

# High-grade visible gold in quartz reef at Big River South

Siren Gold Limited (ASX: SNG) (Siren or the Company) is pleased to announce and update on the Big River South Gold Project in New Zealand.



## Highlights

- Soil geochemistry has identified a large **untested 3km long gold anomaly at Big River South** extending from the Big River mine area.
- Recent rock chip sampling at Big River South **confirms high grade gold** mineralisation with **visible gold** evident at the St George target.
- Sampling of the quartz reef in Level 1 of the historic St George mine, returned **grades up to 144.0g/t Au**, with an **average grade of 30.7g/t Au**.
- Historically a 1m thick reef was mined to 30m below the surface with an **average grade of 72g/t Au**.
- The Big River South area has had minimal modern exploration to date with the **Big River South reefs extending over 3km** and remains **largely untested**.

Managing Director Brian Rodan commented: *“These results confirm the high-grade gold mineralisation evident at Big River continues along the quartz reef approximately 3km south. It is a high priority target for future drilling and Siren see enormous potential to expand on the current Resource base of 100,000 oz at the Big River project area.”*

## Background

The Big River project (comprised of Exploration Permit 60448) is located ~15 kms SE of Reefton (Figure 5). The project overlays the areas of the historic Big River Mine that produced ~136,000 oz of gold at an average recovered grade of 34g/t between 1880 and 1942.

The Big River gold project consists of 6 identified gold mineralised shoots across more than 500m of strike, with potential to discover additional high-grade shoots. Siren has previously announced (refer ASX Announcement of 24 April 2023) a Maiden Inferred resource of 105koz at 3.94g/t Au defined from 2 of these 6 shoots (A2 Shoot and Shoot 4) within Siren’s Global Mineral Resource Estimate of 1.2Moz @ 3.1g/t Au (Table 2).

The Big River deposit remains open in all directions, with significant potential for increased gold resources from additional exploration drilling.

Soil geochemistry has been completed for over 6kms, from Big River North to around 2kms south of St George. The gold soil geochemistry shows large anomalies at Big River mine and a 3km long anomaly from Golden Hill to south of St George (Figure 1). The results clearly show that the gold anomaly continues strongly to the south until it is cut off by younger granite and extends into a broad zone south of St George into an area that has not been historically mined.

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### Corporate

**Brian Rodan**  
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**Paul Angus**  
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**Keith Murray**  
Non-Executive Director  
**Sebastian Andre**  
Company Secretary

### Project

Sams Creek Project  
Reefton Project

### Capital Structure

Shares: 134,258,807  
Options: 9,293,262

St George is located 1.6kms south of the Big River mine and 4kms east of the historic Blackwater mine (Figure 2) that produced 740koz at an average grade of 14.2g/t Au from the Birthday Reef<sup>2</sup>. The Blackwater mine closed in 1951 when the shaft collapsed, and the mine flooded. Federation Mining Limited have developed a 3.2km decline to intercept the Birthday Reef 750m below the surface, where the Blackwater mine ended in 1951. Federation plan to extract an additional 700koz of gold down to approximately 1,500m below the surface with first production forecast for late 2024<sup>3</sup>.

. Resource drilling from underground is currently in progress.

The Big River South area comprises the Golden Hill, Big River South and St George historic mine areas.

In the historic Golden Hill claim a 0.6m to 2m wide reef was found in the late 1800's. The quartz reef was traced in a series of trenches over a strike length of 900m. A 55m long drive was developed on the northern section of the reef that averaged 0.5m thick and 39 tons were mined and crushed for an average grade of 7g/t Au. This was considered sub-economic at the time and no further exploration was completed.

Big River South was discovered in 1908 when a 45m long reef 1.5m wide with visible gold was estimated grade between 23 and 32 g/t Au, with similarities to the nearby Blackwater Reef. Good reef was intersected in exploration drives which pinched and swelled. On one level a 100m long gold reef was found but no further work was done to prove its extent or worth and the Reefton South claim was never worked after 1925.

St George, just to the south of Big River South, was found after several gold bearing outcrops were found in the 1890's. An early 30m drive was completed on a 1m reef containing quartz and black pug with very encouraging results, with 30 tons recovered returning 70 ounces of gold (72 g/t Au). Three further reefs were discovered where 16 tons were won recovering 37 ounces of gold (72 g/t Au). The reefs were found to pinch and swell and again development was hampered by lack of funding. The claim was abandoned until 1910 when an ambitious plan was to drive a low-level tunnel from Snowy River. In 1910 a 571m long tunnel was driven north from the Snowy River. Several small gold reefs or quartz boulders were intersected along the drive, but none were developed. The war in 1914 stopped any further exploration.

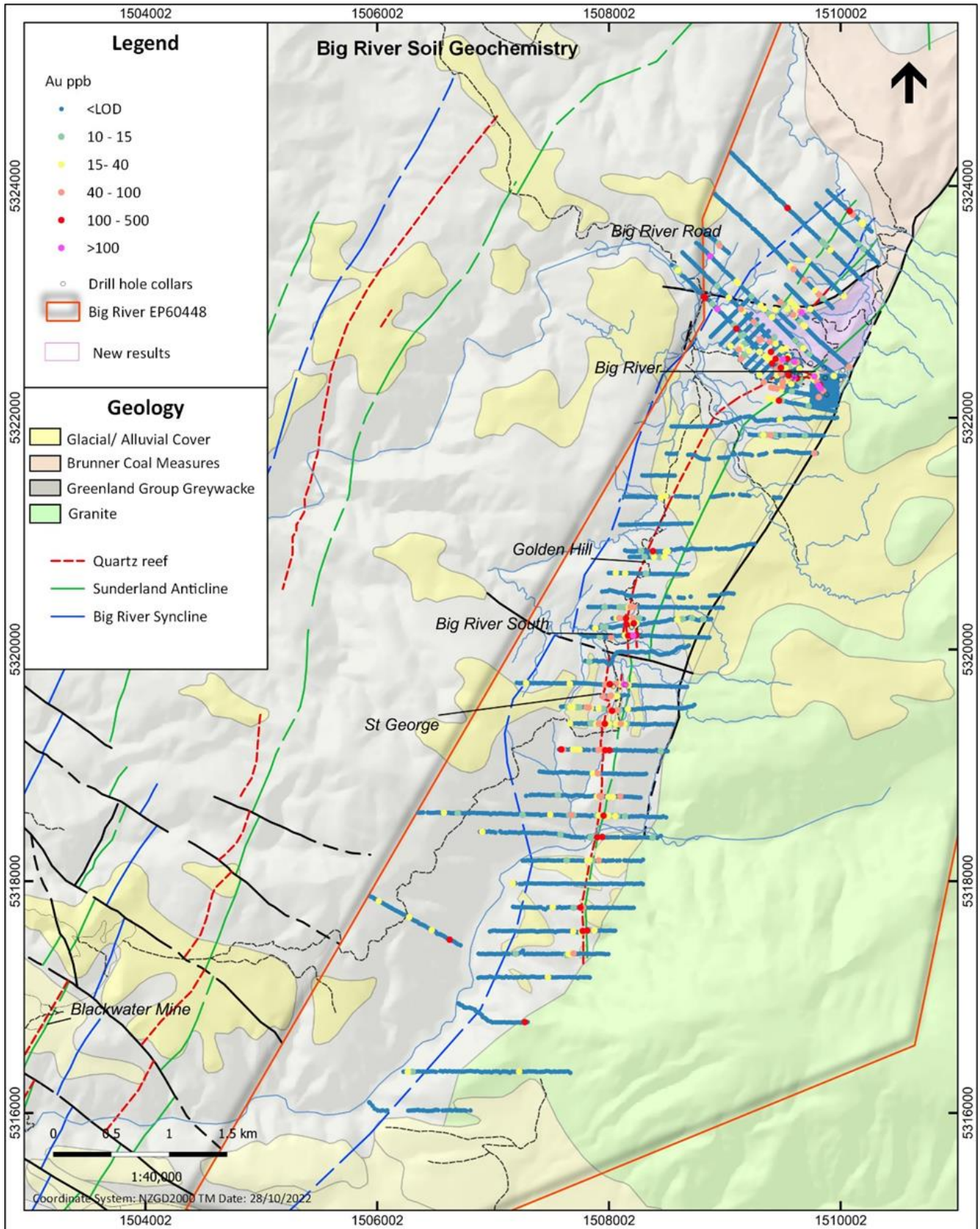


Figure 1. Big River gold soil geochemistry.

## Recent Exploration

The St George No. 1 level tunnel was driven in on a 1m wide quartz reef that produced 70oz gold from 30 tonnes (72g/t Au) in the first crushing in late 1892<sup>1</sup>. The Level 1 adit is open from the entrance to a crosscut at 65m. The quartz reef is visible in the tunnel roof and wall from 25m, and Siren sampled the exposed vein for a further 36m from this point (Figure 3 and Table 1). The quartz vein is generally dipping steeply to the east and west. Quartz in the roof and wall of the adit is variable, showing bucky white quartz veins with arsenopyrite rich stylolites and fine **visible gold** (Figure 4). Total sampling length along the adit was 36m as 1m rock chips along the exposed quartz vein. **The gold grade of the reef ranges from 0.6g/t Au to 144.0g/t Au, with an average of 30.7g/t Au** (Table 1).

The St George No.2 level tunnel, driven in at creek level, followed the same strike as the No.1 level adit and has collapsed. The crushing and gold recovery figures for this drive are unknown, however, the second crushing in the St George claim overall produced 37oz gold from 16 tonnes (72g/t Au).

The only drilling to date was completed by OceanaGold Limited (OGL) in 2012. Diamond holes BRS0001 and BRS0002 were drilled very close to the projected outcrop of the St George reef, with BRS002 intersecting 6m @ 0.85g/t from 3m including 1m @ 1.26 and 1m @ 2.89g/t Au (Figure 2). The very limited drilling to date (3 diamond holes) has not tested the St George reef to any meaningful extent.

The St George quartz reef has a similar grade and thickness to the historic Blackwater mine located 4kms to the SW (Figure 1). The Blackwater Reef has an average thickness of 0.7m at an estimated in situ grade of approximately 23g/t Au<sup>2</sup>. The Blackwater Reef was mined along strike for over 800m and down to 700m below surface, producing 740koz at a recovered grade of 14.2g/t Au. Drilling by OGL shows that the reef extends for another 750m below the last mined level.

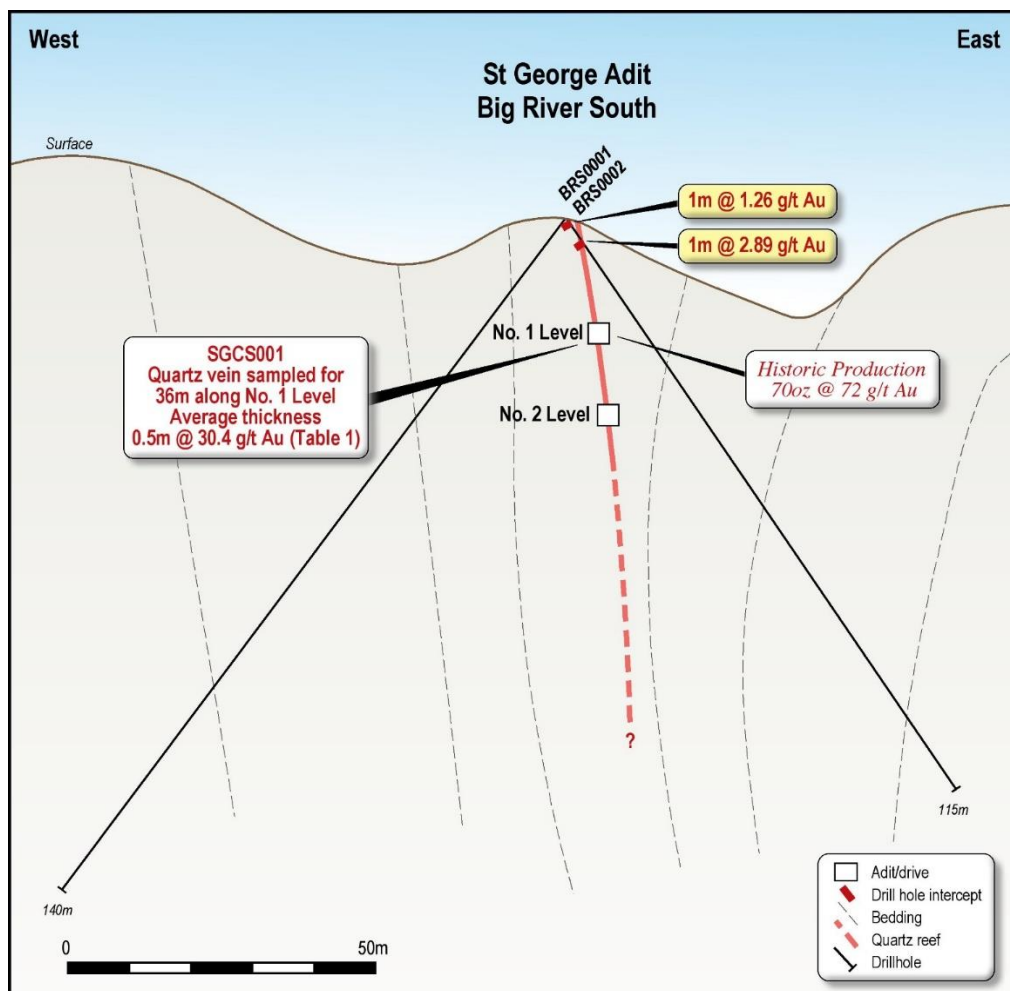
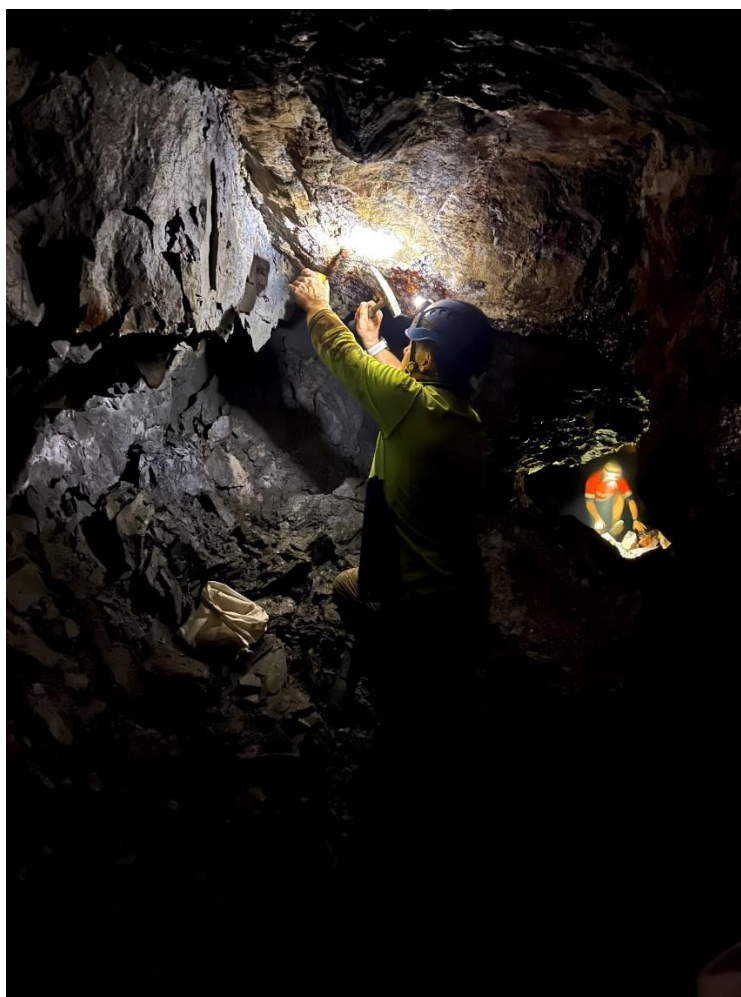
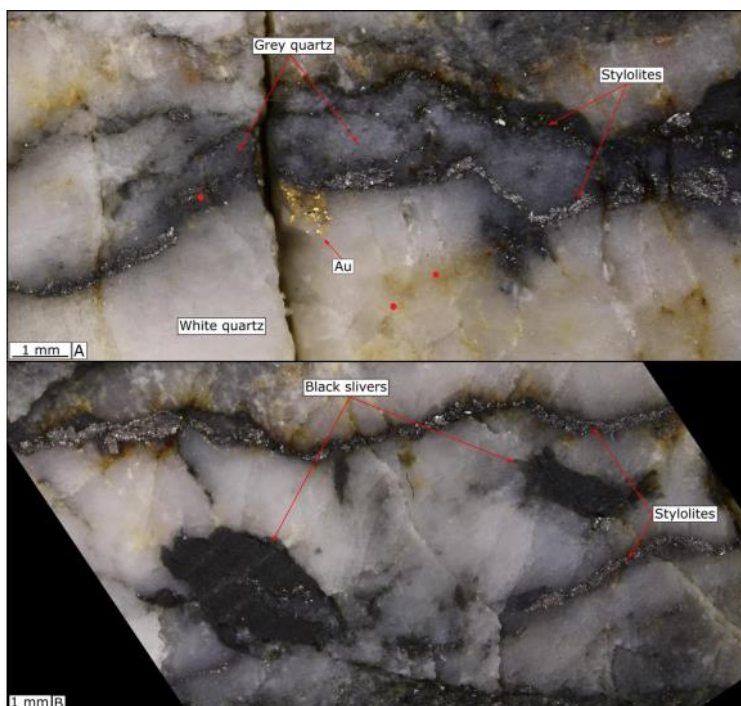


Figure 2. Cross Section through St George Mine.



**Figure 3. Sampling the quartz reef in St George Level 1 adit.**



**Figure 4. Quartz from St George Adit showing sulphitic stylolites within white quartz veins, comprising numerous grains of arsenopyrite. A large cluster of native gold is seen beside the lower stylolite (Shand 2015<sup>4</sup>)**

**Table 1. St George Level 1 sample results (SGCS001).**

From	To	Geological Description	Au g/t	As ppm
1.0	2.0	Puggy siltstone, QZ carbonate stockwork, abundant sulphides on margins.	0.16	845
2.0	3.0	Host and QZ breccia, QZ veins. Abundant pyrite (PY) with minor acicular arsenopyrite (AP).	<b>144.0</b>	<b>3,719</b>
3.0	4.0	Soft grey breccia, 20% QZ-carbonate clasts. Weathered sulphides within breccia/host rock.	6.14	2,374
4.0	5.0	Bucky QZ with limonitic fractures and stylolites. Soft fault sandstone, highly weathered wall rock.	<b>74.1</b>	<b>5,193</b>
5.0	6.0	Bucky stockwork QZ veins and patchy AP. Trace sulphides within QZ.	3.74	<b>4,366</b>
6.0	7.0	Bucky stockwork QZ veins and patchy AP. Trace sulphides within QZ.	<b>67.30</b>	<b>4,578</b>
7.0	8.0	Puggy siltstone. QZ with limonitic staining, tabular/acicular AP, trace stibnite.	<b>21.90</b>	<b>2,687</b>
8.0	9.0	Altered pale grey silica flooded siltstone with banded translucent white QZ.	<b>24.20</b>	<b>2,629</b>
9.0	10.0	Siliceous sandstone with disseminated AP and PY. Bucky to vitreous stockwork QZ	<b>11.00</b>	<b>5,491</b>
10.0	11.0	VISIBLE GOLD. 70% QZ. Silicified sandstone with acicular and tabular AP.	<b>55.00</b>	<b>4,523</b>
11.0	12.0	VISIBLE GOLD. 70% QZ. Silicified sandstone with acicular and tabular stained AP.	<b>25.50</b>	<b>4,825</b>
12.0	13.0	Soft/friable dark grey siltstone-sandstone. 10% Stringer QZ <10mm with limonitic staining.	<b>59.90</b>	<b>7,257</b>
13.0	14.0	Hard grey siltstone to sandstone. 10mm cream QZ vein with tabular AP.	<b>27.40</b>	2,415
14.0	15.0	95% QZ, buck white-translucent, minor limonitic staining.	<b>11.70</b>	<b>5,041</b>
15.0	16.0	95% QZ, buck white-translucent, minor limonitic staining.	2.80	<b>3,709</b>
16.0	17.0	Grey siltstone/sandstone. 5-15mm bucky QZ, minor limonitic staining.	<b>105.00</b>	832
17.0	18.0	Siltstone/sandstone with fine tabular AP. Cream and limonitic stained QZ.	1.00	<b>3,609</b>
18.0	19.0	Soft siltstone/sandstone. Very fine trace AP. Cream QZ, limonitic staining.	2.00	2,269
19.0	20.0	5% buck-white translucent QZ, minor limonitic staining. Soft friable siltstone.	2.10	1,945
20.0	21.0	Silicified sandstone with minor AP. 5% QZ buck white-translucent, minor limonitic staining.	2.30	989
21.0	22.0	5% buck white-translucent QZ with minor limonitic staining.	6.70	2,417
22.0	23.0	VISIBLE GOLD. 90% QZ with fine dark stylolites. Silicified sandstone with minor sulphides.	<b>127.00</b>	<b>3,089</b>
23.0	24.0	White-translucent QZ, limonitic staining. Acicular AP in host rock.	<b>46.70</b>	<b>3,515</b>
24.0	25.0	70% white-translucent QZ, limonitic staining, thin stylolites. Abundant AP in sst	<b>11.90</b>	<b>7,493</b>
25.0	26.0	60% white-translucent QZ, limonitic staining, thin stylolites. Abundant AP in sst.	0.73	2,555
26.0	27.0	80% white-translucent QZ, limonitic staining, thin stylolites. Abundant AP in sst.	1.29	<b>5,064</b>
27.0	28.0	Buck white QZ, limonitic fractures. Abundant AP on host rock margin, trace AP in stylolites.	<b>20.60</b>	<b>5,433</b>
28.0	29.0	Vitreous-bucky QZ, abundant stylolites, acicular AP.	<b>18.20</b>	<b>4,121</b>
29.0	30.0	QZ stockwork veining <10mm with abundant stained acicular AP and cubic PY.	<b>37.40</b>	<b>5,905</b>
30.0	31.0	Medium grey puggy fault breccia, very soft.	0.55	666
31.0	32.0	Pale grey silicious sandstone and siltstone, altered. Minor fine sulphides.	4.03	604
32.0	33.0	Fine sandstone with lesser fault gouge fine breccia.	0.10	149

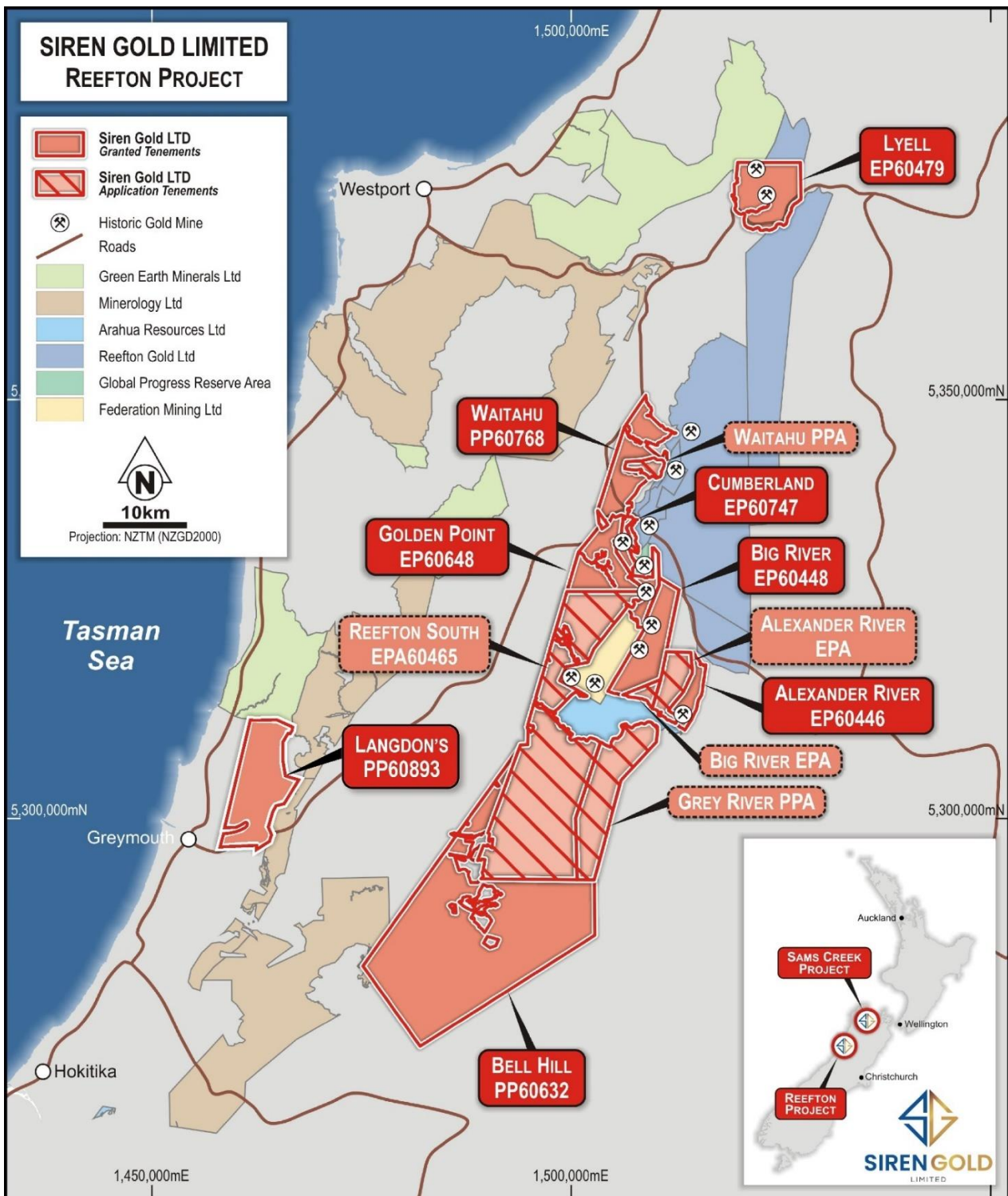


Figure 5. Reefton Tenement Map.

**Table 2. Siren's Global Mineral Resource (100% basis)**

Project	Status	Cut-off (g/t)	Tonnes (Mt)	Au (g/t)	Ounces (koz)
Sams Creek*	Indicated	1.5	3.29	2.80	295.6
<b>Total</b>	<b>Indicated</b>	<b>1.5</b>	<b>3.29</b>	<b>2.80</b>	<b>295.6</b>
Sams Creek*	Inferred	1.5	5.81	2.83	528.8
Alexander River*	Inferred	1.5	1.07	4.95	169.6
Big River*	Inferred	1.5	0.83	3.94	105.5
Supreme	Inferred	1.5	1.05	2.71	103.3
<b>Total</b>	<b>Inferred</b>	<b>1.5</b>	<b>8.76</b>	<b>3.18</b>	<b>907.2</b>
<b>Total</b>	<b>Indicated + Inferred</b>	<b>1.5</b>	<b>12.05</b>	<b>3.08</b>	<b>1,203</b>

Tonnages are dry metric tonnes and minor discrepancies may occur due to rounding.

<sup>1</sup> Les Wright 1993. Big River Quartz Mine 1882 -1942.

<sup>2</sup> Oceana Gold Limited, 2014. Preliminary Economic Assessment of the Blackwater Gold Project Reefton, Westland Province, New Zealand.

<sup>3</sup> Federation Mining limited. Developing High Grade Snowy River Gold Mine in New Zealand March 2023. Ord Minnett East Coast Mining Conference.

<sup>4</sup> Shand, F, 2015. Structural controls and paragenesis of the Big River South – St George Gold deposits, Reefton Goldfield. Submitted in partial fulfilment of the degree of Bachelor of Science, with Honours at the University of Otago, Dunedin, New Zealand.

This announcement has been authorised by the Board of Siren Gold Limited

## Enquiries

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## Competent Person Statement

The information in this announcement that relates to exploration results is based on, and fairly represents, information and supporting documentation prepared by Mr Paul Angus, a competent person who is a member of the Australasian Institute of Mining and Metallurgy. Mr Angus has a minimum of five years' experience which is 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 Joint Ore Reserves Committee Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Angus is a related party of the Company, being the Technical Director, and holds securities in the Company. Mr Angus has consented to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

## APPENDIX 1

The following Table and Sections are provided to ensure compliance with the JORC Code (2012 Edition)

### Section 1 - Sampling Techniques and Data

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

Criteria	Explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>- Soil samples were collected with a spade or auger. The C-zone was targeted with around 300gms collected. Samples were stored in waxed paper bags.</li> <li>- Ultrafine soil samples are collected by scraping off the A soil horizon and taking a 500gm sample of B-horizon. These samples are bagged in a paper bag and dried at 1000c for 12 hrs. The samples are then sent to LabWest in Perth for Ultrafine analysis. LabWest has developed the UltraFine+™ analysis process in conjunction with CSIRO since 2017. Analysis of the reactive 2-micron clay fraction, with microwave digestion and using the latest low detection level ICPMS technology. Ultrafine includes gold and 48 other elements.</li> <li>- Outcrop and underground channel samples were generally collected at 1m intervals across the structure to get a true thickness. Samples were collected with a geological hammer and stored in calico bags.</li> <li>- Diamond core (DC) was used to obtain samples for geological logging and sampling.</li> <li>- DC core samples were split in half using a core saw at 1m intervals unless determined by lithology i.e. Quartz vein contacts.</li> <li>- Channel samples were taken on 1m sample lengths with 1-2 kg sample size using a geological hammer.</li> <li>- Core and channel samples were pulverised to &gt;95% passing 75µm to produce a 30g charge for fire assay for Au.</li> <li>- Multi-element is now undertaken by pXRF on the returned Au pulps from SGS.</li> <li>- All core is rolled into plastic splits from the triple tube spilt at the drill rig and then placed into the core trays. This provides a far better quality of core with preservation of structures and broken core with less handling of the core.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li><i>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.).</i></li> </ul>	<ul style="list-style-type: none"> <li>- All DD drilling was helicopter supported except for BRDDH020 to 24 &amp; BRDDH030 -31 were drilling by a Marooka mounted CS1000 rig.</li> <li>- DD diameters included PQ (96mm) and HQ (63mm), using a triple tube. NQ was a mixture of NQ (47.6mm) and NQ3 (45.1mm). Most of the drilling was HQ with PQ collars generally limited to depths less than 50m.</li> <li>- Earlier OGL drilling was completed PQ and HQ sizes.</li> <li>- Both OGL and RRL's HQ and PQ core were orientated using Reflex orientation tools.</li> </ul>

Criteria	Explanation	Commentary
Drill sample recovery	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>- OGL and SGC sample recovery recorded full run and geotechnical logging with total core recoveries, RQD and core loss is recorded for each drill run.</li> <li>- Core occurs around old workings where there are voids.</li> <li>- Core recoveries for the program so far around 91 to 99%. Highly shattered rock around puggy fault gouge zones are the areas where core loss can occur. No noticeable basis has been observed thus far in the mineralisation.</li> <li>- No noticeable basis has been observed thus far in mineralisation.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>- All drilling has been logged for lithology, weathering, bedding, structure, alteration, mineralisation, and colour using a standard set of in-house logging codes that are similar to OGL. The logging method is quantitative.</li> <li>- OGL and RRL DD was oriented. Structural measurements were recorded during logging.</li> <li>- OGL relogged all the CRAE core.</li> <li>- RRL logging intervals are based on geological boundaries. OGL often logged on a metre-by-metre basis.</li> <li>- Mineralised zones were logged for type, alteration intensity, vein thickness, frequency, angle to long core axis, and mineralogy.</li> <li>- Summary geotechnical information was recorded.</li> <li>- All core trays were photographed prior to core being sampled.</li> <li>- All core is stored in core shed and containers on site in the core shed in Reefton, NZ.</li> <li>- Channel samples were logged on the same lithological categories as DC.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>- OGL &amp; RRL DD sample intervals were physically marked on the core, which was sawn in half lengthways with a diamond core-cutting saw. The core cutting plane was selected to be around 30° away from the orientation line unless dictated by the geologist. Where core was too broken to be cut, the broken core was split longways into two equal amounts from the core tray. The resulting half core was taken for the laboratory sample and the remaining core was archived.</li> <li>- Channel samples are chipping along 1m length into the sample bag.</li> <li>- The field duplicates, laboratory duplicates and laboratory repeats were collected and assayed with laboratory duplicates. Repeats were found acceptable in comparison with regular laboratory samples. No major issues identified.</li> <li>- SGC took field duplicates and are routinely submitted as half core. Field duplicates were originally DD quarter cuts. To ensure equal weight the results for the two quarter cuts were average for comparison with the routine sample.</li> <li>- Field duplicates of the channel samples have been taken in some mineralised sections.</li> <li>- The DD (2-3 kg) and channel (1-2 kg) sample sizes are considered appropriate to the grain and particle size for representative sampling.</li> <li>- Sample preparation of DC and Channel samples by SGS Laboratories in Westport comprises; drying, crushing, splitting (if required) and pulverising to obtain analytical sample of 250g with &gt;95% passing 75 µm where Au is assayed by 30g fire assay by SGS Waihi or Macraes.</li> </ul>

Criteria	Explanation	Commentary
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>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.</i></li> <li>• <i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>- Soil samples were sent to SGS in Waihi to be analysed by low detection gold.</li> <li>- DC and Channel samples are sent to SGS Macraes and Waihi, New Zealand. SGS laboratories carry a full QAQC program and are ISO 19011 certified.</li> <li>- OGL analysed Au by 30g or 50g fire assay by SGS Westport and Reefton or ALS Brisbane.</li> <li>- RRL analysed Au by 30g fire assay by SGS Waihi or Macraes.</li> <li>- RRL DC multielement are sent to SGS Townsville, Australia for IMS40Q which is ICP-MS analysis after DIG40Q four acid digest for a 48-element suite. Holes drilled after BR24 were analysed by pXRF for multielement.</li> <li>- OGL DC multielement were completed by ALS, Australia using ICP (ME-ICP61) for 33 elements. As and Sb was analysed by SGS, Westport using XRF.</li> <li>- For each DC drillhole the sampling includes: <ul style="list-style-type: none"> <li>- At least two Au certified Rocklab standards</li> <li>- Two blanks.</li> <li>- At least one field duplicate and laboratory duplicate per drill holes or taken every 25 samples.</li> <li>- Lab repeats are recorded.</li> </ul> </li> <li>- Standards, duplicates and blanks are checked after receiving the results. The QAQC results so far has been acceptable.</li> <li>- RRL has a full working pXRF protocol and QAQC procedures for operation of the pXRF for analysis of pulps and samples. PXRF standards and blanks for used as well duplicate data being taken every 25 samples.</li> <li>- OGL DC submitted first 2 samples were blanks, &gt;3 CRM's and &gt;3 lab duplicated per drillhole.</li> <li>- OGL and RRL Screen fire included at least one coarse blank and 1kg quartz flushes were requested after samples with visible gold.</li> </ul>

Criteria	Explanation	Commentary
Verification of sampling and assaying	<ul style="list-style-type: none"> <li><i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li><i>The use of twinned holes.</i></li> <li><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li><i>Discuss any adjustment to assay data</i></li> </ul>	<ul style="list-style-type: none"> <li>All laboratory assay results were received by RRL stored in both CSV and laboratory signed PDF lab certificates.</li> <li>Data is stored in excel, GIS, Dropbox and Leapfrog. The data storage system is basic but robust.</li> <li>A logging, sampling and pXRF and QAQC standard operating procedures are in place and working.</li> <li>No adjustments have occurred to the assay data.</li> </ul>
Location of data points	<p><i>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.</i></p> <ul style="list-style-type: none"> <li><i>Specification of the grid system used.</i></li> <li><i>Quality and adequacy of topographic control</i></li> </ul>	<ul style="list-style-type: none"> <li>The drillhole collar coordinate (X, Y, Z) are referenced to New Zealand Transverse Mercator 2000 (NZTM). All holes up to BRDDH045 have been picked up registered surveyor - Chris J Coll Surveying Ltd to 0.1m accuracy.</li> <li>A digital terrain model (DTM) was constructed based on LiDAR that was flown by NZ Aerial. All drill collars elevations were reconciled with the LiDAR.</li> <li>Downhole surveys are available for all drill holes and one abandoned hole BRDDH041.</li> <li>The correction used between magnetic north and true north (magnetic declination) was 23° East.</li> <li>OGI surveyed on average every 30m using a digital downhole tool unless asked by geologist.</li> <li>RRL surveyed on average of 15m until past 150-200m downhole where the surveys were increased to 30m. Surveys were taken using a Reflex tool.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li><i>Data spacing for reporting of Exploration Results.</i></li> <li><i>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.</i></li> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Drilling in the Big River has generally been completed on a 100 x 50m spacing with ranges between 30m to 150m.</li> <li>Drilling directions and distances in the Big River are variable because of the terrain, orientation of the target shears and shoots. Multiple drilling orientations have been fanned off single drill pads to make most of pad sites due to access agreement restrictions and the steep and challenging terrain.</li> <li>Sample compositing was to 1m which is the dominant sample length.</li> </ul>
Criteria	Explanation	Commentary
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Channel samples were taken across the mineralisation to sample as true thickness.</li> <li>Drilling design is planned to intercept the mineralisation at high angles but steeper angled drilling with drilling multiple holes from a single heli-drill pad does intercept the mineralisation at a lower angle.</li> <li>Oriented core and intact DC around mineralisation assists in understanding contacts, thickness and mineralisation orientation.</li> <li>This relationship between drillhole orientation and expected benefits has been taken into consideration during drill hole design and implementation.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>Drill samples were securely packaged on site and transported by RRL staff to SGS laboratory in Westport, New Zealand for crushing and sample preparation. Samples were stored in a locked coreshed until despatch.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>Entech and Measured Group have completed an audit as part of the 2022 Mineral Resource Estimation (MRE) of Alexander project. The results were satisfactory and any recommendations by the audits have been implemented.</li> </ul>

## Section 2 - Reporting of Exploration Results

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

Criteria	Explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Companies Reefton Goldfield tenements both granted (8), and applications (2) are shown in the map in Figure 1 in this announcement. All RRL tenements or applications are 100% owned by RRL. All the tenements are largely within the Department of Conservation (DoC) estate. Minimum Impact Activity (MIA) Access Agreements have been issued by DoC for Alexander River, Big River, Lyell, Golden Point, Auld Creek, and Cumberland. DoC Access Agreements (AA) that allow drilling, have been granted for Alexander River, Big River, Auld Creek, and Golden Point. RRL has lodged an AA application for Lyell.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>All exploration results in drill holes up to BR001 - BR019 and BRS001 - BRS007 were drilled by OGL between (2011-2012) and BRDD020 – BRDD045 by RRL (2020 to 2022).</li> <li>Before OGL, CRAE in the 1980's completed trenching and soil sampling programs.</li> <li>OGL completed wacker geochemistry sampling, structural mapping and drilling. Diamond drilling commenced at the Big River project in 2011 when OGL drilled diamond 19 holes for a total of 5,032.6m at Big River. OGL also drilled 7 diamond holes for a total of 926.2m.</li> </ul>
Geology	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>Big River area is mainly underlain by a basement sequence of monotonous, inter-bedded quartzose sandstone (greywacke) and shale (argillite) of the Ordovician Greenland. These rocks are weakly metamorphosed and variably deformed and are the primary host rock for gold mineralisation. Two-fold hinges have been mapped with a reasonable degree of confidence throughout the tenement and are thought to play a critical role in the distribution of mineralisation. In the southeast corner of the tenement, granitic igneous rocks correlated with the Cretaceous Separation Point Suite are juxtaposed against the Greenland Group rocks along a major northeast trending fault. In the north of the tenement, fault-bounded units of the Late-Cretaceous Hawks Crag Breccia lie to the east. Sandstone, quartzite mudstone and limestone sedimentary units of the Devonian Reefton Group are both faulted over, and lie unconformably over, Greenland rocks. The coal measures of the Tertiary Brunner Coal Measures, locally occur within the tenement area, overlying the Greenland Group basement. Younger (Quaternary) glacial and fluvio-glacial deposits are also locally preserved.</li> </ul>

Criteria	Explanation	Commentary
		<ul style="list-style-type: none"> <li>- The Ordovician Greenland Group hosts the Reefton Goldfield, which historically produced 2.1 Moz of gold. The largest producer, Blackwater Mine, extracted 730,000 oz gold and is located approximately 4 km east of the centre of the EP area. The Greenland Group also hosts the Globe Progress gold mine, which produced 610,000 oz before being placed into rehabilitation in 2016. Deformation due to east-west compression resulted in the formation of close to tight, upright, north-south trending fold axes with a single pervasive and penetrative steeply dipping, axial-planar cleavage (Rattenbury and Stewart, 1996). As deformation progressed, fold hinges were commonly sheared out by high angle reverse faults and bedding concordant quartz veins formed between discrete bedding planes. These discordant shear zones now host the bulk of the gold mineralisation in the Reefton Goldfield and are thought to have formed as a late stage, partially strike-slip, event at the culmination of the deformation. The mines in the Reefton Goldfield are in a zone known as the Reefton “mineralised corridor” which comprises several NNE-SSW trending anticlines and synclines. For example, the Birthday Reef in the Blackwater Mine is an axial planar structure to a syncline. Historic mining extended a short distance south of Snowy River, where the Greenland Group outcropped, but stopped at the contact with overlying gravel. The Reefton “mineralised corridor” structures are mapped southwards to the contact of the Greenland Group with overlying gravel on the south side of the Snowy River.</li> <li>- In general, two end members of mineralisation styles exist, which are possibly related to the structural setting outlined above. The Blackwater style is comprised of relatively undeformed quartz lodes; while the Globe-Progress style comprises highly deformed quartz and pug-breccia material.</li> <li>- Big River deposit is located in a hinge of upright gently northeast plunging anticline with mineralisation hosted on both limbs along mineralised shear zones in a Globe Progress style of mineralisation. Individual Quartz and PBX shoots are hosted within these mineralisation shears which consist of weaker mineralised brecciated &amp; shattered host rock &amp; fault and shear material. The hosting shears curve around the anticline and at least 2-3 main shear systems have been identified. The shoots on each side of the anticline limb plunge in different directions with respect to limb orientation. Shoot 4, on the eastern limb plunges steeply to the NE while A2 shear on the western limb plunges north. A2 also lies at interception of north-south mineralisation trend that’s extends from St George (~3km to the south) to northeast of Big River North (~1km). This interception zone is poorly understood. Big River deposit northern margin is overlain by the Devonian Reefton Group, to the east lies and area has been affected by later stage dykes and Granite emplacement.</li> </ul>

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:
- easting and northing of the drill hole collar
- elevation or RL (Reduced Level - elevation above sea level in metres) of the drill hole collar
- dip and azimuth of the hole
- down hole length and interception depth
- hole length.
- If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case

Channel_ID	NZTM_mE	NZTM_mN	RL	Length	Dip	Azimuth
SGCS001	1508048.80	5319740.00	663.00	36	0	175

HOLE_ID	NZTM_mE	NZTM_mN	RL	TD	Collar Dip	Collar Azimuth
BR0001	1509590.85	5322401.87	742.5	160.9	-57	199
BR0002	1509742.68	5322469.47	786.7	188.9	-52	207
BR0003	1509868.90	5322344.71	783.9	172.5	-61	301
BR0004	1509868.90	5322344.71	783.9	200.5	-55	215
BR0005	1509868.90	5322344.71	783.9	187.0	-59	246
BR0006	1509868.90	5322344.71	783.9	235.2	-55	194
BR0007	1509868.90	5322344.71	783.9	201.0	-70	209
BR0008	1509858.92	5322428.33	773.1	175.0	-56	245
BR0009	1509868.90	5322344.71	783.9	180.0	-77	250
BR0010	1509590.85	5322401.87	742.5	291.5	-54	167
BR0011	1509858.92	5322428.33	773.1	205.4	-50	265
BR0012	1509868.90	5322344.71	783.9	230.5	-80	201
BR0013	1510002.38	5322330.31	757.4	255.0	-50	281
BR0014	1510002.38	5322330.31	757.4	257.2	-54	240
BR0015	1509880.94	5322200.38	808.1	117.0	-60	289
BR0016	1509880.94	5322200.38	808.1	136.3	-55	235
BR0017	1509880.94	5322200.38	808.1	165.0	-72	244
BR0018	1510022.04	5322407.50	742.0	363.0	-63	268
BR0019	1510022.04	5322407.50	742.0	384.5	-71	281
BRS001	1508042.00	5319683.00	698.0	140.1	-55	263
BRS002	1508042.00	5319683.00	698.0	115.7	-54	88
BRS003	1508145.00	5319696.00	677.0	112.1	-53	269
BRS004	1508199.00	5320193.00	691.0	158.6	-54	285
BRS005	1508199.00	5320193.00	691.0	68.6	-50	100
BRS006	1508199.00	5320193.00	691.0	210.1	-52	317
BRS007	1508270.00	5320158.00	705.0	121.0	-50	270
BRDDH020	1509579.33	5322344.04	757.7	50.5	-60	290
BRDDH021	1509605.25	5322326.69	754.8	122.5	-60	280



		BRDDH022	1509587.41	5322373.24	759.7	68.3	-60	275	
		BRDDH023	1509628.50	5322370.54	762.8	82.5	-60	275	
		BRDDH024	1509657.80	5322376.20	764.5	113.2	-60	275	
		BRDDH025	1509867.00	5322345.45	785.3	148.5	-55	270	
		BRDDH026	1509868.20	5322344.88	785.4	135.1	-45	225	
		BRDDH027	1509868.89	5322345.16	784.8	163.0	-69	235	
		BRDDH028	1509868.08	5322343.78	785.3	151.4	-82	285	
		BRDDH029	1509867.23	5322345.46	785.4	281.2	-90	285	
		BRDDH030	1509658.30	5322376.60	764.6	83.0	-60	340	
		BRDDH031	1509659.10	5322375.10	764.5	87.9	-60	160	
		BRDDH032	1509743.15	5322470.64	787.3	257.3	-76	135	
		BRDDH033	1509743.60	5322469.41	787.4	146.3	-55	160	
		BRDDH034	1510031.36	5322407.91	730.0	407.4	-69	254	
		BRDDH035	1510032.46	5322407.97	730.0	444.6	-74	249	
		BRDDH036	1509739.82	5322468.95	787.5	230.5	-55	235	
		BRDDH037	1509740.35	5322469.64	787.5	302.7	-60	265	
		BRDDH038	1509740.10	5322469.72	787.6	248.2	-50	255	
		BRDDH039	1509740.06	5322469.50	787.5	338.5	-72	280	
		BRDDH040	1509740.47	5322470.56	787.3	314.7	-77	300	
		BRDDH041	1509740.00	5322469.69	787.5	15.0	-65	275	
		BRDDH041A	1509740.12	5322469.63	787.4	326.6	-65	275	
		BRDDH042	1509739.74	5322469.41	787.4	269.1	-51	260	
		BRDDH043	1509747.27	5322610.39	746.9	398.05	-79	230	
		BRDDH044	1510032.46	5322407.97	730.0	452.8	-83	270	
		BRDDH045	1510031.38	5322408.47	730.2	359.1	-61	242	
Data aggregation methods	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>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.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated</i></li> </ul>	<ul style="list-style-type: none"> <li>- Drilling results presented have used a weighted average when presenting drilling intercepts, hence, any potential sample length bias has been accounted for.</li> <li>- Grades are not cut in the database or presenting results.</li> </ul>							

Criteria	Explanation	Commentary
Relationship between mineralisation widths and intercept length	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> <ul style="list-style-type: none"> <li>• <i>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').</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- The true drillhole intercept thickness has estimated from sectional interpretation of the mineralised zone.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>• <i>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 plan view of drill hole collar locations and appropriate sectional views.</i></li> </ul>	<ul style="list-style-type: none"> <li>- Relevant diagrams have been included within the main body of the announcement.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>- N/A</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>• <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples - size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></li> </ul>	<ul style="list-style-type: none"> <li>- N/A</li> </ul>
Further work	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>- Additional rock chip sampling and trenching</li> <li>- Targeted diamond drilling.</li> </ul>