses, refining charges, metal payment terms and logistic costs. It is the view of Red River that three separate saleable base metal concentrates will be produced from the Liontown Project. Payable metal factors are detailed below in Table 2.

Table 2 Payable Metal Factors

Metal	Payable Metal Factor
Copper	Copper concentrate treatment charges, copper metal refining charges copper metal payment terms (in copper concentrate), logistic costs and net smelter return royalties
Lead	Lead concentrate treatment charges, lead metal payment terms (in lead concentrate), logistic costs and net smelter return royalties
Zinc	Zinc concentrate treatment charges, zinc metal payment terms (in zinc concentrate), logistic costs and net smelter return royalties
Gold	Gold metal payment terms (in copper and lead concentrates), gold refining charges and net smelter return royalties
Silver	Silver metal payment terms (in copper, lead and zinc concentrates), silver refining charges and net smelter return royalties

The zinc equivalent grade is calculated as per the following formula:

Zn Eq. = (Zn%*1.0) + (Cu%*3.3) + (Pb%*0.9) + (Au ppm*2.0) + (Ag ppm*0.025)

The following metal equivalent factors used in the zinc equivalent grade calculation has been derived from metal price x Metallurgical Recovery x Payable Metal Factor and have then been adjusted relative to zinc (where zinc metal equivalent factor = 1).

Table 3 Metal Equivalent Factors

Metal	Copper	Lead	Zinc	Gold	Silver
Metal Equivalent Factor	3.3	0.9	1.0	2.0	0.025

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Sampling techniques</td><td>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.
Include reference to measures taken to ensure sample retrospectivity and the appropriate calibration of any measurement tools or systems used.
Aspects of the determination of mineralisation that are Material to the Public Report.
In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</td><td>Diamond drilling (DD) and Reverse circulation (RC) techniques were used to obtain samples during eight major programs of drilling carried out between 1970 and 2019.
<table>
<tr><th>Program</th><th>Year</th><th>Drilling Method</th></tr>
<tr><td>Nickel Mines</td><td>1970 - 1973</td><td>Diamond Drilling</td></tr>
<tr><td>Esso</td><td>1982 -1983</td><td>Diamond Drilling</td></tr>
<tr><td>Great Mines Limited</td><td>1987</td><td>Reverse Circulation</td></tr>
<tr><td>Pancontinental</td><td>1994</td><td>Diamond Drilling</td></tr>
<tr><td>Pancontinental</td><td>1994 - 1996</td><td>Reverse Circulation</td></tr>
<tr><td>Liontown Resources</td><td>2007 - 2008</td><td>Diamond Drilling</td></tr>
<tr><td>Red River Resources</td><td>2018</td><td>Diamond Drilling</td></tr>
<tr><td>Red River Resources</td><td>2019</td><td>Diamond Drilling</td></tr>
</table>
Hole count and metre count of samples intersecting the mineralised domains is shown below for each respective drill program:
<table>
<tr><th>Program</th><th>Hole Count</th><th>Metre Count</th></tr>
<tr><td>Nickel Mines</td><td>50</td><td>711.48</td></tr>
<tr><td>Esso</td><td>25</td><td>274.46</td></tr>
<tr><td>Great Mines Limited</td><td>43</td><td>623</td></tr>
<tr><td>Pancontinental</td><td>8</td><td>100</td></tr>
<tr><td>Pancontinental</td><td>26</td><td>341</td></tr>
<tr><td>Liontown Resources</td><td>35</td><td>268.87</td></tr>
<tr><td>Red River Resources</td><td>20</td><td>75.98</td></tr>
<tr><td>Red River Resources</td><td>34</td><td>987.42</td></tr>
</table>
Various industry standard preparation and analysis methods were used. Most samples were analysed following a three or four acid digest by either via Atomic Absorption Spectrum (AAS) or Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) for the base metal analysis. For gold analysis a fire assay method using either 25g, 30g or 50g charge with an AAS finish was used.
For the 2019 Red River Resources drilling program the following apply:
Sample intervals were selected by company geologists based on visual mineralisation and geological boundaries with an ideal sample length of one metre.
Samples were sawn if half or quarter onsite using an automatic core saw.
Independent certified assay laboratories were used for analysis.
Recent sampling was analysed at Intertek Genalysis Laboratory in Townsville where samples were crushed to sub 6mm, split and pulverised to sub 75µm and a sub sample collected for a four-acid digest and Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) analysis of the following elements; Ag, As, Ba, Bi, Ca, Cu,</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
		Fe, K, Mg, Mn, Na, Pb, S, Sb, Ti, Zn, & Zr. Samples were assayed for Au using a 30g Fire Assay technique.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	Conventional and wireline diamond drilling techniques were used through the various programs. Recent (2007 – 2019) core sizes are NQ and HQ with selected holes orientated. Reverse circulation holes were between 4 ¼ and 5 ½ inch sizes.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	Core loss was recorded by company geologists. Records available for the 2019 diamond program indicate that recovery within the sulphide ore zones was 98%. Similar results were achieved from the 2018 and 2007 drill programs. Partial core loss occurs within shear zones. Core loss in the oxide mineralised domains was significant with a recovery of 70% achieved. This recovery generates uncertainty for the estimated Oxide resource.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.	Holes were logged to a level of detail that would support mineral resource estimation. Qualitative logging includes lithology, alteration and textures. Quantitative logging includes sulphide and gangue mineral percentages. All drill core from 2007 onwards was photographed. Drill holes were logged in full.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling. Whether sample sizes are appropriate to the grain size of the material being sampled.	Reverse circulation samples were split onsite and sent for assay. Diamond core was placed in core trays for logging and sampling. Diamond core was cut in half for the majority of programs using a core saw. Sample intervals were either nonselective or sampled to geological boundaries. The non-selective nature of the Esso diamond drill program and the RC sample programs produces a degree of smoothing to this data. 97.5% of sample length is within 0.3 and 2m in length. Sample programs containing higher proportion of shorter length sample intervals display greater analyte variance. The sample sizes are considered to be sufficient to correctly represent the mineralisation style. Sample methods specific to each program is shown below:

Criteria	JORC Code explanation	Commentary
		(table below)

Program	Sample Type
Nickel Mines	Half Core (hand split) - sampled to contacts - predominantly 1ft or 5ft samples
Esso	Half Core (core saw) - non selective samples - predominantly 1m
Great Mines Limited	RC Split - non selective 1m samples
Pancontinental	Half Core (core saw) - selective samples - predominantly 1m
Pancontinental	4 1/4 to 5 1/2 inch RC Split - non selective 1m samples (few 3m)
Liontown Resources	1/2 NQ core (core saw) - sampled to contacts - predominantly 1m
Red River Resources	1/2 NQ2 core (core saw) - sampled to contacts - predominantly 0.5-1m
Red River Resources	1/2 NQ2, 1/2 HQ3 and 1/4 HQ3 core (core saw) - sampled to contacts - predominantly 0.5-1m

Criteria	JORC Code explanation	Commentary
		Records for sample preparation and analysis for programs pre 2007 are limited. In general samples were crushed to sub 6mm, split and pulverised to sub 75µm in order to produce a representative sub-sample for analysis. Most samples were analysed following a three or four acid digest by either via Atomic Absorption Spectrum (AAS) or Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) for the base metal analysis. For gold analysis a fire assay method using either a 25g, 30g or 50g charge with an AAS finish was used. Analysis of all Red River samples consisted of a four-acid digest and Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) for the following elements; Ag, As, Ba, Bi, Ca, Cu, Fe, K, Mg, Mn, Na, Pb, S, Sb, Ti, Zn, & Zr was undertaken. A selection of samples was also assayed for Au using a 25g Fire Assay technique.
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks)	The assay methods employed are considered appropriate for near total digestion. Various degrees of Quality Assurance and Quality Control processes were implemented through the different drilling programs. Records post 2007 are available. Red River Resources protocol involves the use of Blanks, and Standard Reference Material inserted at a rate of 1 in 20. Certified standards returned results within an acceptable range. No field duplicates are submitted for diamond core.

Criteria	JORC Code explanation	Commentary
	and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.	Laboratory results have been reviewed by Company geologists and laboratory technicians. A series twin holes was carried out by Esso on original Nickel Mines holes. Red River holes also twin previous drilling. In these twinned holes the replication of mineralised width and grade are reasonable. Scans off or original logging sheets for the majority of drill programs are available. Au and Ag results for Nickel Mines holes were excluded from the Resource estimation. These were originally identified by Esso as likely erroneous, and similarly considered by all following parties.
Location of data points	Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. Specification of the grid system used. Quality and adequacy of topographic control.	All Red River collars were surveyed with RTKGPS a pickup of available historic collars was also carried out. A re-survey of 105 historic drill collars was carried out by Liontown Resources Limited in 2007. Recent down hole surveys conducted with digital magnetic multi-shot camera at 20-40m intervals. Historic drill hole surveys were taken using Eastman single shot cameras. Coordinate system used is MGA94 Zone 55. Topographic control is based on a detailed 3D Digital Elevation Model. A 10-20m sterilisation zone was generated around the digitised workings of the historic Carrington Mine. The digitised workings were generated from historic level plans and survey pick up of surface shaft locations.
Data spacing and distribution	Data spacing for reporting of Exploration Results. Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. Whether sample compositing has been applied.	The distribution of drilling provides drill intersection spacings of: 10 - 40m for majority of New Queen Lode 20 - 70m for the Main Lens upper sections 60 - 100m for the Inferred area of the Main Lode 15 - 70m for the Western Footwall Lode 15 - 150m for the Gap Lode The drill spacing provides evidence of mineralized zone continuity for the purposes of resource estimation. Compositing of within mineralised domains of raw assay data to approximate 1m intervals was completed in preparation for the resource estimation process.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Where possible holes were orientated to ensure drill intersections were approximately perpendicular to the strike of the ore lenses and overall geological sequence. Dip intersections to the plane of mineralisation generally occur between 45° and 80°. The orientation of the multiple lenses varies resulting in some intersections being less than perpendicular. Some holes were drilled approximately down dip for comprehensive investigation of the ore zones.

Criteria	JORC Code explanation	Commentary
		The effect of local sampling biases due to orientation and spacing of drill holes is mitigated in the estimation process.
Sample security	The measures taken to ensure sample security.	During recent programs samples have been overseen by company staff during transport from site to Laboratories. Sample security for earlier programs cannot be validated. Given the primarily base metal nature of the deposit sample security is not considered as a significant risk.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Data review for resource estimation was completed by Mining One Consultants was completed in November 2015. A due diligence review of the resource estimation was also completed by Mining One Consultants was completed in November 2013. A review of the assay data was completed by McDonald Speijers Consultants in 2008. Earlier data reviews were carried out and documented by the various previous owners of the project.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	**Commentary**
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The Resource is within Mining Lease 10277 and extends into Exploration Permit EPM 14161. ML 10277 and EPM 14161 are held by Cromarty Pty Ltd. (a wholly owned subsidiary of Red River Resources) and forms part of Red River's Thalanga Zinc Project. Red River engaged Native Title Claimants, the Gudjalla People to conduct cultural clearances of drill pads and access tracks. The Exploration Permits are in good standing. 1.5% NSR is payable to FTI Consulting in addition to the standard Queensland government royalty.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Exploration activities have been carried out by Nickel Mines (1970-1973), Esso (1982-1983), Great Mines (1987), Pancontinental (1994-1995) and Liontown Resources (2007). Work programs included surface mapping and sampling, costeans, drilling and geophysics.
Geology	Deposit type, geological setting and style of mineralisation.	The Liontown and New Queen deposit is of Volcanic Hosted Massive Sulphide (VHMS) base metal mineralisation. The Carrington Au lodes are considered to be a later orogenic Au. The regional geological setting is the Mt Windsor Volcanic Sub-province, consisting of Cambro-Ordovician marine volcanic and volcano-sedimentary sequences.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes, including, easting and northing, elevation or RL, dip and azimuth, down hole length, interception depth and hole length. If the exclusion of this information is justified the Competent Person should clearly explain why this is the case.	This resource estimate is an update of the Red River Resources 2015 Mineral Resource for Liontown published on the ASX in June 2015. Recent exploration drill results have been published in Red River Resources' ASX releases. The estimation of potentially economic material based on 7 major drilling programs by 6 companies over a period spanning 40 years. Drill intersections from 241 drill holes were used in the estimation 54 of which were drilled by Red River Resources.
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not applicable as exploration results are not being reported. See Section 3 – Estimation and Modelling Techniques and cut off parameters for the treatment of sample intervals and cut off procedures. The Zinc Equivalent formula is outlined in the main section of this press release.

Criteria	JORC Code explanation	**Commentary**
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	The mineralisation is interpreted to be dipping at approximately 65 to 90 degrees to the south. A variety of drill hole angles have been drilled with the majority intercepting the strike of mineralisation perpendicular and the plane of mineralisation at angles between 90 and 45 degrees. True widths of intercepts are likely to be between 30 to 80% of the down hole widths. Lode mineralisation widths are generally between 1 and 8m true width. Sample lengths are most commonly 1m of downhole length.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plans and sections.	Refer to plans and sections within report.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	The accompanying document is considered to represent a balanced report. Refer to the plans, section, grade/ tonnes curve for the spatial distribution of the Mineral Resource.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported.	All meaningful and material data has been reported.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	Further drilling at Liontown will occur. Conversion of Inferred to Indicated and Measured Resources will occur. Mineral Reserve optimisation and estimation and Metallurgical studies are ongoing.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used.	The survey, sampling and logging data was electronically imported into the resource database. Checks were made of the original lab sample sheets and the database to ensure that transcription errors were not present. A visual check was made of the drill traces, assay and logging data in the 3D environment of Datamine to verify that results correlated between drill holes and corroborated the geological interpretation and expected mineralization continuity. Checks on downhole surveys were performed. Exclusion of Au and Ag assays from the first drill program by Nickel Mines was carried out due to uncertainty of their recorded values. Three other drill holes were excluded from the resource estimate due to suspect location and/or assay records.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case.	The Competent Person has visited the Liontown project site and inspected drill core and reviewed geological procedures at the Thalanga Core Processing facility.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology.	The confidence in the overall geological interpretation is high. Liontown exhibits a similar geological setting and mineralization style as other well-known deposits in the Thalanga project area. An overprint of late Au mineralisation, historically mined in the Carrington Mine Workings, is at times included in the polymetallic Resource. Recent data supports previous interpretations of the deposit. Little recent data has been collected in the Oxide domain and the Western Footwall domain of the Resource, and as such a lower confidence in the interpretation of these areas exists. In parts of the Resource shearing and faulting is present and although good continuity of mineralisation exists at drill hole spacing scale local small-scale discontinuities in the mineralisation is likely.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The deposit has a complex geometry. An East-West striking, and moderately (60°) south dipping sequence occurs. The Main lode consists of 3 stacked narrow lenses (domains 104 105 and 102) hosted within sediments, above and conformable to a Sediment to Pumice Breccia contact. Below the Sediment to Pumice Breccia contact within the Pumice Breccia occurs the New Queen domains. The New Queen area contains a broad lower grade domain (201) with an internal narrow massive high-grade lode (204). In the footwall of these lodes are lesser almost pod like lenses (203 and 205). And to the east along strike of is a lesser Lode (202).

		To the west along strike of the New Queen area occurs the Cu dominant Western Footwall lode (407). Carrington Style Au, Au-Cu and Cu mineralisation (401 and 402) overlap the New Queen lodes near surface but display a near vertical dip. Extension of these lodes into the Gap area to the east through to the footwall of the Liontown East Resource are defined by the Gap domain 404. Individual lenses are between 100 and 500m strike, and 100 to 400m dip extent. The true thickness of mineralisation that makes up the majority of the Mineral Resource is between 1 and 8m. The weathering profile is shallow over the Pumice Breccia (New Queen and associated Lenses) but steepens in the south following the Pumice to Sediment contact. A singular Main lode Oxide Gold domain (112) is defined above the Main Lodes. Two Oxide Au domains 411 and 412 are defined over the Carrington and New Queen Lodes. The Western Footwall Lode and Gap Lode are domained as sulphide lodes with to oxide caps.

Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation). In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions behind modelling of selective mining units. Any assumptions about correlation between variables. Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping. The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The resource model was constructed using Studio RM software (version 1.3.41.2) by Datamine corporation Limited. Variography analysis was undertaken using Snowden Supervisor Software (version 8.8). Three-dimensional mineralised domain wireframes were constructed for the mineralised zones. The wireframes were developed using surface drilling, and mapping. Geological logging and strength of mineralisation was used to guide the wireframes developed. The Main Lens and New Queen lenses were developed to constrain Pb and Zn dominant mineralisation whereas the Gap and Western Footwall lenses were developed to constrain Cu and Au dominant mineralisation, as appropriate for the interoperated style of each lens. A 0.5 g/t cut off was used to constrain the Oxide Au mineralisation. These wireframe domains were used as hard boundaries to constrain the estimate. Sample intervals constrained within the mineralised domains were composited to lengths approximating 1m. To limit the effect of any anomalously high results top cuts were applied to the composited sample intervals following a review of sample distribution. Grade estimates using multiple expanding search ellipse passes were undertaken for Zn, Cu, Pb, Ag, Au, Fe and Ba using the top-cut and composited data. Limits of samples per hole were employed to control local bias. Interpolation of grades into the New Queen and Main lode domains was undertaken by ordinary kriging using variogram models derived from the top-cut and composited sample data. Interpolation of grades into the Western Footwall, Gap and Oxide domains was undertaken by inverse distance squared methods. Extrapolation of data is constrained by the mineralised domain to generally 10-40m. The estimation process was validated using various methods including comparison of block grades with the average composite grades, visual checks comparing block grades with raw assay data and volume checks of the ore domain wireframe vs the block model volume. Comparison with inverse distance estimates was undertaken. The validation steps taken indicate that the block estimates are a realistic representation of the source assay data and that the block model volumes are valid in comparison to the modelled interpretation.

Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	The resource tonnages have been estimated on a dry basis
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	A cut – off using 5% Zn Eq has been used to report resources. This was chosen as the lower limit of potentially economically extractable material within an underground mining operation in this style of deposit. It is inline with other resources reported by RVR within the Thalanga district. A cut – off using 1 g/t Au has been used to report the Oxide Au Mineral Resource. This is considered appropriate due to the location of the Oxide as overburden to the sulphide Mineral Resource which has some likelihood of an being economically viable open cut operation.

Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	The anticipated Liontown mining method for extraction of the majority of the Mineral Resource is via underground long hole stoping techniques on 20m level spacing. Potential for an initial Open cut, mining the Oxide Au and shallow parts of the sulphide Resource to a limited depth exists. The tonnes and grades of the material outside the mineralised domains has not been estimated. The minimum mining width is approximately 2m. The mining process would involve level development at which time, geological mapping, face sampling and sludge (underground percussion) drilling would be required. This data would be used to refine the mineralised domains and to create a grade control model from which final stope designs could be generated. It is anticipated that mined material would be transported to the Thalanga mill for processing.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	It is anticipated that the mined material would be processed at the Thalanga processing facility via crushing and flotation, and the production of separate Zn, Pb and Cu concentrates. Au and Ag is recovered within the concentrates as payable elements. Production has shown that a saleable concentrate can be produced from the Thalanga style ores. Metallurgical Recoveries are derived from test work on Liontown samples and the known metallurgical recoveries of the Thalanga ores. Processing of the Oxide Au would require a gravity and leaching. Currently this process path is not available at the Thalanga processing facility. Options include upgrades at Thalanga, mobile plants or sale of ore to third parties for processing.

		Further metallurgical work for the successful processing of the Oxide would be required. Transitional material located between the oxide and fresh sulphide is not considered a Mineral Resource due to its limited size and poor response to processing.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	The tailings produced during the creation of the concentrate would be disposed of at the currently permitted Thalanga tailings facility. Waste rock from the mine will require waste dump locations. Government approvals are being sought to commence mining at Liontown.

Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	The bulk densities of samples representative of the ore and waste rock types were measured using the Archimedes method, that is (Dry Weight / (Dry Weight – Wet Weight). The sample Zn, Pb, Cu, Ba, Fe composition determined by laboratory analysis was used to validate the correlation between a stoichiometric formula the measured densities. Sulphide Resource blocks within the model were assigned densities by applying the stoichiometric formula to their estimated grades. Oxide Resource clocks were allocated a density of 2.3 as supported by limited sampling.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit.	The resources have been classified according to the sample spacing and confidence in the modelled continuity of both the thickness and grade of the mineralized. Indicated and Inferred blocks have been reported. The resource classification is deemed appropriate in relation to the drill spacing and geological continuity of the mineralized domains. The classification appropriately reflects the Competent Persons confidence of the estimate of the ore body.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	The Mineral Resource is an updated Resource, previously estimated by various parties. Recently collected additional data has been incorporated into the estimate, which has increased the area of definition and Resource size and refined the accuracy of the estimate. New data has not changed the fundamentals of the interpretation. No additional recent reviews or audits have been carried out.

Criteria	▪ JORC Code explanation	▪ Commentary
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The global resource estimate is deemed to be an accurate reflection of both the geological interpretation and tenure of mineralization within the deposit to the levels of accuracy implied by the Mineral Resource classifications used. In relation to the Thalanga VHMS style mineralisation, and the modelling methods applied at Liontown, the spatial accuracy of volume/tonnage estimates, in any specific area, is most dependent on; data spacing, mineralised zone true thickness and mineralised zone demonstrated continuity. The accuracy, in any specific area, of grade estimates is most dependent on; data spacing, treatment of data (i.e. top cutting and compositing), estimation method, and natural grade variability.