2024

TECHNICAL REPORT ON REEFTON PROJECT, NEW ZEALAND

Report for NI 43-101 on the Reefton Resources Pty Ltd Reefton Project, New Zealand

Report prepared for:	RUA GOLD INC PO Box South Bentall Centre BC, Vancouver V7X IT Canada
Report authors and Qualified Persons:	Sean Aldrich, MSc MAusIMM MAIG Abraham Whaanga, BSc MAusIMM (CP)
Effective Date:	30 October 2024

Date & Signature

Report issued by

RSC Consulting Ltd

245 Stuart Street, Dunedin 9016, New Zealand

Postal Address: PO Box 5647, Dunedin, 9054, New Zealand

Report prepared for

Client name	RUA GOLD INC
Project name	Reefton Project
Contact name	Robert Eckford
Contact title	CEO
Contact address	1055 West Georgia Street, Suite 1500, Vancouver BC, v6E 4N7, Canada

Report Information

File name	241030 RSC RUA NI 43-101 ITR
Effective date	30 October 2024
Report status	Final

Date & Signature

Contributing author (QP)	Signature	Date
Sean Aldrich, MSc MAusIMM MAIG	/Sean Aldrich/	30 October 2024
Abraham Whaanga, BSc MAusIMM (CP)	/Abraham Whaanga/	30 October 2024

Contents

List of Tables

List of Figures

Acronyms

°C	degrees Celsius
2D	two dimensional
3D	three dimensional
1VD	first vertical derivative
2VD	second vertical derivative
AA	access agreement
AAS	atomic absorption spectrometry
Ag	silver
AGC	automatic gain control
AI	artificial intelligence
AIG	Australian Institute of Geoscientists
As	arsenic
AS	analytic signal
ASTER	advanced spaceborne thermal emission and reflection radiometer
Au	gold
AUD	Australian dollars
AuEq	gold equivalent
AusIMM	Australasian Institute of Mining and Metallurgy
Auzex	Auzex Resources Pty Ltd
Bi	bismuth
BLEG	bulk leach extractable gold
BSc	Bachelor of Science
CAD	Canadian dollars
cm	centimetre
CMA	Crown Minerals Act 1991
CRAE	CRA Exploration Limited
CRM	certified reference material
CSV	comma-separated values
Cu	copper
CV	coefficient of variation
DD	diamond drilling
DOC	Department of Conservation
DQO	data quality objective
DSIR	Department of Scientific and Industrial Research
EOD	extension of duration
EP	exploration permit
FAA303	fire assay, AAS finish
FAM303	fire assay, ICP-MS finish
FAS30K	3-g charge, screen fire assay at 75 µm
Fe	iron
FLT	fault
g	gram
g/t	grams per tonne
GIS	Geographic Information System
GNSS	Global Navigation Satellite Systems
GPS	Global Positioning System
GRES	GR Engineering Services Limited
HBX	host breccia
HG	high-grade
HQ	core diameter: 63.5 mm
ICP40Q	4-acid digest, ICP-MS finish
ICP41Q	4-acid digest, ICP-MS finish
ICP-MS	inductively coupled plasma mass spectrometry
ICP-OES	inductively coupled plasma optical emission spectroscopy
IMS40Q	4-acid digest, ICP-MS finish
IP	induced polarisation
IRM	internal reference material
JORC	Joint Ore Reserves Committee
K	potassium
KCSZ	Krantz Creek Shear Zone
KE	kriging efficiency
kg	kilogram
kt	kilotonnes
km	kilometre
koz	kilo ounces
KNA	kriging neighbourhood analysis
L&M	Lime and Marble Limited
Landpro	Landpro Ltd
LiDAR	Light Detection and Ranging
LG	low-grade
LMUC	localised multivariate uniform conditioning
LOQ	limit of quantification
m	metres

Ma	million years
MAR	mineralised argillite
ME-MS23	sodium cyanide leach
MBIE	Ministry of Business, Innovation and Employment
Mg	magnesium
MGK	mineralised greywacke
MIA	minimum impact activities
min	minute
MIK	multiple indicator kriging
ml	millilitre
mm	millimetres
MMU	minimum mining unit
MMCL	Macraes Mining Co Ltd
Mo	molybdenum
MOU	memorandum of understanding
Moz	million ounces
MP	Member of Parliament
MPG	MPG Partnership
MRE	mineral resource estimate
MS	magnetic susceptibility
MSc	Master of Science
Mt	million tonnes
mV/V	millivolts per volt
NA	not available
NI 43-101	National Instrument 43-101
No.	number
NQ	core diameter: 47.6 mm
NS	not sufficient (data)
nT	nanotesla
NZ	New Zealand
NZD	New Zealand dollars
NZP&M	New Zealand Petroleum and Minerals
NZST	New Zealand Standard Time
NZTM	New Zealand Transverse Mercator
OGL	OceanaGold New Zealand Ltd
OK	ordinary kriging
oz	ounce
Pb	lead
PBX	pug breccia
PhD	Doctor of Philosophy
PGMs	platinum group metals
PP	prospecting permit
ppb	parts per billion
ppm	parts per million
PPS	pulse per second
PQ	core diameter: 85 mm
pXRF	portable X-ray fluorescence
py	pyrite
QA	quality assurance
QAT	quality acceptance testing
QBX	quartz breccia
QC	quality control
QGWK	quartz greywacke
QMAP	quarter million mapping
QP	Qualified Person
QQ	quantile-quantile
QSST	quartz sandstone
QTZ	quartz vein
POX	pressure oxidation
RBF	radial basis function
RD	relative difference
RGL	Reefton Goldfields Limited
RMA	Resource Management Act
RMSCV	root mean square coefficient of variation
RPEEE	reasonable prospects for eventual economic extraction
RRPL	Reefton Resources Pty Ltd
RSC	RSC Consulting Ltd
RTP	reduced to pole
RUA	Rua Gold Inc
Sb	antimony
SBX	Sb breccia
SEM	scanning electron microscope
SG	specify gravity
Sn	tin
SOP	standard operating procedure
SoR	slope of regression
SQL	structured query language
SumN	sum of negative weights

t	tonne
TEM	transient electromagnetic method
Th	thorium
tilt	tilt angle filter
TIR	thermal infrared
TL	tie Line
TMI	total magnetic intensity
tpd	tonnes per day
UAV	unmanned aerial vehicle
U	uranium
USD	United States dollar
UTC	Universal Time Coordinated
VHF	very high frequency
W	tungsten
X	latitude
XRT	X-ray transmission
Y	longitude
Z	elevation
Zn	zinc

1. Summary

In anticipation of the acquisition of Reefton Resources Pty Ltd (RRPL), which was wholly owned by Siren Gold Ltd (Siren), Rua Gold Inc (RUA) commissioned RSC Consulting Ltd (RSC) to prepare an independent technical report (the Report) in compliance with National Instrument 43-101: *Standards of Disclosure for Mineral Projects* (NI 43-101) and Form 43-101F1, in respect of the Reefton Project (the Project) in the Buller District of New Zealand. The Project comprises four prospecting permits (PPs) and seven exploration permits (EPs), all of which are held by RRPL, which is now a wholly owned New Zealand subsidiary of RUA. This Report documents all data and data collection procedures for the Project and current mineral resource estimates. This Report has an effective date of 30 October 2024.

1.1 Property Description & Ownership

The Project is located in the Reefton–Lyell and Paparoa goldfields, in the Buller district of the West Coast region of the South Island, New Zealand. RRPL's-permits comprise PPs 60893, 60894, 60758, and 60632 and EPs 60928, 60747, 60648, 60479, 60448, 60446, and 61101 issued under the Crown Minerals Act,1991 (CMA). The combined area of the permits is 853 km^2. Figure 4-1 illustrates the location of the Project area and its proximity to surrounding communities.

RRPL has 100% ownership of PPs 60893, 60894, 60758, and 60632 and EPs 60928, 60747, 60648, 60479, 60448, 60446, and 61101.

1.2 History

Previous Au production from the main Reefton Goldfield has been significant, totalling ~11 Moz Au from alluvial, open-cut, and historical underground mines (Siren Gold Limited, 2023c). Tonnages from the Lyell and Paparoa areas are unknown.

Stibnite has been recorded at several localities in the Project area, including the Croesus Knob and Langdon's reefs in the Paparoa Goldfield and in quartz lodes of the Reefton Goldfield, where quartz veins have been reported to comprise up to 10–30% stibnite (Finlayson, 1909). However, stibnite has not been exploited commercially from the Reefton–Lyell and Paparoa goldfields to date.

Previous exploration work in the Project area includes stream sampling, soil sampling, mapping, geophysical surveys, trenching, 3D modelling, and diamond drilling. The main activities are described in Section 6. Most of the previous exploration was conducted by Macraes Mining Co Ltd (MMCL), GRD Macraes Ltd (GRD Macraes), and OceanaGold New Zealand Ltd (OGL) between 1990 and 2018.

1.3 Geology & Mineralisation

New Zealand lies on the boundary between the Australian and Pacific plates, with the boundary being marked in the South Island by the Alpine Fault. The northwest of the South Island comprises the West Coast Basin region, which is mainly composed of broad, approximately north trending belts of early Palaeozoic rocks that terminate against the Alpine Fault in the southeast (Mortimer, 2004).

The Reefton–Lyell and Paparoa goldfields are hosted entirely within early Ordovician rocks of the Greenland Group in the Buller Terrane of the West Coast Basin (MacKenzie, 2014; Allibone et al., 2020). In the Reefton area, the Greenland Group forms a ~35 km × 15 km north-northeast trending belt that is bounded to the north and east by granitic plutons of the Late Devonian–Carboniferous Karamea and Cretaceous Rahu and Separation Point batholiths (Laird and Shelley, 1974; Tulloch, 1988; Muir et al., 1996). In the south and west, the belt is in fault contact with high-grade paragneisses of the Paparoa metamorphic core complex (Ritchie et al., 2015).

The Greenland Group is a turbiditic sequence of alternating greywackes and argillites that were deformed and metamorphosed to lower greenschist facies in the Ordovician–Devonian (450–387 Ma), with the development of illite clay facies (Adams, 2004; Turnbull et al., 2016). The sediments are dominated by greywacke, and beds are typically 0.2–2 m thick and separated by 10–30 cm layers of argillite. The greywackes typically comprise >50% quartz with lesser albite, partially recrystallised rock fragments, and muscovite, whereas the argillites are less quartz-rich and more micaceous (Milham and Craw, 2009). Widespread folding was most likely synchronous with metamorphism, and this deformation predates granitoid emplacement (Mortimer et al., 2013).

Gold and Sb mineralisation in the Project area is orogenic-style, and the deposits occur in and around steeply dipping, north to north-northeast trending shear zones that cut across the hinges of earlier folds in weakly altered metasedimentary rocks. The deposits are similar, in many respects, to those at Bendigo and Ballarat in Victoria (Cooper and Tulloch, 1992; Phillips and Hughes, 1996) and Nova Scotia in Canada (Ryan and Smith, 1998; Christie and Brathwaite, 1999).

Most of the Au- and Sb-bearing mineralisation in the Reefton–Lyell Goldfield, including all of the larger deposits, occurs along an approximately north trending linear belt that cuts a sequence of deformed metasedimentary Greenland Group rocks (Allibone et al., 2020). This suggests the presence of a deep-seated structure that has permitted mineralising fluids to migrate from their source to the upper crust, where Au and Sb were deposited.

The two dominant styles of Au mineralisation in the Project area are (MacKenzie, 2014):

1. coarse, native Au associated with minor sulphides in quartz veins; and
2. microscopic refractory Au within sulphides in sheared sediments and clay alteration (pug) zones adjacent to quartz veins.

Historical production targeted mainly coarse native Au; however, both mineralisation styles provide important exploration targets (Madambi and Moore, 2013).

1.4 Exploration

As of the effective date of this Report, RUA has not undertaken any exploration activities in the Project area. The nature and extent of historical exploration work undertaken by previous owners are presented in Section 6.3, and some of these data have been used as a basis for the MREs reported in Section 14. In anticipation of the acquisition of RRPL by RUA, exploration work conducted by RRPL including geophysical surveys, soil sampling, rock-chip sampling, trenching and drilling is summarised in Sections 9, 0, and 11.

Soil sampling was completed at Alexander River, Big River, Bell Hill, Big River, Golden Point, Lyell, Reefton South and Waitahu to test various mineralised structures. A total of 6,348 conventional, 775 ionic leach, and 1,531 ultrafine soil samples were collected. Over 500 rock-chip samples were collected from outcropping mineralisation. Rock-chip samples were used to identify new reefs and surface extensions of previously known reefs at Alexander River.

A total of 98 trenches have been completed in the Project for a total of ~750 m. RRPL completed 64 trenches for a total of ~500 m at Alexander River, Auld Creek, Big River, Cumberland, and Lyell. Mineralised veins at Alexander River and Auld Creek were chip sampled. Veins were sampled in intervals of 0.3–2.4 m, depending on the width of the outcrop, and averaged ~1 m.

RRPL completed a total of 150 drillholes in the Project for a total of 28,898 m. This brings the total of drillholes (historical and recent) in the Project to 291 for ~48,000 m of drilling. Drilling has involved helicopter-supported diamond drilling on both excavated sites and timber pads. Some underground and surface drilling have been conducted by MMCL and Kent Exploration Ltd (Kent) at Alexander River. Most drillholes used PQ for collar sections then HQ to depth, although RRPL did complete some holes to depth using NQ due to local ground conditions. All RRPL's drillholes used triple-tubed wireline core barrels, and oriented core was collected for all drillholes using REFLEX orientation tools.

Sample recovery was actively monitored by RRPL during drilling (Section 11.5.2.1.4). Drill-core recovery at Alexander River, Big River, Auld Creek, and Supreme averaged 96–98% for intervals returning >1 g/t Au and was consistent across the different hole diameters. The data are considered by the QP (Sean Aldrich) to be fit for the purpose of definition of low-confidence mineral resources.

Drillholes were selectively sampled on either side of an area of interest or known zone of mineralisation. Diamond core was used to obtain samples for geological logging and sampling. Cores were photographed and cut in half lengthways using a core saw in intervals of 1 m, unless determined otherwise by lithology. Diamond drill core samples were sent to SGS Waihi and SGS Macraes Flat for Au analysis. Samples were analysed for Au by 30-g fire assay with AAS finish (SGS method FAA303), and screen fire assays (SGS method FAS30K) were used if there was visible Au in the core. Bulk density assessments were conducted based on drilling in the Big River, Alexander River, and Golden Point (Auld Creek) permits. Following a review of the available data quality and SOPs, the QP (Sean Aldrich) considers the location, density, sampling, preparation, and analytical data to be fit for the purpose of defining low-confidence mineral resources. A summary of the data quality is presented in Section 11.

In January 2023, RRPL announced the results of metallurgical test work undertaken on samples from Alexandra River and Big River (Siren Gold Limited, 2023b). The samples from Alexander River and Big River indicated positive recovery, and gravity test work indicated that 24–49% of the Au was free. RRPL noted that the preliminary results indicated total recoveries of 90–93% if processed using pressure oxidation (POX). In September 2024, RRPL announced that three metallurgical samples selected from the Fraternal shoot at Auld Creek (Golden Point) yielded recoveries of >95% Au and antimony (Sb) (Siren Gold Limited, 2024a).

1.5 Mineral Resource Estimates

Geological modelling was conducted in Leapfrog Geo and was based largely on the 2023 RRPL geological model. The estimator domains were derived from geological and weathering models. Sub-domaining was undertaken in some domains to help constrain high grades. Contact analysis was completed to investigate the boundary conditions of each domain. The variables were estimated in the block model in one or two passes, with variable orientation based on the vein reference surface to guide the ellipsoid direction. Grades were interpolated using ordinary kriging (OK). Block model grades were validated by comparing the input mean grades with the block model mean grade using swath plots and visually using cross-sections. Sensitivity testing was undertaken to assess the input parameters. Depletion due to known historical workings was applied at Alexander River and Big River.

The QP (Abraham Whaanga) has classified all of the Mineral Resources for the Project in the Inferred Mineral Resource category in accordance with NI 43-101 and the CIM as the CIM Definition Standards on Mineral Resources and Mineral Reserves (May 2014) (Table 1-1 to Table 1-4). For the Inferred MRE, geological evidence is sufficient to imply but not verify geological and grade continuity. The Mineral Resource is based on exploration, sampling, and assaying information gathered through appropriate techniques from trenching and drillholes.

It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. For the Inferred portion of the MRE, confidence in the estimate is not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning in pre-feasibility or feasibility studies. Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as a scoping study or preliminary economic assessment.

Cut-off grades were selected for the reporting of Mineral Resources based on a high-level initial assessment of potential modifying factors (Section 14). The QP (Abraham Whaanga) completed a high-level initial assessment of various factors solely for the purpose of reasonably assessing the potential for eventual economic extraction of the MRE. The cut-off grade USD value was determined using mining and development costs and modifying factors for an anticipated sub-level, long-hole, open-stoping mining method.

Assessment of the reasonable prospects for eventual economic extraction (RPEEE) was carried out using a re-blocking approach. RPEEE categories were assigned after re-blocking the model to a regular block size and converting the block centroid extents to wireframe solids, thereby generating minimum mining units (MMUs or ‘stopes’).

Table 1-1: Classified MRE for the Alexander River deposit.

Domain	Classification	Tonnes (Mt)	Au (g/t)	Contained Au Ounces (koz)
LG McVicar West	Inferred	0.4	3.7	47
HG McVicar West	Inferred	0.2	4.3	25
LG Bull East	Inferred	0.1	1.7	5
HG Bull East	Inferred	0.1	3.8	7
Bruno 1	Inferred	0.1	5.6	8
Loftus-Mckay	Inferred	0.2	5.6	33
McVicar East	Inferred	0.1	3.9	7
Total	Inferred	1.0	4.1	130

Notes:

1. *The definitions for Mineral Resources of the Canadian Institute of Mining were followed.*
2. *The Mineral Resource was reported at a cut-off of 2.2 g/t Au.*
3. *The Mineral Resource was assessed for reasonable prospects of eventual economic extraction by re-blocking to a regular 2 mW × 4 mH × 4 mL minimum block dimension, converting to wireframe solids, and generating minimum mining units, commensurate with the anticipated smallest mining-unit dimensions for a long-hole stoping operation.*
4. *Totals may vary due to rounding.*

Table 1-2: Classified MRE for the Auld Creek deposit.

Domain	Classification	Tonnes (Mt)	Au (g/t)	Contained Au Ounces (koz)	Sb (%)	Contained Sb (kt)	AuEq (g/t)	Contained AuEq (koz)
Bonanza	Inferred	0.3	2.2	19	1.0	3	4.2	35
Fraternal 1	Inferred	0.4	3.6	49	1.2	5	5.8	79
Total	Inferred	0.7	3.1	67	1.1	8	5.2	110

Notes:

1. *The definitions for Mineral Resources of the Canadian Institute of Mining were followed.*
2. *The Mineral Resource is reported at a cut-off of 2.5 g/t AuEq.*
3. *Metal-equivalent grades were calculated using the following prices: 2,025 USD/oz Au, and 15,000 USD/t Sb and calculated using the formula AuEq = Au g/t + 1.9 × Sb%.*
4. *The Mineral Resource was assessed for reasonable prospects of eventual economic extraction by re-blocking to a regular 2.5 mW × 5 mH × 5 mL minimum block dimension, converting to wireframe solids, and generating minimum mining units, commensurate with the anticipated smallest mining-unit dimensions for a long-hole stoping operation.*
5. *Totals may vary due to rounding.*

Table 1-3: Classified MRE for the Big River deposit.

Domain	Classification	Tonnes (Mt)	Au (g/t)	Contained Au Ounces (koz)
Shoot 4 Upper	Inferred	0.2	3.5	30
Shoot 4 Lower	Inferred	0.5	3.1	50
Total	Inferred	0.7	3.3	70

Notes:

1. *The definitions for Mineral Resources of the Canadian Institute of Mining were followed.*
2. *The Mineral Resource is reported at a cut-off of 2.3 g/t Au.*
3. *The Mineral Resource was assessed for reasonable prospects of eventual economic extraction by re-blocking to a regular 2 mW × 5 mH × 2.5 mL minimum block dimension, converting to wireframe solids, and generating minimum mining units, commensurate with the anticipated smallest mining-unit dimensions for a long-hole stoping operation.*
4. *Totals may vary due to rounding.*

Table 1-4: Classified MRE for the Supreme deposit.

Domain	Classification	Tonnes (Mt)	Au (g/t)	Contained Au Ounces (koz)
Supreme	Inferred	0.4	2.3	30
Total	Inferred	0.4	2.3	30

Notes:

1. *The definitions for Mineral Resources of the Canadian Institute of Mining were followed.*
2. *The Mineral Resource is reported at a cut-off of 2.3 g/t Au.*
3. *The Mineral Resource was assessed for reasonable prospects of eventual economic extraction by re-blocking to a regular 2.5 mW x 2.5 mH x 5 mL minimum block dimension, converting to wireframe solids, and generating minimum mining units, commensurate with the anticipated smallest mining-unit dimensions for a long-hole stoping operation.*
4. *Totals may vary due to rounding.*

1.6 Conclusions & Recommendations

The QP (Sean Aldrich) has visited the sites, collected validation samples, reviewed the SOPs, and independently assessed the QC for diamond core sampling. Based on this review, the QP (Sean Aldrich) considers the historical and recent exploration programmes, including sampling, preparation, and analytical data, to be fit for the purposes of completing MREs for the Project. Key uncertainties and risks are discussed in Section 14.5.

Following a review of historical and recent exploration undertaken in the Project, the QP (Sean Aldrich) recommends a staged and success-driven exploration programme. The first phase of work will start with a targeting programme over the Project. This phase of work will require the compilation of all existing geological data in a Project-wide database and GIS workspace. Using the MREs completed for Alexander River, Big River, Auld Creek, and Supreme, RGL plans to carry out additional comprehensive geological modelling of Auld Creek and Alexander River, with the plan to re-commence drilling at Auld Creek being a priority.

A subsequent programme of works is recommended by the QP (Sean Aldrich). In addition, the QP (Sean Aldrich) makes the following recommendations.

Data Management

1. Move all drilling data (collar, survey, assay, lithology, bulk density, recovery, geotechnical, etc.) from Excel workbooks to a secure database before any further drilling is undertaken.
2. All QC data, including duplicate measurements (e.g. from soil sampling, trenching, drilling, bulk density, and pXRF analysis) should be collected to allow quantitative assessment of data quality.
3. Undertake a full core-shed sample and core inventory.

Quality Assurance

Soil:

1. Revise the soil sampling SOP to provide specific instructions.
2. Develop an SOP for ionic leach sampling that is specific to RRPL, including only relevant information and instructions.

Drilling:

1. Revise the drilling SOP to clearly document the procedure to be followed in the event of poor core recovery, including guidelines on what is considered acceptable recovery.
2. All core sizes (PQ, HQ, and NQ) were half-core sampled. The QP (Sean Aldrich) recommends updating the SOP to include different procedures for cores with different diameters. NQ core should be sampled in full, rather than half core.
3. Mark all core with an orientation line and cut core a few degrees off the line to preserve it. Always collect the same half of the core to reduce sample selection bias.
4. Update the core logging SOP (*RRL_SWP Core logging_draft)* to include regular check logging to ensure consistency of logging between geologists.
5. Create an SOP covering sample transport and chain-of-custody details to fully capture the process once drilling details and logistics have been confirmed.

pXRF:

1. Update the pXRF SOP to include instructions on reviewing the QC data including calibrating the PXRF data using the CRM results.

Quality Control

Bulk Density:

1. Collect duplicate bulk density measurements.
2. When selecting bulk density samples, select core samples with a range of defects, and alternative methods should be tested.

Drilling/Sampling:

1. Collect repeat GPS measurements for all collars and trench locations in order to assess the quality of the location data.
2. Resurvey all drillholes for drill-pad 14 at Auld Creek using DGPS.
3. Resurvey trench locations using DGPS.
4. Supreme drill collars should be located, and core should be located and relogged where possible.
5. Collect second-split (coarse crush) repeat samples for any future resource delineation drilling programmes from the same samples used for core-split duplicates.
6. For pulp samples, the QP (Sean Aldrich) recommends instructing the relevant laboratory to homogenise samples before collecting subsamples to avoid bias caused by settling during storage and transport.
7. Undertake further investigation to identify the source of the bias in core and pulp check sample analyses.

Analytical

1. Analyse all intervals of interest for Sb using multielement laboratory methods.
2. Calibrate all pXRF data based on the CRM results.
3. Source new, matrix-matched CRMs.

Other

1. For Sb at Auld Creek, the QP (Abraham Whaanga) recommends reviewing the two estimation domains containing high- and low-grade populations and determining if two geological domains can be defined.
2. The QP (Abraham Whaanga) notes that no metallurgical samples have been collected from the Supreme deposit and recommends that a metallurgical sampling programme is undertaken.

1.6.1 Phase 1

Following the review of historical and recent exploration undertaken in the Project, the QP (Sean Aldrich) recommends a staged and success-driven exploration programme.

1.6.1.1 Exploration Target Interpretation

The QP (Sean Aldrich) recommends undertaking a targeting programme over the Project. This work will require a comprehensive process of data compilation, data processing, and the creation of new interpretations and exploration targets for the Project area. Using a mineral systems approach, coupled with new datasets and new processing technology associated with those datasets, RGL plans to conduct an AI (artificial intelligence) system of machine learning using the VRIFY AI targeting process to provide new insights and potential new exploration targets which will be prioritised on potential and confidence, to inform the exploration program. This phase of work will require the compilation of all existing geological data in a Project-wide database and GIS workspace. This phase will also fulfil a number of CMA permit obligations, such as data compilation and targeting.

1.6.1.2 Geophysical Surveys

RGL has its own proprietary ultra-detailed magnetic surveying equipment (the UAV-based MagArrow system) that it plans to use extensively to assist in structural interpretation associated with specific target areas. The magnetic surveying will also fulfil the geophysical component of the CMA permit obligations across all the permits.

1.6.1.3 Drilling

In addition to the development of a broader exploration approach assessing the whole of the southern portion of the Reefton Goldfield using the VRIFY AI-assisted systems approach to target development, several important resource evaluations are standout targets for immediate modelling and further drilling.

Using the MRE evaluations completed on Alexander River, Big River, Auld Creek, and Supreme, RGL plans to carry out additional comprehensive geological modelling of Auld Creek and Alexander River, with the plan to re-commence drilling at Auld Creek being a priority. Following additional surface mapping, surface geochemistry, and modelling of Alexander River, RGL should consider detailed infill drilling on the high-grade lodes, as well as testing southerly extensions of the system.

The Cumberland area, south of the Globe Progress mine, which includes the Supreme MRE, also warrants immediate evaluation. This area will require comprehensive data re-evaluation and immediate surface exploration to expand the surface soil geochemistry, rock sampling, and trenching, with additional structural mapping to consolidate all data from numerous sources. UAV ultra-detailed magnetic surveying will assist in this process, as the regional magnetic data suggest a significant number of mafic intrusives may play an important structural role in mineralisation.

Drilling on the Supreme-Cumberland system is planned for early 2025 to meet the CMA permit obligations.

1.6.1.4 Regional Exploration

On completion of the mineral systems evaluation and targeting of the whole Project area, assisted by the VRIFY AI targeting; a comprehensive surface geochemical and field geological mapping program is envisaged to bring additional opportunities to the table to provide a pipeline of exploration targets for modelling and drilling. This work will fulfil the CMA work program obligations in the 2025 exploration program.

1.6.2 Phase 2

The Phase 2 exploration programmes will be dependent on the exploration success of the Phase 1 programmes. The QP (Sean Aldrich) notes that the bulk of the Phase 2 expenditure will be associated with the diamond drilling in and around known MREs. The timing of these programmes will vary based on exploration success and consenting for access.

1.6.3 Budget

The QP's (Sean Aldrich) recommended budget and exploration tasks for the Phase 1 and 2 exploration programmes are presented in Table 26-1. Estimated costs are in Canadian dollars (CAD).

Table 1-5: Proposed exploration budget (CAD) for Phase 1 and 2 expenditures.

Category	Phase	Exploration Task	Estimated Cost (CAD)
Prospecting and Exploration Expenditures	1	Targeting and Data Compilation	90,000
	1	Mapping	110,000
	1	Geochemistry	93,000
	1	Geophysics	89,000
	1	Drilling	1,705,500
Other Expenditures	1	Consenting	160,000
	1	Administration	287,000
	1	Corporate	115,000
Total Phase 1			2,649,500
Prospecting and Exploration Expenditures	2	Data Compilation	38,000
	2	Mapping	92,000
	2	Geochemistry	148,000
	2	Geophysics	42,000
	2	Drilling	2,200,000
Other Expenditures	2	Consenting	184,000
	2	Administration	287,000
	2	Corporate	81,000
Total Phase 2			3,072,000

2. Introduction

2.1 Purpose of the Report

In anticipation of the acquisition of RRPL, which was wholly owned by Siren, RUA commissioned RSC to prepare an independent technical report (the Report) in compliance with National Instrument 43-101: *Standards of Disclosure for Mineral Projects* (NI 43-101) and Form 43-101F1 in respect of the Reefton Project (the Project) in the Buller District of New Zealand. The Project comprises four PPs and seven EPs, all of which are held by RRPL, which is now a wholly owned NZ subsidiary of RUA. This Report documents all data and data collection procedures for the Project and current mineral resource estimates. This Report has an effective date of 30 October 2024.

2.2 Sources of Information

The information in this technical report is based on data supplied by RRPL, in addition to verification data collected by or under the supervision of the Qualified Persons (QPs). RRPL provided csv files exported from a database of all drilling and sample data available for the Project. Copies of previous reports (geochemical, petrological, geophysical, and metallurgical), core photographs, standard operating procedures (SOPs), and GIS data were also provided.

RRPL provided RSC with copies of the original logging sheets for drillholes. Original certificates, data files from ALS and SGS chemical analyses, original portable XRF (pXRF) data, standard operating procedures (SOPs), and collar survey files were also made available to RSC.

Information relating to property ownership, property titles, and legal and environmental matters was sourced from existing documentation and from the New Zealand Petroleum and Minerals (NZP&M) website.

A list of the sources of information, data, and reports reviewed as part of this technical report can be found in Section 27. The QPs take responsibility for the content of this report and consider the information within this Report to be accurate and complete in all material aspects.

2.3 Qualified Persons

This Report was completed by the following QPs.

Sean Aldrich (QP) is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM) and a Member of the Australian Institute of Geoscientists (AIG). Mr Aldrich is a full-time employee and principal geologist with RSC. Mr Aldrich holds an MSc in Earth Sciences from the University of Waikato (1996). He has more than 25 years of mining and exploration experience in New Zealand, Papua New Guinea, the Middle East, Central Asia, and Africa. Mr Aldrich's wider experience covers project generation, resource definition, and underground and open-pit mine geology. Mr Aldrich conducted the site visits and takes responsibility for Sections 1–13, and 23–27 of this Report.

Abraham Whaanga (QP) has nearly 20 years' experience in the mining industry, including epithermal gold in New Zealand, orogenic gold and nickel in the West Australian Goldfields, and iron ore in the Pilbara. He has experience in all facets of production and exploration geology, including resource estimation. Mr Whaanga also has a Diploma in Management from the Australian Institute of Management. He has been involved in mine shut-down and startup processes and has worked on numerous mine optimisation projects. He has published several papers on grade control, 3D scanning, digital mapping, geological modelling, and resource estimation using the Seequent suite of software products and Deswik.GeoTools. Mr Whaanga is a Chartered Professional with the AusIMM and has the required experience to act as a Competent/Qualified Person under JORC and NI 43-101 reporting. Mr Whaanga takes responsibility for Sections 6.4, 14, and 23.1 of this Report.

2.4 Personal Inspection (Site Visit)

Between 12 and 15 August 2024, the QP (Sean Aldrich) conducted a site visit to the Project. During this site visit, the QP (Sean Aldrich) checked drillhole collar and trench locations, inspected the core storage facilities, reviewed SOPs, and checked logging. The QP (Sean Aldrich) collected 128 half-core check samples from Alexander River, Auld Creek, Big River and Supreme and 90 pulp check samples from Alexander River, Auld Creek, and Big River. Details of this visit can be found in Section 12.

The QP (Sean Aldrich) confirms that no material work has been conducted on the Project since the August 2024 site visit.

3. Reliance on Other Experts

The QPs (Sean Aldrich and Abraham Whaanga) have not independently verified the legal status of RRPL's mineral permits and have not investigated the legality of any of the underlying agreements that exist concerning the Project.

The QP (Sean Aldrich) has reviewed the RRPL permit status information on the NZP&M website. The QP (Sean Aldrich) relied on the NZP&M website and the permit certificates issued under the CMA (certificates dated 10 May 2018, 20 June 2018, 13 December 2018, 19 March 2021, 15 December 2021, 17 December 2021, 14 December 2022, 25 May 2023, 20 November 2023, 30 November 2023, and 17 October 2024), which state RRPL's legal status and title of prospecting and exploration. However, the QP (Sean Aldrich) is not qualified to give a legal opinion with respect to the property titles contained within this report and discussed in Sections 4.3 and 4.4.

4. Property Description & Location

4.1 Summary of Project Purchase

On July 15, 2024 RUA announced it had entered into a definitive share purchase agreement, pursuant to which RUA will acquire 100% of the issued and outstanding shares of RRPL, a 100% owned subsidiary of Siren with permits listed in Section 4.3 (the Transaction). These permits are either near or immediately adjacent to RUA's permits.

Under the terms of the share purchase agreement, Siren shall receive total consideration of AUD 20 million (CAD 18.4 million):

- AUD 2 million (CAD 1.8 million) in cash, of which AUD 1 million has been paid and the remaining AUD 1 million will be paid at the close of the Transaction;
- AUD 2 million (CAD 1.8 million) in cash in exchange for 10 million common shares of Siren, to be exchanged at the close of the Transaction; and
- 83,927,383 fully paid shares of RUA, representing AUD 18 million (CAD 16.6 million), to be issued at the close of the Transaction with agreed contractual resale restrictions.

4.2 Location

The Project is located in the Reefton–Lyell and Paparoa goldfields, in the Buller district of the West Coast region of the South Island, New Zealand. The Project covers the town of Reefton and extends ~50 km north to Lyell and ~50 km southwest towards Greymouth. RRPL's permits comprise PPs 60893, 60894, 60758, and 60632 and EPs 60928, 60747, 60648, 60479, 60448, 60446, and 61101 issued under the CMA. The combined area of the permits is 853 km^2. Figure 4-1 illustrates the location of the Project area and its proximity to surrounding communities.

4.3 Mineral Tenure

4.3.1 Mineral Rights

Within New Zealand, the allocation of rights to prospect, explore, and mine for minerals owned by the Crown is carried out by the issuing of prospecting, exploration, and mining permits under the CMA. The administration of Crown-owned minerals is conducted on behalf of the New Zealand Government by the Minister of Energy and Resources, through the Ministry of Business, Innovation, and Employment (MBIE). The issuing of mineral permits is overseen by NZP&M.

Under the CMA, all petroleum, Au, silver (Ag), and uranium (U) in its natural state is deemed to be owned by the Crown, and pounamu (greenstone) is owned by Te Rūnanga o Ngāi Tahu. The granting of a prospecting, exploration, or mining permit provides the permit holder the right to prospect, explore, or mine the minerals specified in the permit.

Permits under the CMA are classified as either Tier 1 or 2, depending on the minerals they relate to, expected work programme expenditure, estimated production or royalty, and where the activities take place. All prospecting permits are classified as Tier 2. Exploration permits for Au are classified as Tier 1 unless the expected total work programme expenditure for the final five years of its life is less than NZD 1,250,000. Mining permits for Au, Ag, and platinum group metals (PGMs) are classified as Tier 1 if, in any one permit year in the next five years of its life, the annual royalty will be equal to or more than NZD 50,000. Mining permits for any other metallic mineral are classified as Tier 1 if, in any one permit year in the next five years of its life, the annual production will be equal to or more than 500,000 tonnes of metallic minerals ore. All underground operations are classified as Tier 1.

4.3.1.1 Prospecting Permits

Prospecting is any activity undertaken for the purpose of identifying land likely to contain mineral deposits or occurrences.

An exclusive prospecting permit gives the permit holder the exclusive right (although non-exclusive permits are also available) to prospect for the minerals referred to in the permit, in the land covered by the permit, and in accordance with the permit's conditions.

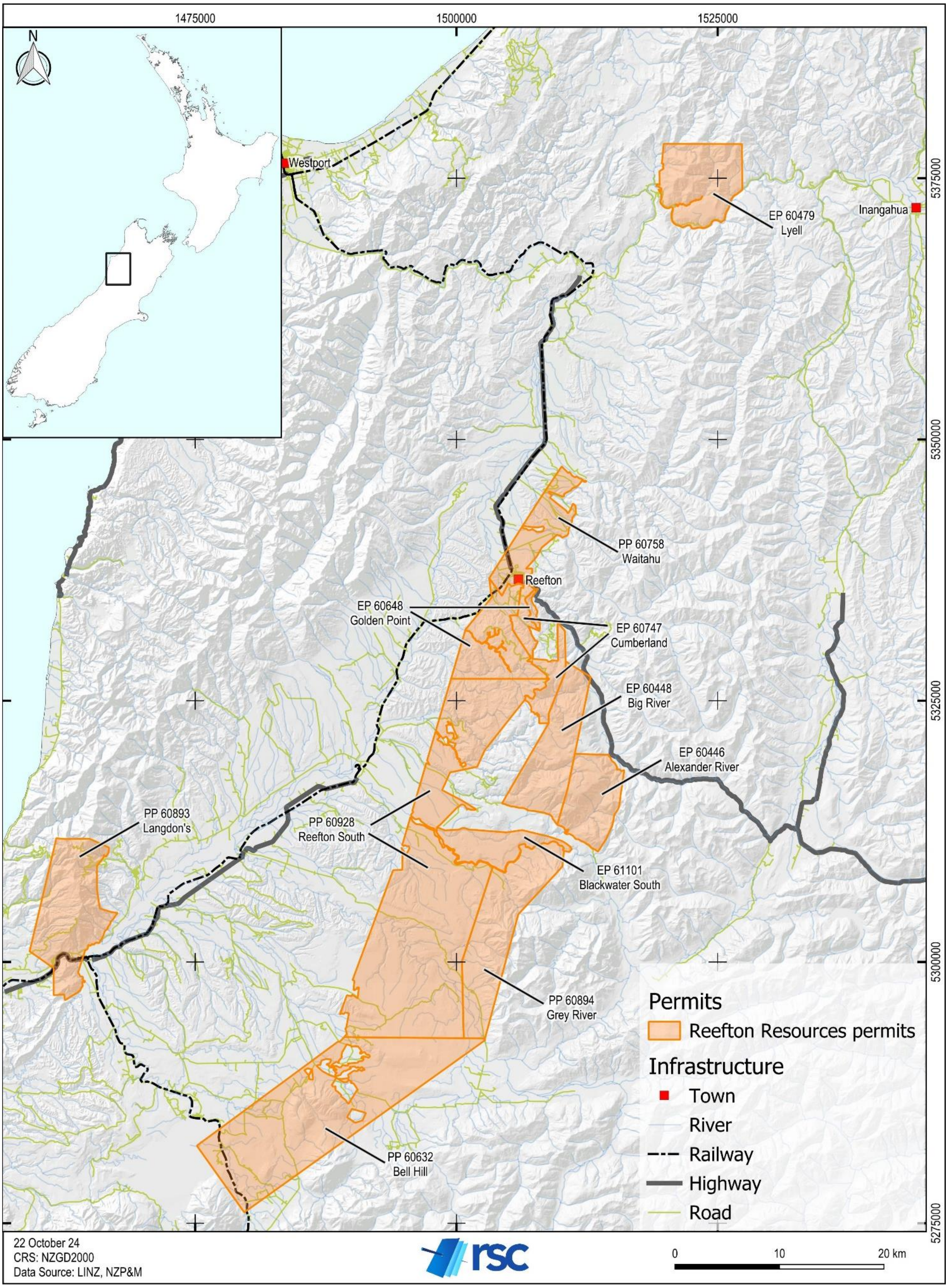


Figure 4-1: Location of the Project area and boundaries of the RRPL permits.

The permit conditions are subject to the following.

1. The rights under a prospecting permit apply to the relevant minerals whether they are Crown or privately owned. However, any extraction of privately owned minerals, beyond that incidental to prospecting, requires negotiation and agreement with the mineral owners.
2. The holder of a prospecting permit has a *prima facie* right to be granted a subsequent exploration permit in respect of the land and Crown-owned minerals to which the prospecting permit relates, if the prospecting is successful.

A prospecting permit is granted for a period of two years, with the possibility of extension for a further two years. There are no rights of renewal beyond four years. When a prospecting permit for minerals is renewed, the Minister typically requires relinquishment of half of the permit area.

Ordinarily, the maximum size of a prospecting permit granted by New Zealand Petroleum & Minerals (NZP&M) is 500 km^2, with the expectation that the size of any subsequent exploration permit will be smaller than the original prospecting permit.

A minimum annual fee for prospecting permits is payable to the Crown. For onshore prospecting, the fee is NZD 63.02 per square kilometre or part thereof, or NZD 1,610.00, whichever is greater.

RRPL currently holds four prospecting permits (PP 60893, PP 60894, PP 60758, and PP 60632).

4.3.1.2 Exploration Permits

Exploration is any activity undertaken for the purpose of identifying mineral deposits or occurrences and evaluating the feasibility of mining.

An exploration permit gives the permit holder the same rights as a prospecting permit, plus the exclusive right to explore for the Crown-owned minerals referred to in the permit, in the land covered by the permit and in accordance with the permit's conditions. An exploration permit cannot authorise exploration for privately owned minerals (noting, however, that all petroleum, Au, Ag, and U existing in its natural state is deemed to be owned by the Crown under the CMA).

Subject to the permit conditions, the holder of an exploration permit has a *prima facie* right to be granted a subsequent mining permit, in respect of the land and Crown-owned minerals to which the exploration permit relates, if the exploration is successful.

An exploration permit for minerals other than petroleum is typically granted for a period of five years, with the possibility to be extended for a further five years. There are no rights of renewal beyond 10 years, except for appraisal purposes. Appraisal extensions may extend the duration of an exploration permit by up to eight years. When an exploration permit for minerals is renewed, the Minister typically requires relinquishment of half of the permit area.

NZP&M does not specify a maximum size for an exploration permit but does dictate that an exploration permit must not be smaller than 150 hectares.

A minimum annual fee for exploration permits is payable to the Crown. For onshore exploration, the fee is NZD 358.00 per square kilometre or part thereof, or NZD 1,610.00, whichever is greater.

RRPL holds seven exploration permits (EP 60928, EP 60648, EP 60747, EP 60479, EP 60448, EP 60446, and EP 61101) issued under the CMA.

4.3.1.3 Mining Permits

Mining is taking, winning, or extracting, by any means, a mineral existing in its natural state.

A mining permit gives the permit holder the same rights as an exploration permit plus the exclusive right to mine for the specified Crown-owned minerals referred to in the permit, in the land covered by the permit, and in accordance with the permit's conditions. A mining permit cannot authorise exploration or mining for privately owned minerals (noting, however, that all petroleum, Au, Ag, and U existing in its natural state is deemed to be owned by the Crown under the CMA).

A mining permit remains in force for a period of up to 40 years. The duration of a mining permit may be extended if the discovery to which the permit relates cannot be economically depleted before the date of expiration.

There is a minimum annual fee for mining permits that are payable to the Crown. For onshore mining, for Tier 1 mining, the fee is NZD 2,058.50 per square kilometre or part thereof, or NZD 1,610.00, whichever is greater. For Tier 2 mining, the fee is NZD 2,058.50 per square kilometre or part thereof, or NZD 1,150.00, whichever is greater.

RRPL does not currently hold any mining permits.

4.3.1.4 Revocation of Permits

The Minister may revoke a permit if:

1. the permit holder contravenes a condition of the permit, the CMA, or regulations made under the CMA;
2. the permit is a Tier 1 permit, the permit holder is the permit operator, and the permit holder undergoes a change of control without the Minister's consent; or
3. the permit holder undergoes a change of control without notifying the Minister, or the Minister is not satisfied the permit holder, following the change of control, has the financial capability to meet its obligations under the permit.

The conditions for each of RRPL's permits are in Schedule 1 of the permit certificate.

4.3.2 Permit Status

RRPL is 100% owner and operator of four prospectivity permits and six exploration permits issued under the CMA (Table 4-1 and Figure 4-1). The total size of the Project is 853 km^2.

Table 4-1: Status of the mineral permits that comprise the Project area.

Permit No	Owner	Operation Name	Tier	Commodity	Date Granted	Term (years)	Expiry Date	Area (km2)	Comment
EP 60446	RRPL (100%)	Alexander River	1	Au, Ag	10 May 2018	10	9 May 2028	40.18	Extension for a further 5-year term (to 9 May 2028)
EP 60448	RRPL (100%)	Big River	1	Au, Ag	20 Jun 2018	10	19 Jun 2028	54.17	Extension for a further 5-year term (to 19 Jun 2028)
EP 60479	RRPL (100%)	Lyell	2	metallic minerals, excluding U	13 Dec 2018	10	12 Dec 2028	54.25	Extension for a further 5-year term (to 12 Dec 2028)
EP 60648	RRPL (100%)	Golden Point	2	metallic minerals, excluding U	19 Mar 2021	5	18 Mar 2026	47.30	
EP 60747	RRPL (100%)	Cumberland	1	Au, Ag	14 Dec 2022	5	13 Dec 2027	22.50	
EP 60928	RRPL (100%)	Reefton South	2	Au, Ag	30 Nov 2023	5	29 Nov 2028	255.09	
EP 61101	RRPL (100%)	Blackwater South	2	metallic minerals, excluding U	17 Oct 2024	5	16 Oct 2029	25.92	–
PP 60632	RRPL (100%)	Bell Hill	2	Au, Ag	15 Dec 2021	4	14 Dec 2025	172.40	Extension for a further 2-year term (to 14 Dec 2025)
PP 60758	RRPL (100%)	Waitahu	2	metallic minerals, excluding U	17 Dec 2021	4	16 Dec 2025	34.76	Extension for a further 2-year term (to 16 Dec 2025)
PP 60893	RRPL (100%)	Langdon's	2	metallic minerals, excluding U	25 May 2023	2	24 May 2025	73.05	
PP 60894	RRPL (100%)	Grey River	2	metallic minerals, excluding U	20 Nov 2023	2	19 Nov 2025	74.19	

4.3.2.1 *Work Programmes*

An applicant for a permit under the CMA must propose a minimum work programme for the proposed permit. The Minister will not grant the permit unless the Minister is satisfied the work programme is consistent with the CMA, the purpose of the permit, and good industry practice, and that the applicant is likely to comply with and give proper effect to the work programme. In addition, the work programme for a subsequent permit or permit extension of duration (EOD) must be approved by the Minister. A permit holder may apply to the Minister to change the work programme for the permit.

A summary of the minimum work programmes for the RRPL permits, including the status and due dates of permit obligations, is given in Table 4-2.

Table 4-2: Minimum work programmes for the RRPL permits.

Permit No	Item	Type of Activity	Due Date	Status
EP 60446	1a–1e	literature review, mapping, geochemical, target identification, reporting	10 May 2021	completed
	2a–2d	geochemical, drilling, appraisal, reporting	10 May 2023	completed
	3a–3g	mapping, geochemical, drilling, appraisal, reporting	10 May 2026	to be completed
	4a–4d	drilling, appraisal, reporting	10 May 2028	to be completed
EP 60448	1a–1e	literature review, mapping, geochemical, drilling, reporting	20 Jun 2021	completed
	2a–2d	geochemical, drilling, appraisal, reporting	20 Jun 2023	completed
	3a–3f	mapping, geochemical, drilling, appraisal, reporting	20 Jun 2026	to be completed
	4a–4d	drilling, appraisal, reporting	20 Jun 2028	to be completed
EP 60479	1a–1f	literature review, mapping, geochemical, target identification, data compilation, reporting	13 Dec 2021	completed
	2a; 2c; 2e	geochemical, data compilation, reporting	13 Dec 2023	completed
	3a–3e	mapping, geochemical, drilling, target identification, reporting	13 Dec 2026	to be completed
	4a–4d	drilling, MRE, scoping study, reporting	13 Dec 2028	to be completed
EP 60648	1a–1g	literature review, geochemical, test pitting, target identification, drilling, data compilation, reporting	19 Mar 2021	completed
	2a–2e	geochemical, drilling, data compilation, define Inferred resource, reporting	19 Mar 2026	to be completed
EP 60747	1a–1k	literature review, geophysical, geochemical, target identification, drilling, data compilation, reporting	14 Dec 2025	to be completed
	2a–2g	geochemical, geophysical, drilling, data compilation, JORC resource estimate, reporting	14 Dec 2027	to be completed
EP 60928	1a–1f	mapping, geophysical, model updates, compilation of GIS database, data complication	30 Nov 2026	to be completed
	1g; 2a–2g	mapping, geophysical, drilling, data compilation, reporting	30 Nov 2028	to be completed
EP 61101	1a–g	mapping, geochemical, geophysical, reprocessing magnetic/radiometric data, target identification, compilation of GIS database, reporting	17 Oct 2027	to be completed
	2a–d	Mapping, geochemical, drilling, GIS database update, reporting	17 Oct 2029	to be completed
PP 60632	1a–1g	literature review, mapping, geochemical, data compilation, geophysical, target identification, reporting	15 Dec 2023	completed
	2a–2g	mapping, geochemical, geophysical, data compilation, target identification, modelling, reporting	15 Dec 2025	to be completed
PP 60758	1a–1d	literature review, geophysical, geochemical, reporting	17 Dec 2023	completed
	2a–2g	mapping, geochemical, geophysical, target identification, GIS database update, modelling, reporting	17 Dec 2025	to be completed
PP 60893	1a–1h	literature review, drillhole review, mapping, geochemical, magnetic data filtering, geophysical, target delineation, reporting	25 May 2025	to be completed
PP 60894	1a–1e	literature review, geophysical, geochemical, target delineation,	20 Nov 2025	to be completed

		reporting		

4.4 Surface Rights & Permits

The granting of a permit under the CMA does not confer a right of access to the land covered by the permit, except for certain minimum impact activities.

Subject to some limited exceptions, the permit holder must have an access arrangement with each owner and occupier of the land to carry out more than minimum impact activities on or under the land, but the permit holder is required to give 10 working days' notice to the landowner and occupier. The access agreement (AA) may be either agreed by the parties or determined by an arbitrator under the CMA. An access arrangement is binding on the owner's or occupier's successors in title.

An activity carried out below the surface of the land does not require an access arrangement if the activity will not, or is not likely to:

1. cause any damage to the surface of the land or any loss or damage to the owner or occupier of the land;
2. have any prejudicial effect regarding the use and enjoyment of the land by the owner or occupier; or
3. have any prejudicial effect regarding any possible future use of the surface of the land.

Access to Crown land requires permission from the relevant Minister of the Crown with responsibility for the land. To sample Crown land, held or managed under the Conservation Act (1987) or other Acts specified in Schedule 1 of the Conservation Act, the permit holder must gain consent or an access arrangement from the Department of Conservation (DOC). Permit holders require consent (this differs from an access arrangement, which is stricter) from DOC to conduct minimum impact activities on conservation land. For all other exploration and mining activities on conservation land, the permit holder will require an access arrangement from DOC. If an access arrangement is sought for conservation land, the Minister of Conservation must determine whether the proposed mining activities are 'significant'. If the activities are 'significant mining activities', the application for land access must be publicly notified with a submission period.

Prospecting permits give the permit holder the right to prospect for specified minerals using very low-impact methods, such as literature searches, geological mapping, hand sampling, or aerial surveys. Exploration permits give the permit holder the exclusive right to explore for specified minerals in the permit area using higher-impact exploration methods, such as drilling and earthworks. However, any exploration activity must be allowed under the Resource Management Act (1991) or permitted by a granted resource consent.

The Resource Management Act classifies activities into six primary categories: permitted, controlled, restricted discretionary, discretionary, non-complying, and prohibited. These different categories determine whether resource consent is required before carrying out an activity, and what will be considered when resource consent application is assessed. National Environmental Standards and Regional and District Plans regulate which category an activity falls into and, therefore, whether resource consent is required.

The majority of land within the Project area was State Forest Land, gazetted in 1981 as the Victoria State Forest Park. This land was subsequently renamed the Victoria Conservation Park and came under the administration of DOC under the Conservation Act 1987. DOC, therefore, has primary responsibility for the conservation of New Zealand's natural and historical heritage. DOC also has responsibilities under other related legislation including the National Parks Act 1980 and the Reserves Act 1977. Parts of the land within the permit area have further conservation protection with the additional gazettal of Wildlife Management Areas, Amenity Areas, and Ecological Areas. Timberlands West Coast administers exotic and some indigenous forest stands. Freehold landforms a minority of the tenement distribution.

RRPL has three active agreements with DOC to undertake minimum impact activities (MIAs) on the land administered by DOC within its permit areas. MIA agreements give access to the land to conduct non-mechanical exploration, such as surface geochemical sampling and mapping. Details of these MIA agreements are presented in Table 4-3.

RRPL previously held an MIA agreement with DOC covering Lyell (EP 60479), which expired on 12 December 2023.

Table 4-3: DOC MIA agreements held by RRPL.

Permit No	Operation Name	MIA Consent No	MIA Grant Date	Status	MIA Expiry Date
EP 60479	Lyell	91289-MIA	15 Dec 2020	Inactive	12 Dec 2023
EP 60747	Cumberland	103695-MIA	1 Apr 2023	Active	31 Mar 2026
PP 60632	Bell Hill	108642-MIA	1 Nov 2023	Active	14 Dec 2025
PP 60893	Langdon's	107539-MIA	1 Nov 2023	Active	14 May 2027

In addition to the current MIA agreements, RRPL holds two active AAs with DOC. RRPL previously held two AAs for EP 60448 (Big River) and EP 60446 (Alexander River), which expired on 23 May 2024 (Table 4-4). An AA allows for more intrusive work, including exploration drilling.

Table 4-4: DOC AAs held by RRPL.

Permit No	Operation Name	AA Consent No	AA Grant Date	Status	AA Expiry Date
EP 60448	Big River	71148-AA	24 May 2019	Inactive	23 May 2024
EP 60446	Alexander River	71324-AA	24 May 2019	Inactive	23 May 2024
EP 60648	Golden Point	93190-AA	18 Jun 2021	Active	18 Mar 2026
EP 60747	Cumberland	109859-AA	21 Dec 2023	Active	20 Dec 2028

Note:

As of the effective date of this Report, a variation to extend the AA for EP60446 was pending approval.

The QP (Sean Aldrich) reviewed RRPL's agreements with DOC concerning exploration work programmes for the permits. No significant risks were identified with regard to RRPL holding sufficient surface rights to allow effective exploration in the permit areas.

4.5 Royalties & Encumbrances

4.5.1 Crown Royalties

One of the purposes of the CMA is to provide “a fair financial return to the Crown for its minerals”, which is achieved through a system of mandatory Crown royalties.

The Crown Minerals (Royalties for Minerals Other than Petroleum) Regulations 2013 (Royalty Regulations) set out rates and provisions for the payment of Crown royalties on non-petroleum mineral production. The Royalty Regulations provide for the payment of royalties on exploration and mining permits, to the extent minerals are produced from the permits.

Subject to certain thresholds (notably, a net sales revenue threshold of NZD 200,000 per annum), the royalty regime under the Royalty Regulations for Tier 1 permits for metallic minerals is:

1. for Au and net sales revenue from Au of not more than NZD 2M per annum, an *ad valorem* royalty of 2% of net sales revenue; and otherwise
2. the higher of an *ad valorem* royalty of 2% of net sales revenue or an accounting profits royalty of 10% of accounting profits.

For Tier 2 permits, the royalty regime under the Royalty Regulations for metallic minerals is an *ad valorem royalty* of 1% of the net sales revenue(s) of the minerals obtained under the permit.

4.6 Environmental Liabilities & Permits

New Zealand’s principal environmental legislation is the Resource Management Act 1991 (RMA).

The RMA regulates the impacts of all activities on the natural and physical environment, including land, water, and air. An activity must be permitted under either:

1. the relevant district or regional plan (which is administered by the relevant district or regional council);
2. a resource consent granted by the relevant district or regional council; or
3. the RMA itself, or a regulation made under the RMA.

Activities are typically permitted subject to conditions, such as to mitigate environmental effects in various ways, to monitor and report, or to pay an environmental bond.

The RMA contains a general duty to avoid, remedy, or mitigate any adverse effect on the environment arising from an activity, whether the activity is permitted or not.

If a resource consent is required for an activity, an application must be made to the relevant district or regional council. Resource consents may be granted or declined and are subject to appeal procedures. Unless the environmental effects of the activity are minor and written approvals have been obtained from any affected parties, resource consent applications will be notified, and third parties or the general public will be able to submit on whether the activity should be consented and on what conditions.

A variety of injunctive and compensatory enforcement orders are available under the RMA to prevent, remedy, and provide compensation for environmental non-compliance. In serious cases, resource consents can be cancelled. It is an offence to contravene the principal sections of the RMA. Offences attract significant fines of up to NZD 600,000 for a company, with the possibility of an additional penalty in the case of commercial gain.

RRPL was granted a DOC MIA on 15 December 2020 (which expired on 12 December 2023), covering the majority of the Lyell permit area (EP 60479). In June 2022, RRPL submitted an AA application to DOC to undertake drilling and construct drill camps and helicopter landing sites within the permit area. The AA comprised 18 drill sites, three drill camps, and two helicopter landing sites. To accompany the application, RRPL commissioned Wildlands ecologists to undertake a bat survey within the proposed drilling area. The survey was completed in March 2023, and a report was submitted to DOC (Giejsztowt et al., 2023). RRPL also commissioned Southern Archaeology to undertake an archaeological assessment of most of the proposed drill sites, camps, and helicopter landing sites. The survey was completed in June 2022 and the report submitted to DOC (Petchey, 2022).

To the best of RRPL's knowledge, it has not committed any breaches of the RMA or any other environmental laws. RRPL has not been the subject of any enforcement proceedings for breaches of its environmental obligations.

RRPL holds the necessary permits under the CMA for its current prospecting and exploration activities (see Section 4.4).

RRPL has, or is expected to have, the necessary access arrangements in place for its current prospecting and exploration activities (see Section 4.4).

Based on its review of RRPL's permits issued by NZP&M concerning exploration in the Reefton area and other available material, the QP (Sean Aldrich) has identified nothing to suggest RRPL does not hold sufficient permits as of the effective date of this Report to allow it to explore the permit area effectively.

4.7 Other Significant Factors & Risks

Mining in New Zealand is a sensitive subject and, like in many other Western countries, there are active anti-mining groups.

Exploration and mining projects within New Zealand can also be the subject of negative social media campaigns by emboldened local and online anti-mining groups. In 2019, Plaman Resources lost its social licence to operate at the Foulden Hills Diatomite Mine, Otago[1]. A negative social media campaign resulted in the project losing funding and thus being unable to proceed. The QP (Sean Aldrich) notes that while there is some risk of social licence issues, the West Coast and Buller regions have stronger support for mining than the rest of New Zealand. Recent mining related consents include Federation Mining being granted consent for an on-site processing plant at the nearby Snowy River mine in January 2023. Consents were granted by the Buller District Council and the West Coast Regional Council under a limited notification process. The Grey District and West Coast Regional Councils granted consent on 29 April 2024 for the Barrytown mineral sand mine, following a public hearing. The consent was subject to conditions including traffic plan,

[1] https://www.newsroom.co.nz/southern-discomfort-at-fossil-mining-plans

lighting plan and avian management plan. This consent was subject to an appeal to the Environment Court, which was resolved when the operating company, TiGa Minerals and Metals, agreed to amend conditions and reduce its hours of operation.

The current NZ government, a coalition of the National, NZ First, and Act parties, strongly supports mining and has discussed plans to double mining earnings over the next decade. This has created a very positive environment for exploration and the potential to fast-track the delineation and permitting processes in the event of a discovery through the Fast-track Approvals Bill. The bill proposes to establish a permanent, fast-track approvals regime for projects of national and regional significance and will be overseen by the Ministers for Infrastructure, Transport, Regional Development, and Conservation, and the Minister responsible for the CMA. The proposed system will be a 'one-stop-shop' for resource consents, notices of requirement, and certificates of compliance under the Resource Management Act (1991) and approvals required under several other acts, including the CMA (1991), the Conservation Act (1987), and the Wildlife Act (1953). The Bill has been introduced to the House, and public submissions are currently being accepted by the Environment Committee. There is a risk that the Bill will be further altered, and it could fail at one of three readings. Furthermore, New Zealand's electoral cycle is only three years long, and the current political climate may not continue past the next national election in 2026.

While there is always some risk of social licence issues, the exploration targets are underground with minimal anticipated surface impacts. The QP (Sean Aldrich) is of the opinion that these are far more likely to have regulatory and public support, as opposed to operations with a larger surface footprint.

5. Accessibility, Climate, Local Resources, Infrastructure & Physiography

5.1 Accessibility

The Project area covers the town of Reefton and extends ~50 km north to Lyell and ~50 km southwest towards Greymouth. Access is via a mixture of main highways (e.g. State Highway 6, 7, and 69), sealed and unsealed public roads, 4WD tracks, and foot access tracks (Figure 5-1–Figure 5-2). The permit areas are mainly within the Victoria Park Conservation area. Local roads that lead off from the highways provide vehicle access to various parts of the area, and old mining access roads locally provide 4WD access to the major historical mines. DOC maintains recreational walking tracks within the prospects.

Heavy machinery access requires helicopter transport to some permit areas. Local firms operate helicopter charter services, and fixed-wing charter services are available through the Greymouth Aero Club.

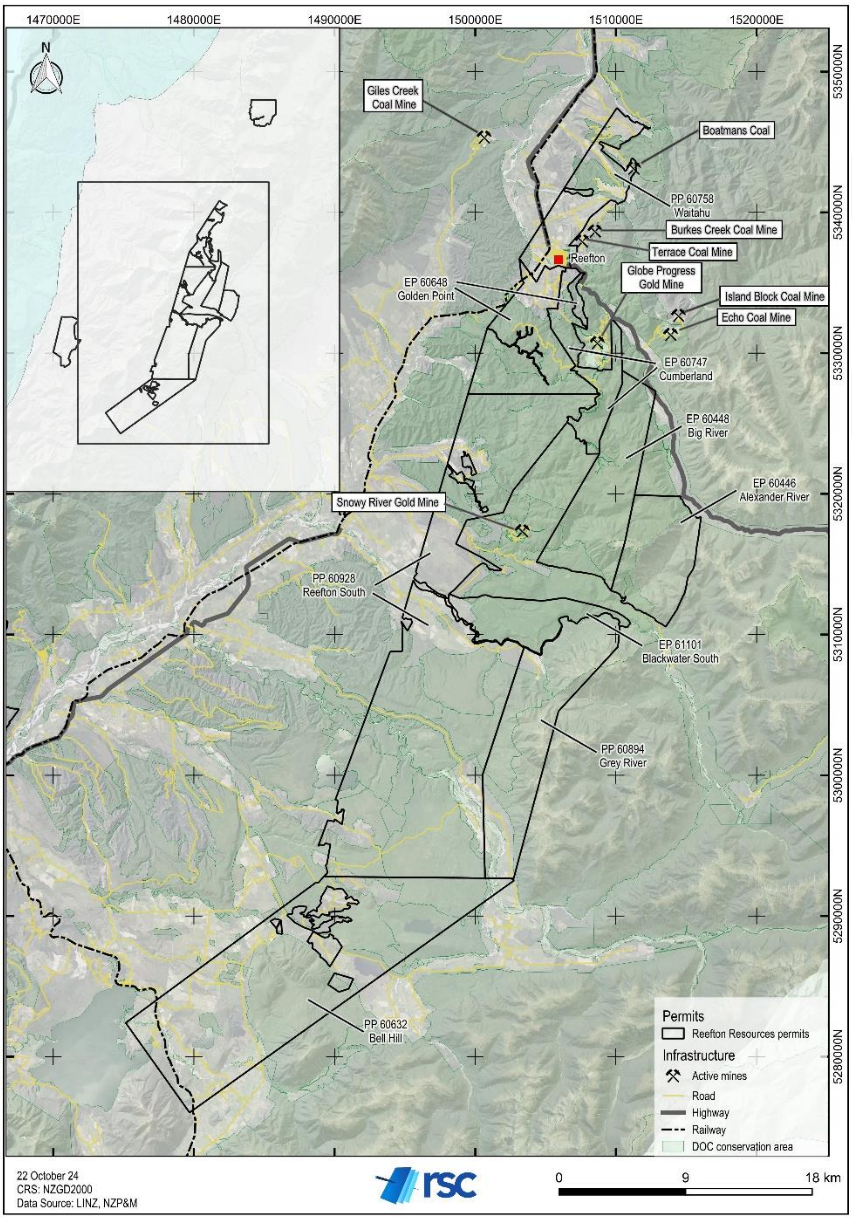


Figure 5-1: Cadastral map illustrating accessibility to the permits within the Reefton Goldfield.

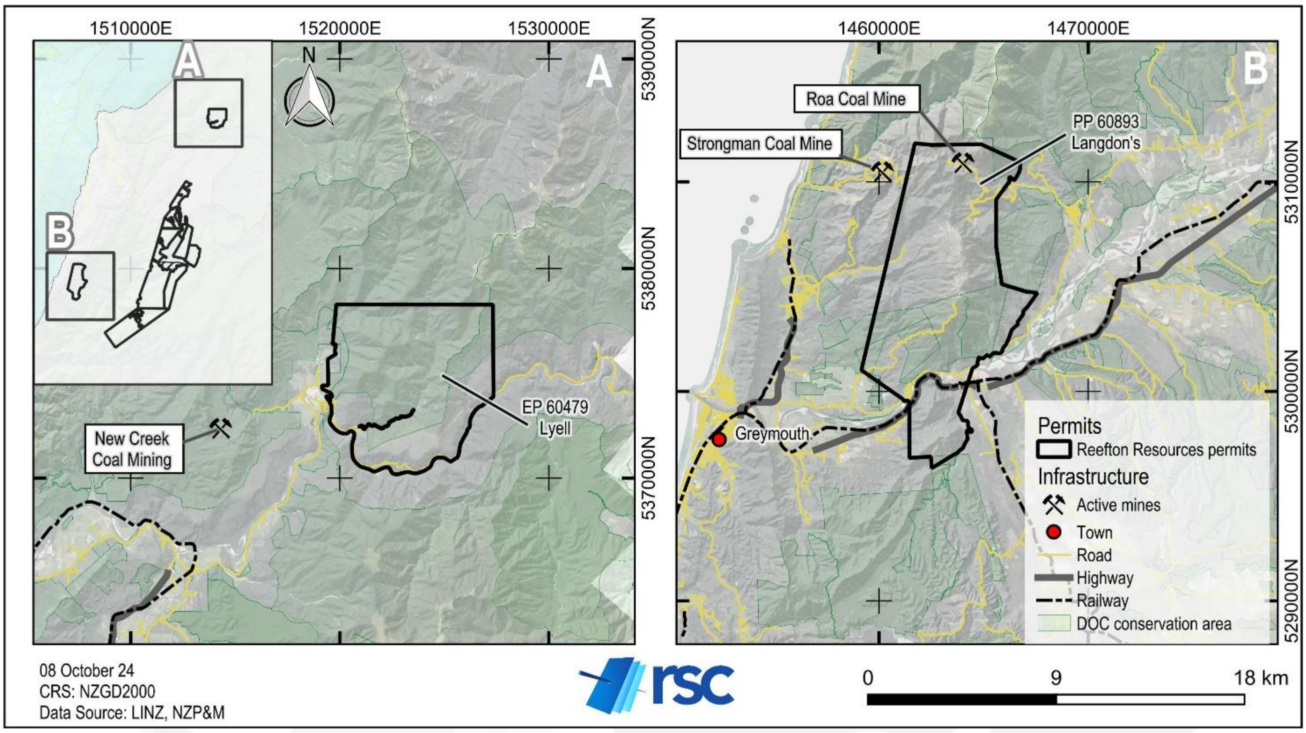


Figure 5-2: Cadastral maps illustrating permit accessibility around (A) EP 60479 (Lyell) and (B) PP 60893 (Langdon's).

5.2 Climate

The Project area is in the rain shadow of the Paparoa Range. The climate is wet and temperate, with average annual rainfall in Reefton of 1,920 mm per year. Spring is the wettest season, and late summer and early autumn are the driest. Summer weather is often mild and relatively dry, and frosts and fogs are common in winter, with an average of 2 days of snow and 68 days of ground frost. Average mean temperatures range from 5°C in winter to 17°C in summer. Field work can be conducted year-round, but field activities can be restricted any time of the year by periods of extreme weather (i.e. heavy rain).

5.3 Physiography

The Project area is situated mainly in hilly country with moderate to steep relief in the foothills of the Victoria and Brunner ranges and on the southern slopes of the northeast striking Lyell Range (Figure 5-3). The topography is locally very steep and varies in elevation from ~100 to >1,000 m above sea level. Creeks and rivers strongly incise the area, and the steep topography often limits fieldwork access to foot or helicopter access.

Figure 5-3: Typical topography at the Project, looking south from Big River.

5.4 Vegetation

The Inangahua and Grey valleys have been largely cleared for agriculture, and the Waitahu permit area (PP 60758) comprises mainly farmland. Otherwise, the dominant vegetation on mountain slopes below 1,000 m is mixed, regenerating, indigenous beech (*Nothofagus* spp.) and podocarp (principally rimu) forest growing on poor and immature soils. Alpine scrublands and grasslands are present at higher altitudes, and flat floodplains are observed along the Grey and Ahaura rivers. There are also areas with exotic pine plantations near the township of Reefton. The vegetation coverage in the Project area can limit access for exploration activities and regenerates rapidly; for example, drill pads cleared ~2 years ago at Alexander River are already covered by ferns (Figure 5-4).

Figure 5-4: Indigenous beech and regenerating drill pad at Alexander River.

5.5 Local Resources & Infrastructure

The properties are located within the Buller and Grey districts and are typically well-connected by state highways and public roads to nearby towns. The nearest hospital is in Greymouth, and there is a community health centre in Westport (Figure 5-5). The closest regional airport is in Hokitika, which connects to Christchurch International Airport. Reefton is connected to New Zealand's rail network. There are small ports located at Westport and Greymouth, which typically service small tonnage coastal freight and fishing vessels.

To support its exploration, RRPL has an exploration office and core shed in the township of Reefton. The exploration office includes a small laboratory for processing soil samples, core storage, core cutting, logging, and density and pXRF measurements.

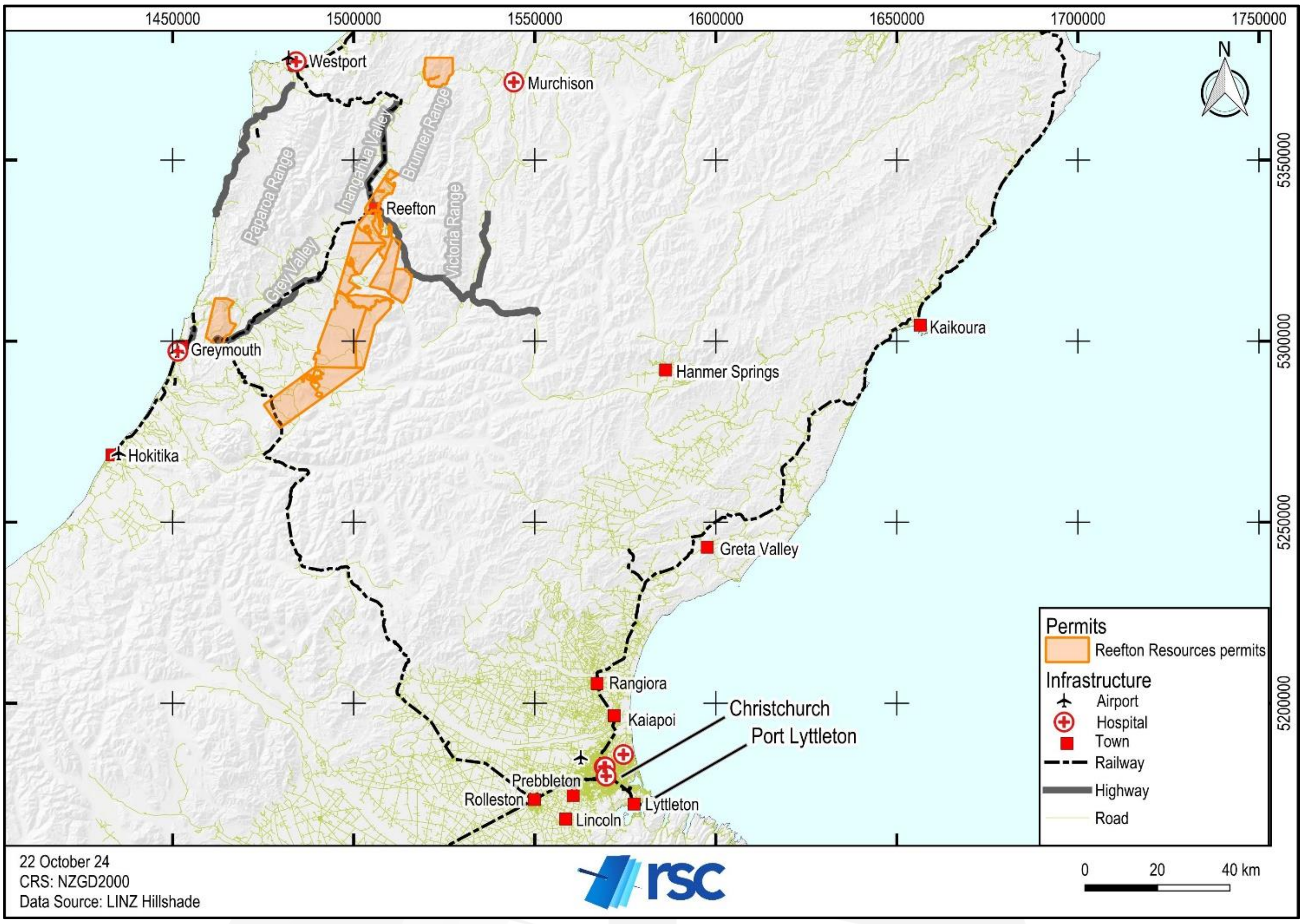


Figure 5-5: Accessibility to utilities and main centres in the central South Island.

Cell phone coverage for much of the Project area is patchy. VHF radios are used for communication between the RRPL base, drill sites, surface sampling teams, and other local operators (DOC, helicopter pilots, etc.).

Helicopter landing sites are available at Alexander River and Big River to service the drilling (Figure 5-6).

Water at the drill sites is sourced from the nearest creek. Depending on how far away the nearest water source is from the drill site, a series of pumps can be used to pump water to the drill pads. Power at the camp and drill sites is sourced from diesel-fuelled generators (Figure 5-7).

The West Coast region of the South Island has an active mining industry; therefore, there are numerous skilled contractors and organisations in the area that can support exploration and mining activity.

Figure 5-6: Landing site at Alexander River.

Figure 5-7: Drill camp at Alexander River.

6. History

6.1 Tenure & Operating History

The Project is located in the Reefton–Lyell and Paparoa goldfields, which contain numerous historical alluvial and hard-rock Au mines. Prominent historical mines in the Lyell Goldfield include Alpine United, Lyell Creek, Break of Day, Croesus, Tyrconnell, and United Italy (Reefton Resources Pty Ltd, 2023c). Major historical mines within the RRPL permit areas in the Reefton Goldfield include the Alexander River, Big River, Golden Point, Morning Star, New Discovery, Fraternal, and Bonanza mines, alongside several smaller mines (Downey, 1928; McCulloch, 2023c). The Langdon's Reef (also known as Langdon's Antimony Lode) historical mine lies within the Langdon's permit area in the Paparoa Goldfield (Christie and Brathwaite, 1992).

Much of the Reefton Goldfield was previously held by Lime and Marble Limited (L&M) between 1970 and 1971 (Riley and Ball, 1971), and then by CRA Exploration Limited (CRAE) between 1981 and 1990. MMCL (later OGL) then held most of the goldfield from the late 1990s until the Capleston and Globe Progress areas were relinquished in 2018 and 2020, respectively.

6.2 Mining & Production History

The mining history of the Reefton–Lyell and Paparoa goldfields includes both alluvial and hard-rock mining. Previous Au production from the main Reefton Goldfield has been significant, totalling ~11 Moz Au from alluvial, open-cut, and historical underground mines (Siren Gold Limited, 2023c). Tonnages from the Lyell and Paparoa areas are unknown but are likely to exceed ~91 and ~1.5 koz, respectively (Table 6-1).

Stibnite has been recorded at several localities in the Project area, including the Croesus Knob and Langdon's reefs in the Paparoa Goldfield and in quartz lodes of the Reefton Goldfield, where quartz veins have been reported to comprise up to 10–30% stibnite (Finlayson, 1909). However, stibnite has not been exploited commercially from the Reefton–Lyell and Paparoa goldfields to date.

6.2.1 Hard-Rock Gold

Table 6-1 summarises the historical Au production within the RRPL permit areas in the Reefton–Lyell and Paparoa goldfields. Locations are illustrated in Figure 6-1.

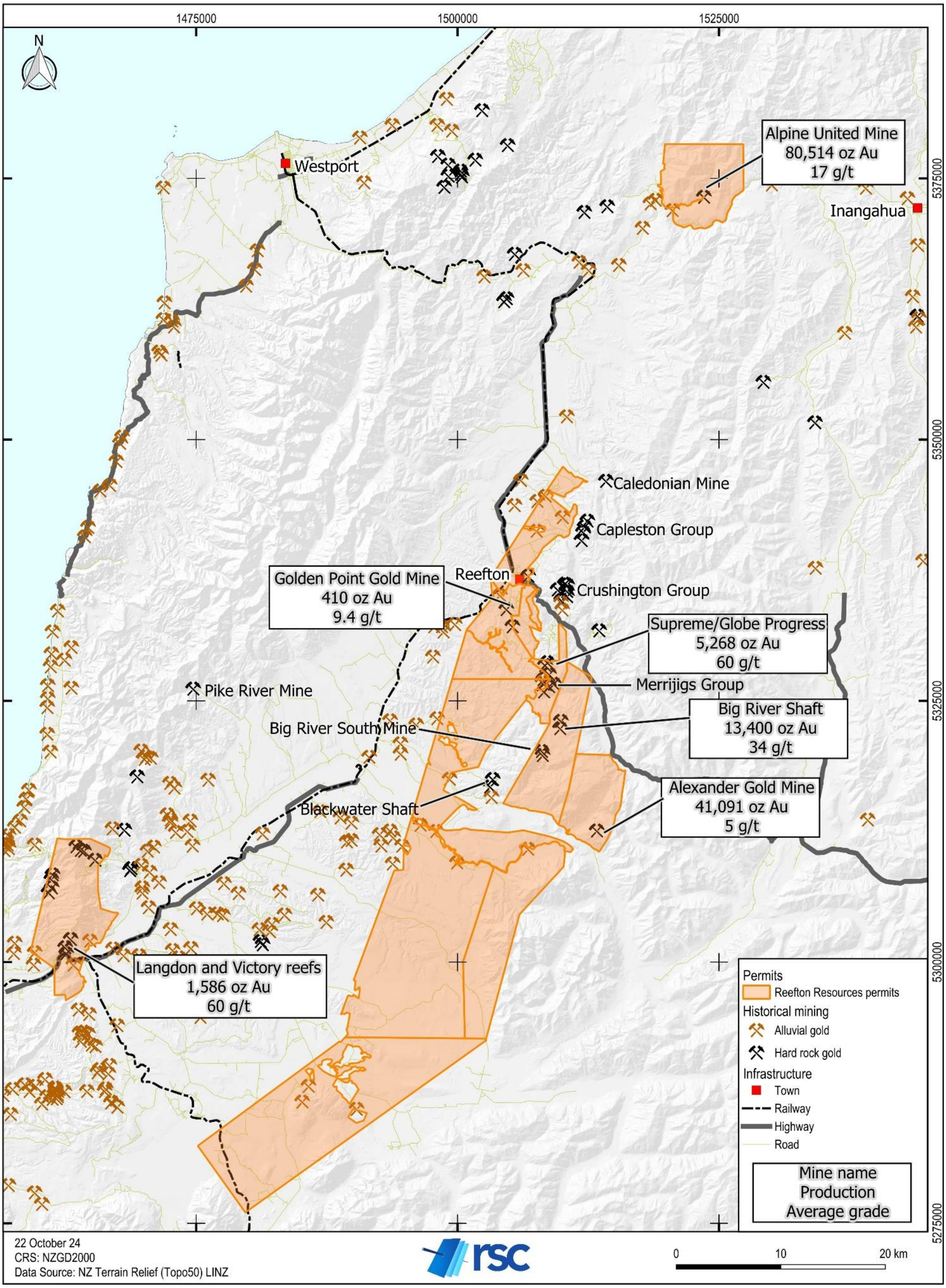


Figure 6-1: Locations of historical hard-rock and alluvial mining centres within the Project area.

Table 6-1: Historical production from notable mines within the Reefton–Lyell and Paparoa goldfields.

Goldfield	Mine Group	Quartz (tonnes)	Gold (oz)	Au Grade (g/t)
Lyell	Alpine United	149,024	80,514	17
	Lyell Creek	135	450	104
	Break of Day	2,180	4,598	66
	Croesus	2,773	1,897	21
	Tyrconnell	201	1,672	259
	United Italy	513	2,219	69
Reefton	Alexander River	47,726–48,894	41,091	5
	Big River	124,000	13,400	34
	Golden Point	1,357	410	9.4
	Supreme	22,214	5,268	4.4
Langdon's	Langdon and Victory reefs	809	1,586	60

6.2.1.1 Lyell Goldfield

Quartz mining commenced in the Lyell Goldfield in the 1870s, with the Alpine United Mine — the most significant mine in the goldfield — producing the first reef Au in 1871 (Reefton Resources Pty Ltd, 2023c). Over a 42-year period, a total of 21 mines produced >91 koz Au at an average recovered grade of 18.4 g/t (Siren Gold Limited, 2022a).

The Alpine United Mine worked profitably from 1874–1897. The historical mine is located in the headwaters of Irishman's Creek and was worked by adit and underground shaft down to the No. 9 level. The vein is up to 15 m wide, with two north plunging ore shoots worked along a maximum strike of ~120 m. Cross faulting disrupts the main vein below the No. 6 level; therefore, this zone was not identified during operation, despite some indications on the extent of throw (Pilcher and Cutovinos, 2008). Total historical production from the Alpine United Mine is estimated at 80,514 oz Au at a grade of ~17 g/t Au (Reefton Resources Pty Ltd, 2023c).

6.2.1.2 Reefton Goldfield

The first discovery of auriferous quartz in the Reefton Goldfield was in June 1870, with the discovery of a reef in the head of Murray Creek. The first prospecting claim application was lodged on what was later the Golden Treasure claim. Further discoveries followed in November 1870, the most important being the Andersons lode in Andersons Creek, the Ajax shoot in German Jacks Gully, and the adjacent Golden Fleece shoot (Barry, 1993).

The Auld Creek area of the Golden Point permit was first prospected in 1870 by Theodore Ranft, and several claims were subsequently pegged (Downey, 1928). An initial 45-cm-wide Au-Sb lode was identified in a western tributary of Auld Creek, and a 46-m-long southerly striking drive was placed to follow the lode. However, the quantities of Au and Sb were insufficient to warrant construction of a treatment plant, and the mining operations soon ended (McCulloch, 2023b).

Auriferous quartz was first discovered at Big River in 1881; however, production did not begin until 1887 owing to the limited access. Ore blocks were worked from a shaft collared in Devonian rocks on a hilltop 67 m above the winder. Ore was worked from the shaft over 12 levels, which reached an eventual depth of 602 m. The richest lode was mined between levels 8 and 11, producing >90 koz Au. The mine closed in 1927 owing to the recovery of limited ore from level 12 and deterioration of the shaft (Reefton Resources Pty Ltd, 2023b). The Big River Mine was reopened in 1932, and more ore shoots were identified above levels 2 and 3 after further prospecting and mined down to level 7 (Reefton Resources Pty Ltd, 2023b).

Discoveries of new deposits in the Reefton Goldfield dropped off in the late 1890s and early 1900s. In 1908, a prospecting shaft was constructed on the Bonanza claim in the Auld Creek area, following a 2.4-m-wide reef to a depth of 27.4 m and returning an average grade of 23.3 g/t Au (Downey, 1928). A further drive was constructed 121.92 m below the reef outcrop for a total length of 60 m; however, the direction is unknown. An attempt was made in 1914 to reopen the mine, and the Bonanza drive was repaired and extended a further 60 m, returning an average grade of 21.7 g/t Au; however, no production was recorded (Downey, 1928; McCulloch, 2023b). The claims were soon abandoned. A second lode (the Fraternal lode) was mined ~300 m northeast of the Bonanza workings around the same time, but no records on the grades or extent of the activities are available. Other than the discovery of the Alexander reefs to the south of Reefton in 1920, there were no further significant discoveries, and Au production steadily declined as the Globe-Progress, Wealth of Nations, and Keep-it-Dark mines closed in the 1920s and 1930s (Barry, 1993).

Quartz float was discovered in the Alexander River in 1920, leading to the development of the historical Alexander River mine workings. The mine operated until its closure in 1943, producing a total of 41,091 oz Au from between 47,726 and 48,494 t of quartz (both tonnages have been reported for the same ounces) (Downey, 1928). The mine layout is complex due to the local geology, with the near-surface lode dipping to the east and plunging to the north, whereas lodes of various attitudes have been mined at depth. Mineralised shoots occurred over a continuous, ~1.3-km reef track or shear zone and included the Bull, Firmiston, McVicar, Bruno, McKay, Loftus, and Mullocky shoots, respectively, from southwest to northeast. The McVicar shoot was the main producer and was developed down to the No. 6 adit level, ~260 m below the surface; the remaining shoots were only prospected or developed on one or two adit levels (Grove and Binks, 2023). Initial development of the lodes was challenging due to the complex faulting and the shallow plunge of the shoots, which had not been identified at that time. Further development and prospecting focussed only on the McVicar shoot until the mine closed (Downey, 1928; Grove and Binks, 2023).

At the outbreak of the Second World War, the Big River and Blackwater mines were the only producers. However, wartime labour shortages led to the closure of the Big River Mine in September 1942. When the Blackwater shaft collapsed on 9 July 1951, the ventilation and drainage systems of the Blackwater Mine were disabled, and 81 years of continuous quartz mining activity in the Reefton Goldfield came to an end. Hard-rock Au mining would not recommence in the Reefton area until 2007, when OGL reopened the Globe Progress mine. The mine yielded 606,000 oz Au over the life of the open pit operation, which ceased production in 2015. In total, 12.89 Mt of ore was processed at Globe Progress, with an average grade of 1.8 g/t Au. Globe Progress transitioned to closure and rehabilitation in 2016 and is now known as the Reefton Restoration Project (Edwards, 2020).

6.2.1.3 Paparoa Goldfield

Langdon's Reef in the Langdon's Creek area of the Paparoa Goldfield was first discovered in 1879, and 17 claims were taken up by 1882 (Christie et al., 2010). Several mines were opened on various reefs, including Langdon's, Victory, Julian, Bonanza, Antimony, and Wilson's, and a battery was established in Langdon's Creek in 1885 (Siren Gold Limited, 2022b). The lode was described by Hector (1879), McKay (1883), and (Morgan, 1911) as a 0.6–2.7 m thick bedded quartz lode with 0.6 m "compact stibnite" and additional pyrite, arsenopyrite, calcite, and free Au within Greenland Group greywacke and argillite. Initial values reported by Hector were 2,610 g/t Au and 1,120 g/t Ag, and 45.28 kg Au was produced in 1884–1888 (Christie et al., 2010). The Langdon and Victory reefs were mined successfully for five years, with reported production of 1,586 oz Au at an average grade of 60 g/t Au (Table 6-1) (Siren Gold Limited, 2022b, 2023d). A second battery was constructed in Stoney Creek in 1890; however, no production figures are available (Aliprantis, 1988).

The Croesus Knob reef system, located 14 km north of Langdon's Reef, was worked for Au between 1891–1905, mainly at the Minerva, Croesus, Taffy, and Garden Gully claims. In this system, quartz-vein stockworks measuring 1 mm to 3 m wide occur along bedding planes or faults in the Greenland Group rocks. Visible Au mineralisation and associated sulphides are confined to pockets within or on the margins of lenticular quartz veins (Christie and Brathwaite, 1992).

6.3 Previous Exploration & Development Work

Several companies have conducted exploration and development in the Project area. The main activities are described below and summarised in Table 6-2.

6.3.1 1935–1949

In the 1930s, the government Au prospecting scheme conducted work in the Lyell Goldfield, including underground mapping, sampling, and development on some newly discovered quartz veins at South Alpine and Reid's Discovery. The Au grades and vein material were inconsistent; however, values of up to 38 g/t Au were obtained from veins measuring up to 0.6 m wide in 9-m-wide reef zones. The Alpine No. 7 level was reopened in 1937, and further mapping indicated that the mineralisation was widely disrupted by faulting (Pilcher and Cutovinos, 2008).

Further government-assisted surveys in the form of work schemes, or as part of scientific studies, were conducted in the Reefton Goldfield to identify the controls on Au mineralisation (Gage, 1948).

The Langdon's and Victory mines in the Paparoa Goldfield were revitalised after the second world war. A new aerial ropeway was constructed, 60 m of new drive was mined, and 105 m of existing drive was revitalised. However, no production data are available for this period, and work ceased in 1952 owing to insufficient ore (Aliprantis, 1988; Siren Gold Limited, 2022b).

6.3.2 1951–1979

Small-scale exploration for Sb over Murray Creek was completed by L&M in the 1970s, including the collection of ~230 stream-sediment samples. Hand-drawn contour maps are the only record of this programme, and no sampling or analytical methodologies were reported (Riley and Ball, 1971). L&M explored Auld Creek between 1969–1972, primarily for Sb, focussing mainly on the Bonanza workings owing to the reported historical Sb grades. Activities involved field mapping and a stream-sediment sampling programme, during which every tributary of Auld Creek was sampled for Sb. A soil-sampling programme was also conducted to determine the extensions of historical lodes (McCulloch, 2023b). L&M subsequently completed three trenches across Bonanza anomalies identified around the historical workings, one of which intercepted narrow, high-grade Sb mineralisation; however, no further work was conducted on the permit area. L&M also explored the Cumberland permit area for Sb, including the area around the Supreme deposit (McCulloch, 2023a).

Carpentaria Exploration Co Pty Ltd conducted the first significant Au prospecting work in the Reefton–Lyell area in the early 1970s, collecting 444 stream-sediment samples across 14 prospecting licence areas (Zuckerman, 1972). In 1972, Otter Minerals collected 68 reconnaissance stream-sediment and 47 soil geochemical samples over the old Lyell Goldfield area during an initial period of exploration (McClelland, 1973). This allowed the delineation of a zone of anomalous Au and arsenic (As), coinciding with the extent of known historical workings between Eight Mile Stream and Irishman's Creek, and anomalous Cu to the north (Pilcher and Cutovinos, 2008). Follow-up work in 1973 involved the collection of a further 32 soil and 130 rock geochemical samples over the same area; however, not all samples were assayed. McClelland (1973) suggested that the Au mineralisation at Lyell was restricted to irregular minor quartz veins and concluded that continued Au exploration was not economical at that time.

6.3.3 1980–1989

6.3.3.1 Gold Mines NZ Ltd

In 1980, Gold Mines NZ Ltd conducted a regional helicopter-supported stream-sediment sampling programme over the Lyell Goldfield. In addition to typical stream-sediment samples, bulk sediment was also collected from a local trap and subjected to a series of assay and mineral count analyses; however, no data are available (Reefton Resources Pty Ltd, 2023c).

6.3.3.2 CRAE Exploration Ltd

In 1981–1982, CRAE Exploration Limited (CRAE) completed trenching and rock-chip sampling of outcrop and mullock heaps in the Cumberland permit area, targeting old workings and anomalies identified in the 1930s DSIR resistivity survey. From 1983 to 1989, CRAE was a major explorer in the Reefton–Lyell Goldfield, holding ground from Waiuta in the south to the Brunner Range in the north (Begg and Foster, 1983; Green and Rosengren, 1984; Rosengren, 1984; Lew, 1986; Corner, 1987; Lew, 1987a, b; Patterson, 1987; Lawrence, 1988, 1989; Corner, 1990). CRAE conducted regional-scale stream-sediment geochemical sampling and airborne magnetic/radiometric surveys, including a photo-based interpretation of the mineralised corridor. CRAE also completed 52 drillholes, the majority (39) of which were outside the Project at the Globe Progress deposit.

Table 6-2: Summary of previous exploration in the Project area.

Permit	Geochemical Sampling			Trenching and Channel Sampling	Drilling	Geophysics
	Soil	Stream	Rock-Chip			
Alexander River	CRAE: 730	CRAE: 80 Kent: 7 Carpentaria: ~17	CRAE: 54 Kent: 20 Carpentaria: 4	CRAE: 11 trenches (100 m), channel samples unknown Kent: 163 trench samples	Karamea/MMCL:481.4 m DD (7 holes) Kent: 1,315 m DD (9 holes)	CRAE: regional aeromagnetic Kent/Zonge: dipole–dipole resistivity and IP
Big River	CRAE: 683 OGL: 990	–	CRAE: 83 OGL: 100	CRAE: 11 trenches sampled OGL: 11 channel samples	OGL: 4,106 m DD (19 holes)	–
Lyell	Otter Minerals: 96 Auzex: 881	Otter Minerals: 36 Tectonex: 30	Otter Minerals: 130 Tectonex: 46	-	Auzex: 748 DD (6 holes)	-
Golden Point	CRAE: 550 MMCL: 323 OGL: 273	MMCL: 55	CRAE: 82	L&M: 3 trenches (13.22 m) CRAE: 11 trenches (80 m) MMCL: 10 trenches (109 m), 50 samples	MMCL: 324.6 DD (3 holes) OGL: ~1,630.9 m DD (13 holes)	CRAE: ground magnetics
Bell Hill	-	Carpentaria: 17 Titan: 107	Carpentaria: 4 Titan: 17	–	–	Crown, magnetic and radiometric survey
Waitahu	-	–	–	–	–	-
Cumberland	CRAE: unknown	L&M: 705 CRAE: 242	CRAE: 545	CRAE: unknown	MMCL: 2,624.9 m DD (23 holes) OGL: 4,337.1 m (32 holes)	RRPL: LiDAR CRAE: aeromagnetic, IP orientation
Reefton South	-	–	-	–	-	-
Blackwater South	–	–	–	–	–	–
Grey River	–	–	–	–	–	–
Langdon's	–	–	–	–	–	–

Between August 1984 and January 1986, CRAE conducted a regional-scale soil sampling programme on 17 east-trending ridge traverses, spaced ~2 km apart, over the majority of the Reefton Goldfield (Lew, 1986), collecting 2,693 A-horizon soil samples. A further survey was conducted over an east–west oriented grid over the Capleston area in 1987, during which C-horizon samples were collected at a line spacing of 50–200 m and a sampling interval of 12.5 m (Lew, 1987b). The grid was extended northwards during a second survey in 1987 to cover the Welcome-Hopeful workings (Corner, 1987), and 359 samples from the B/C soil horizon were assayed for Au, As, and Sb by atomic absorption spectrometry (AAS) at the ISL laboratory, Nelson, New Zealand.

In 1984–1988, CRAE explored a 208-ha area around Auld Creek for Au, with exploration efforts focussed on defining a north trending, up to ~1,300-m-long mineralised corridor. Activities included the development of a soil grid over the central-western part of the area, covering the main areas of historical workings, to test for Au, As, Cu, Pb, and Zn, and samples were later despatched for low-level (>1 ppb) detection of Au. CRAE collected 118 rock-chip, float, and trench samples. A total of 82 outcrop samples were collected over 12 trenches, and 36 float and outcrop samples were collected around areas of historical workings. Two 300-m-long, east–west ground magnetic surveys were also completed 100 m apart across the areas of the Bonanza and Fraternal geochemical anomalies (McCulloch, 2023b).

Titan Resources Ltd (Titan) conducted exploration activities in the Bell Hill and Granite Hill areas of the Reefton Goldfield from 1986–1988. Work included pan-concentrate, stream-sediment, and rock sampling of the drainages surrounding the Bell and Granite hills, with a particular focus on the area around the Jones and Deep creeks. Titan also conducted geological mapping at a scale of 1:13,250 over the Bell Hill and Granite Hill areas (Reefton Resources Pty Ltd, 2023e). After identifying the narrow quartz vein and trench from the historical "quartz leader" (Bolitho, 1930), Titan conducted chip-channel sampling; however, no Au was detected. Titan speculated that the historical report, which had not been confirmed by independent observers at the time, may have been embellished in an attempt to gain government funding (Reefton Resources Pty Ltd, 2023e). Overall, the work completed by Titan indicated that none of the rocks in the Granite and Bell hill areas were shedding Au.

CRAE was granted a two-year limited impact prospecting licence over part of the Alexander River area in 1986 (Lew, 1988). Activities were focussed on the delineation of an auriferous halo of sulphide-hosted mineralisation around the early mined reefs and included the relocation of old mine workings and sampling of old mullock heaps, geological mapping, stream-sediment and associated float and rock-chip sampling, soil sampling for As and Au (730 samples) over a 200 m × 25 m grid, and trenching (11 trenches) in the area around the historical Alexander Mine, including clearing, mapping, and sampling of old trenches. A regional aeromagnetic survey was then conducted by Geoinstruments Pty Ltd in 1988 (Grove and Binks, 2023).

CRAE continued exploration in the Cumberland and Merrijgs areas in 1986, conducting a programme of mapping and extending the soil grids from Globe Progress to the Cumberland area. Targets identified during the soil sampling were followed up with trenching and channel sampling (McCulloch, 2023a).

CRAE later conducted a detailed reconnaissance survey over the Brunner Range in 1988, covering the area between the Reefton and Lyell goldfields (Lawrence, 1988), collecting 138 stream-sediment, 259 pan-concentrate, and 166 lithological samples at a sample density of one sample per 2.3 km^2. A second survey implemented a further systematic regional stream-sediment/pan concentrate/float rock-chip sampling programme over most of the Greenland Group stratigraphy (Lew and Agnew, 1990), involving the collection of 121 stream-sediment, 121 pan-concentrate, and 191 rock-chip samples over an area of 745 km^2. A theoretical sampling density of one sample per 2.4 km^2 was achieved.

CRAE collected stream-sediment samples from active portions of the creeks and wet sieved to <180 µm (-80 mesh) in the field. Samples were dried and ring milled to -200 µm in the laboratory. A 30-g split was fire assayed for Au, while a 1-g split was analysed for As, Sb, Ag, Bi, Cu, Pb, and Zn using AAS (Lew and Agnew, 1990). Pan-concentrate samples weighing 10–20 g were collected from two 20-l pans of <10-mm sieved gravel that was taken from the best trap sites available in the active flood parts of the creeks. The samples were dried, weighed, and analysed for Au, As, Sb, and W by neutron activation analysis (Lew and Agnew, 1990). The stream-sediment and pan-concentrate samples were analysed by Analabs in Auckland, New Zealand. CRAE concluded that the stream-sediment technique was ineffective due to contamination from old workings, interference from fluvioglacial-derived Au, and the poor chemical weathering in the area. Anomalous As and Sb were the best indicators of primary mineralisation. The pan concentrates yielded more robust results; however, some anomalies were identified, including at Snowy River Tributary, South Capleston, Snowy Creek, Montgomery Tributary, Shaw Stream, and Bateman's Creek (Lew and Agnew, 1990).

In 1988, CRAE completed an airborne magnetic/radiometric survey over the Reefton Goldfield. The survey was conducted by Geo Instruments Pty Ltd, using a Geometrics G-813 proton precession, bird-mounted magnetometer with a flight-line spacing of 200 m and a mean terrain clearance of 85 m (Southern Geoscience Consultants, 1996). CRAE trialled several ground geophysical techniques on a prospect-by-prospect basis, e.g. ground magnetics, induced polarisation (IP) resistivity, and downhole logging. Ground magnetics had limited application due to the low magnetic contrast of the Greenland Group sediments. An exception was observed at Murray Creek, where a ground magnetic survey identified a mineralised dolerite dyke (Lawrence, 1989).

In 1989, CRAE established a grid to the north of the Welcome-Hopeful mine, over the Specimen Hill prospect. A total of 496 soil samples were collected and analysed for Au by fire assay at Analabs in Auckland, New Zealand. Arsenic and Sb concentrations were determined by AAS using hot and cold acid digests, respectively (Corner, 1990). A close association was identified between As and Au in soil samples, with coincident anomalies in both metals. In the same year, CRAE conducted a programme of stream-sediment and field sampling over the major stream tributaries in the Big River area. CRAE also carried out geological mapping and trenching along road outcrops and stream beds, and 11 trenches were sampled within the Big River permit area. Soil samples were collected at 25-m intervals over several ~200-m traverses and analysed for Au, As, and Sb (McCulloch, 2023c).

6.3.3.3 Mineral Resources Ltd

Exploration in the Langdon's area was limited during the 1980s but included some investigations by Mineral Resources Ltd and mapping and rock-chip, stream-sediment, and soil sampling by Tasman Gold Developments (Tasman) (Aliprantis, 1988; Cotton and Stewart, 1989; Siren Gold Limited, 2022b). Anomalous Au, Sb, and As were identified over a strike length of 500 m, and Au and arsenopyrite were also reported in wall rocks.

6.3.3.4 *Tasman Gold Developments Ltd*

Tasman Gold Developments Ltd sampled silicified, sheared sandstone with minor quartz stringers and sulphides, which assayed 1.1 m @ 7.0 g/t Au, similar to the disseminated arsenopyrite and Au mineralisation at the Alexander River project (Siren Gold Limited, 2022b).

6.3.3.5 *Amoco Minerals NZ Ltd*

Amoco Minerals NZ Ltd explored the Croesus Knob reef area of the Paparoa Goldfield in the early 1980s (Erceg and Barnes, 1982) and reported maximum base-metal values of 7,400 ppm Sb, 5,700 ppm Cu, 1.72% Pb, 2,400 ppm Zn, and 8,490 ppm As. A peak Au value of 12 ppm was indicated by weakly anomalous Au in soil samples over 500 m (Christie and Brathwaite, 1992).

6.3.4 1990–2018

6.3.4.1 *1990–2018 (Macraes Mining Co Ltd, GRD Macraes Ltd, and OceanaGold NZ Ltd)*

MMCL, GRD Macraes, and OGL previously held various permits over parts of the Project area. In 1990–1995, MMCL carried out limited work on the Capleston/Crushington prospect areas of the Reefton Goldfield to assess the work completed by CRAE, along with some high-level reconnaissance mapping and rock-chip sampling (Abraham, 1995). From the late 1990s to 2012, the company completed various exploration programmes within the area, including mapping and geochemical sampling around the historical workings. However, limited work was carried out post-2013 and, with the shut-down of OGL's Globe-Progress Mine in 2015 and later closure in 2016, most exploration activities ceased.

In 1990, Karamea Resources Ltd, a wholly owned subsidiary of MMCL, was granted a prospecting licence over 15.39 km^2 of the Alexander River area, which was worked in 1992–1996 (Hazeldene, 1993). MMCL carried out adit recovery to the No. 6 adit level of the historical McVicar workings and conducted underground mapping and sampling of the mineralised zone. MMCL also drilled four shallow diamond drillholes from the surface for a total of 153.4 m, intersecting the Bruno shoot, and completed three underground diamond drillholes from the No. 6 adit for a total of 328 m. The underground drillholes were geologically logged, and selected intervals were sampled at 1-m intervals and assayed for Au, As, and Sb (Grove and Binks, 2023).

The Auld Creek project was granted to Karamea Resources Ltd in 1994 for a period of six years. During this time, MMCL created and compiled a GIS database using previous and newly acquired exploration data, collected 55 stream-sediment samples, delineated two shear zones (Bonanza and Fraternal) by infilling the central part of CRAE soil grid using east–west transects, and completed a wacker sampling programme (173 samples) in the south of the Project area (McCulloch, 2023b). A total of 150 soil samples were collected and analysed for Au (>1 ppb Au), As, Bi, Ca, Cu, Fe, Mn, Mo, Pb, Sb, and Zn (Reefton Resources Pty Ltd, 2023d). MMCL further targeted the Bonanza and Fraternal shear zones, completing a programme of trenching for 109 m across 10 trenches. Seven of the trenches targeted the Fraternal zone, and three targeted the Bonanza zone, and MMCL also collected 13 rock-chip and grab samples across the two zones. MMCL drilled three east-northeast oriented diamond drillholes for a total of 324.6 m to test the interpreted down-dip extensions of the surface mineralisation, one targeting the Bonanza zone and the other two targeting the Fraternal zone (McCulloch, 2023b).

MMCL commenced operation in the Cumberland permit area in the early 1990s, including the Supreme, Inkerman, and Scotia-Gallant areas. From 1994–1996, MMCL conducted mapping and soil and rock-chip sampling over the Devils (Globe Progress to Empress) and Rainy Creek (Supreme) catchments, including mapping areas of glacial cover (McCulloch, 2023a).

In 1995, MMCL compiled previous and historical GIS data and conducted follow-up mapping and rock-chip sampling over the Big River area. MMCL also completed a petrological study on 12 samples and a programme of field mapping in the area at this time (McCulloch, 2023c).

From 1995–2001, three wacker programmes were completed by MMCL/GRD Macraes over the Specimen Hill prospect, the Murray Creek area, and the Auld Creek area in the centre of the Reefton Goldfield (GDR Macraes, 2001). OGL completed an additional programme of wacker sampling over the Crushington/Murray Creek area in 2008–2011 (Comeskey, 2011; McLelland, 2011).

MMCL completed a total of 1,164 m of diamond drilling in the Cumberland permit area in 1996–1997, including 11 drillholes to test the Happy Valley shear between the Sir Francis Drake and Cumberland workings and the down-dip continuity of the Sir Francis Drake ore shoot (Magner and Winward, 1996). Seven diamond drillholes were completed in the Inkerman prospect for a total of 853.8 m, and five were drilled at Supreme for a total of 607.1 m (Dunphy, 1998).

MMCL/GRD Macraes resumed exploration activities in the Auld Creek area from 1997, collecting a further 129 wacker samples. The sampling overlapped the southern part of the area in which CRAE and MMCL had previously conducted auger soil sampling programmes. No further work was carried out at Auld Creek by MMCL/GRD Macraes (McCulloch, 2023b).

Prior to 2009, mapping over the Reefton–Lyell Goldfield had been completed on a prospect basis, with high-density mapping on several key prospects, including over the Cumberland permit area (Rattenbury, 1994; Stewart, 1996; Maw, 2000; McCulloch, 2023a). In 2006, OGL drilled 24 diamond drillholes for a total of 3,242.7 m to test the lateral and down-dip continuity of the Supreme deposit (Whetter, 2006). The results were considered positive and had the potential for an open-pit target. Further drilling in 2008 included the completion of six diamond drillholes for a total of 613.6 m to better constrain the geology and resource (Whetter and McCulloch, 2008).

In 2009, OGL, assisted by external contractors, began re-mapping the entirety of the tenement package at a regional scale and completed prospect-scale mapping around many of the historical mines. In 2009–2012, mapping was carried out in the Capleston, Crushington, and Caledonia prospect areas. The field mapping was mostly conducted within the headwaters of the Waitahu River and Larry's Creek and aimed to determine structural facing (bedding/cleavage relationships), younging, and any new observations of faults or minor quartz veins (Allibone, 2010; Allibone et al., 2012; Jongens et al., 2012; Gardener, 2013).

OGL carried out exploration work in the Auld Creek area from 2007, undertaking a diamond drilling programme (three drillholes for a total of 168 m) to test geochemical anomalies detected previously in the south of the permit area. These anomalies were considered to reflect a northern extension of the nearby Globe Progress mineralisation, and the drilling intercepted weakly anomalous zones. In 2008, OGL shifted its focus towards Auld Creek North, completing field mapping and wacker soil drilling programmes in 2010. These activities extended the surface geochemical data 400 m north of the soil traverses conducted by CRAE. OGL also completed field mapping and outcrop and float sampling across the southern Auld Creek area in 2010 (McCulloch, 2023b).

Also in 2010, OGL collected 477 wacker soil samples over a 12.5 m × 25 m grid around the Big River Mine and from five lines around the Big River South and St George mines (McCulloch, 2023c). OGL also carried out structural mapping and collected a total of 155 mullock, rock-chip, and float samples over two trenches for a total of 19 m (Hills, 2011). OGL followed up in 2011–2012 with the collection of a further 533 wacker soil samples from the area northwest of Big River and the Big River North prospect (McCulloch, 2023c). OGL also completed a programme of diamond drilling over the Big River tenement, including 19 drillholes for a total of 4,106 m, 12 of which were drilled in the Big River historical mine area and seven in the Big River South and St George prospects. The drilling intercepted a moderately steep, northeast dipping structure of variable mineralisation in a sheared-out anticline hinge zone in the Big River mine area, and several holes intersected high-grade mineralisation to the southeast of the mine (McCulloch, 2023c).

Between 2010 and 2011, OGL drilled seven diamond drillholes for a total of 801.7 m off three pads in an area of Auld Creek where trenching results had indicated geochemical anomalies consistent with the Fraternal zone; each drillhole returned significant Au. Upon conclusion of the exploration. A further three southwest dipping diamond drillholes in the Fraternal prospect were completed in 2013 for a total of 513.1 m. The drilling was intended to test the depth extent of the northern and central parts of the Fraternal Au mineralisation; however, the results were disappointing. OGL concluded that the mineralisation thins to the north at depth but remains open to the south, and the previous Inferred resource was not updated based on this information (McCulloch, 2023b).

OGL also conducted a review of regional geophysical data alongside reconnaissance mapping and rock-chip sampling in the Lyell Goldfield in 2012–2014. However, most of the work was conducted outside the area of EP 60479, and no significant Au results were reported from rock-chip samples (Reefton Resources Pty Ltd, 2023c).

In 2014, OGL completed an additional programme of diamond drilling at Supreme in the Cumberland area to test for potential offset of the Globe Progress orebody on the western side of the Chemist Shop Fault. Two diamond drillholes for a total of 480.8 m were collared in the Brunner Coal Measures to the south of Supreme; the second hole reached the Supreme lode. OGL ceased exploration in the area in 2014 with the closure of the Globe Progress pit (McCulloch, 2023a).

6.3.4.1.1 Supreme Drilling

Drilling has been conducted at the Supreme prospect in the Cumberland permit area by MMCL and OGL between 1997 and 2014 (Figure 6-7, Table 6-3). Drilling by MMCL used HQ diameter diamond core and a Longyear 38 diamond drill rig. OGL typically used PQ for collar sections then HQ to total depth, with NQ used in some locations due to ground conditions. All drilling was conducted using triple-tubed wireline core barrels, with CS1000, LF70, or HD 900 heli-rigs.

OGL collected oriented core for all 2006 and 2008 drillholes using Ezimark orientation tools. OGL also collected orientation data in 2014; however, the system used was not reported. Downhole surveys for the 2006 and 2008 drillholes were based on 50-m intervals using a digital downhole tool, whereas a 30-m survey interval was used in 2014 with the RELEX EZ-TRAC survey tool.

Table 6-3: Supreme drillhole details.

Drillhole	Easting (NZTM)	Northing (NZTM)	Elevation (m)	Length (m)	Azimuth (º)	Dip (º)
97RDD012	1509456.292	5328576.255	549	121.5	330	-60
97RDD013	1509521.41	5328576.115	518	88.4	360	-60
97RDD014	1509398.2	5328458.579	553	89.9	270	-50
97RDD020	1509377.091	5328567.886	583	161.85	294.5	-65
RDD0008	1509357.087	5328526.615	583	160.7	270	-60
RDD0009	1509373.24	5328405.949	573	83	270	-60
RDD0010	1509374.073	5328405.929	573	40.6	270	-60
RDD0013	1509413.249	5328562.198	574	166.9	320	-60
RDD0014	1509480.082	5328558.648	543	70.1	360	-60
RDD0016	1509480.255	5328557.299	543	100.7	22	-90
RDD0017	1509411.831	5328560.568	574	122.4	22	-90
RDD0018	1509412.235	5328559.718	574	181.3	160	-65
RDD0019	1509526.662	5328503.21	503	142.35	320	-60
RDD0020	1509526.3	5328503.85	504	155.9	270	-60
RDD0021	1509526.316	5328504.359	504	118.5	360	-55
RDD0022	1509526.3	5328504.359	504	125.4	22	-90
RDD0023	1509526.3	5328504.359	504	145.15	22	-90
RDD0024	1509381.445	5328620.276	579	163.6	272	-60
RDD0025	1509360.063	5328527.185	582	122.1	22	-90
RDD0026	1509442.695	5328477.595	542	133.3	10	-55
RDD0027	1509442.25	5328476.155	542	140.9	320	-55
RDD0028	1509442.052	5328475.805	542	157.3	270	-55
RDD0029	1509472.916	5328446.461	521	158.2	350	-65
RDD0030	1509471.366	5328448.651	521	211.7	270	-65
RDD0031	1509471.984	5328446.291	522	190.5	22	-90
RDD0060	1509440.642	5328548.95	562	91.2	320	-60
RDD0061	1509441.532	5328547.721	561	100.3	0	-90
RDD0062	1509392.338	5328515.717	568	131	60	-80
RDD0063	1509391.62	5328515.217	569	130.9	320	-60
RDD0064	1509394.069	5328516.627	567	160.2	230	-70
SUP002	1509577.259	5328378.725	523	286.5	330	-65

Table 6-4: Significant drilling intercepts for Supreme, full mineralised zone composites (1.5 g/t Au cut-off).

Hole ID	From (m)	To (m)	Downhole Interval (m)	Au (g/t)	Mineralised Zone
97RDD012	20	28	8	1.52	Supreme MZ
97RDD013	30	40.3	10.3	2.16	Supreme MZ
97RDD014	33	36	3	3.64	Supreme MZ
97RDD020	100	109	9	1.62	Rainy Reef
RDD0009	17	18	1	2.05	Supreme MZ
RDD0013	37	47	10	3.52	Supreme MZ
RDD0013	59	71	12	4.04	Supreme MZ
RDD0014	33	44	11	2.23	Supreme MZ
RDD0016	43	44	1	2.47	Supreme Upper
RDD0017	26	40	14	3.22	Supreme MZ
RDD0018	81	90	9	1.58	Supreme MZ
RDD0018	122	151	29	2.56	Supreme MZ
RDD0019	62.1	65	2.9	3.46	Supreme MZ
RDD0020	73	79	6	2.68	Supreme MZ
RDD0021	56	68	12	2.33	Supreme MZ
RDD0022	112	125.4	13.4	2.17	Supreme MZ
RDD0022	110	111	1	4.89	Supreme MZ
RDD0023	105	107	2	16.60	Supreme MZ
RDD0025	79	98	19	4.08	Supreme MZ
RDD0026	81	96	15	1.68	Supreme MZ
RDD0028	136	147	11	1.63	Rainy Reef
RDD0028	66	71	5	2.45	Supreme MZ
RDD0030	127	130	3	1.75	Supreme MZ
RDD0060	38	41	3	2.04	Supreme MZ
RDD0061	48	66	18	2.30	Supreme MZ
RDD0064	80	86	6	1.51	Supreme MZ

6.3.4.2 2005–2012 (Auzex Resources Pty Ltd)

Auzex Resources completed a 1.1 km × 2.2 km grid-based soil-sampling programme centred over the historical Alpine United mine in the Lyell Goldfield. A total of 881 soil samples were collected and assayed for 11 elements. The results indicated the presence of a strong, north trending, semi-continuous belt of anomalous As ± Au. Six diamond drillholes were drilled at two prospects for a total of 748 m to target Au in soil anomalies, with the best assay results being 2 m at 4.6 g/t Au from drillhole ARD4.

6.3.4.3 2009–2013 (Kent Exploration Ltd)

A portion of EP 60479 in the Lyell Goldfield was previously part of a wider exploration permit held by Kent. However, activities were focussed on prospects in the Mokihinui River area, and little exploration was conducted within the Lyell Goldfield (Reefton Resources Pty Ltd, 2023c).

Kent was granted PP 51589 in July 2009 over an area of 26.69 km^2 around Alexander River. The permit was later extended over a smaller duration but was surrendered in July 2013. During its tenure, Kent completed geological and structural mapping and surface rock-chip sampling around the mine areas, mapped trenches and adits, and re-sampled CRAE's trenches for a total of 163 samples from 18 trenches/adits. Kent also drilled nine surface diamond drillholes for a total of 1,322 m. The drillholes did not target any known mineralisation and did not intersect any significant mineralised horizons (Grove and Binks, 2023).

6.3.4.4 2011 (Government Regional Geophysical Surveys)

In 2011, NZP&M, on behalf of the New Zealand government (the Crown), commissioned an airborne magnetic and radiometric survey of the West Coast of the South Island (Vidanovich, 2013). The West Coast Airborne Geophysical Survey, covering the Reefton–Lyell and Paparoa goldfields, was conducted between February 2011 to March 2013. Australian geophysical company Thomson Aviation Ltd conducted the surveys using helicopters flown by Central South Island Helicopters Ltd. The geophysical equipment consisted of a Geometrix G822A Caesium Vapour magnetometer and a Radiation Solutions RS 500 Gamma Ray Spectrometer, coupled to NaI Crystal packs, with a combined volume of 33.6 L (Vidanovich, 2013). The survey was flown on a 110–290° bearing at a 200-m line spacing and a target 50-m ground clearance. Orthogonal tie lines were flown every 2 km. The data collected were processed to create levelled grids in ER Mapper and GeoTIFF formats at 40-m cell resolution. Radiometric grids for potassium (K), thorium (Th), U, and total count were included. A digital terrain model was also supplied based on elevation data acquired during the survey (Figure 6-2) (Vidanovich, 2013).

The aeromagnetic grids produced during the NZP&M survey (Figure 6-2 and Figure 6-3) included several different industry-standard variants, including total magnetic intensity (TMI), reduced to pole (RTP), first vertical derivative (1VD), second vertical derivative (2VD), analytic signal (AS), and automatic gain control (AGC).

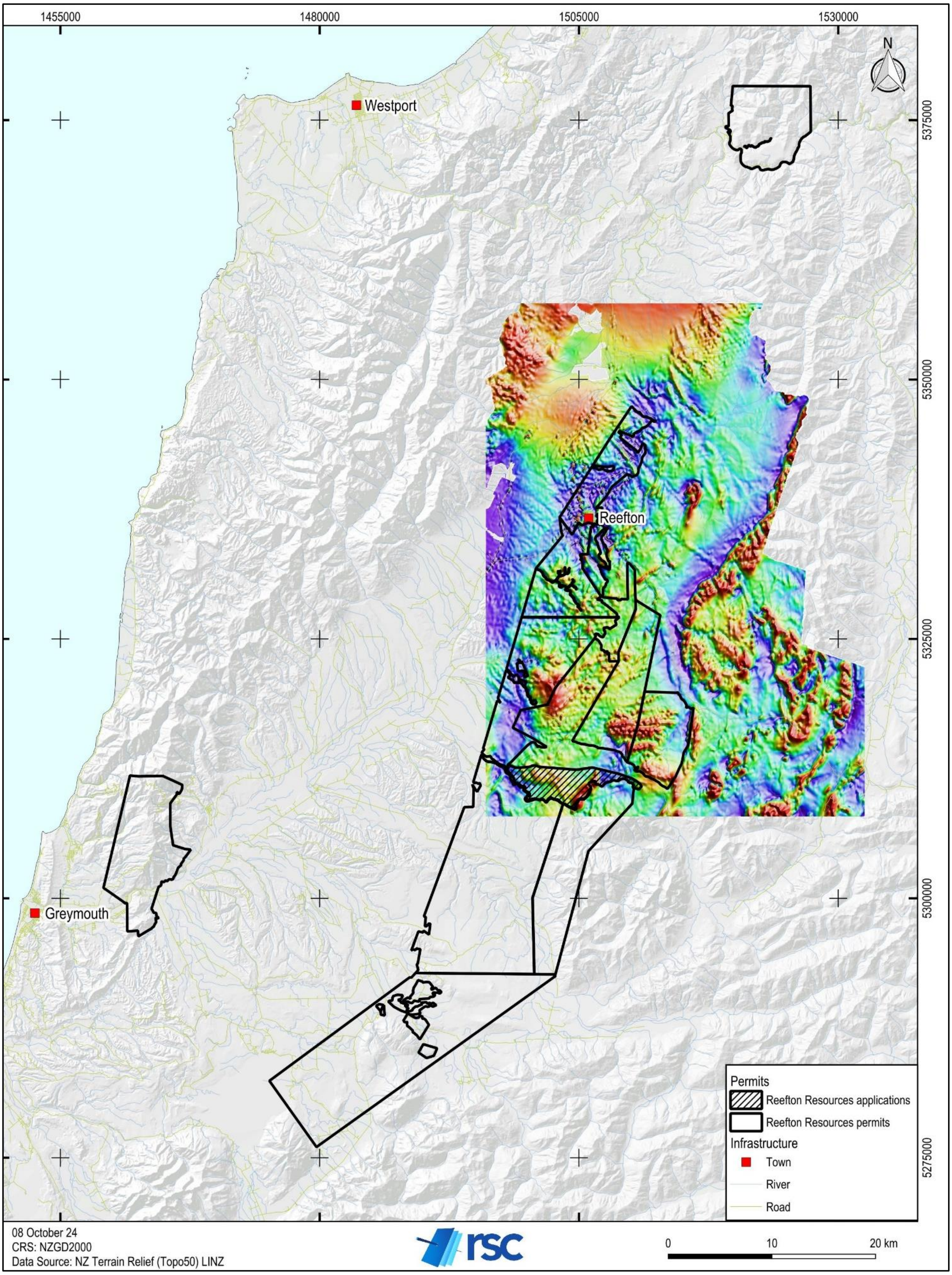


Figure 6-2: Magnetics image (AS) over the Reefton Goldfield.

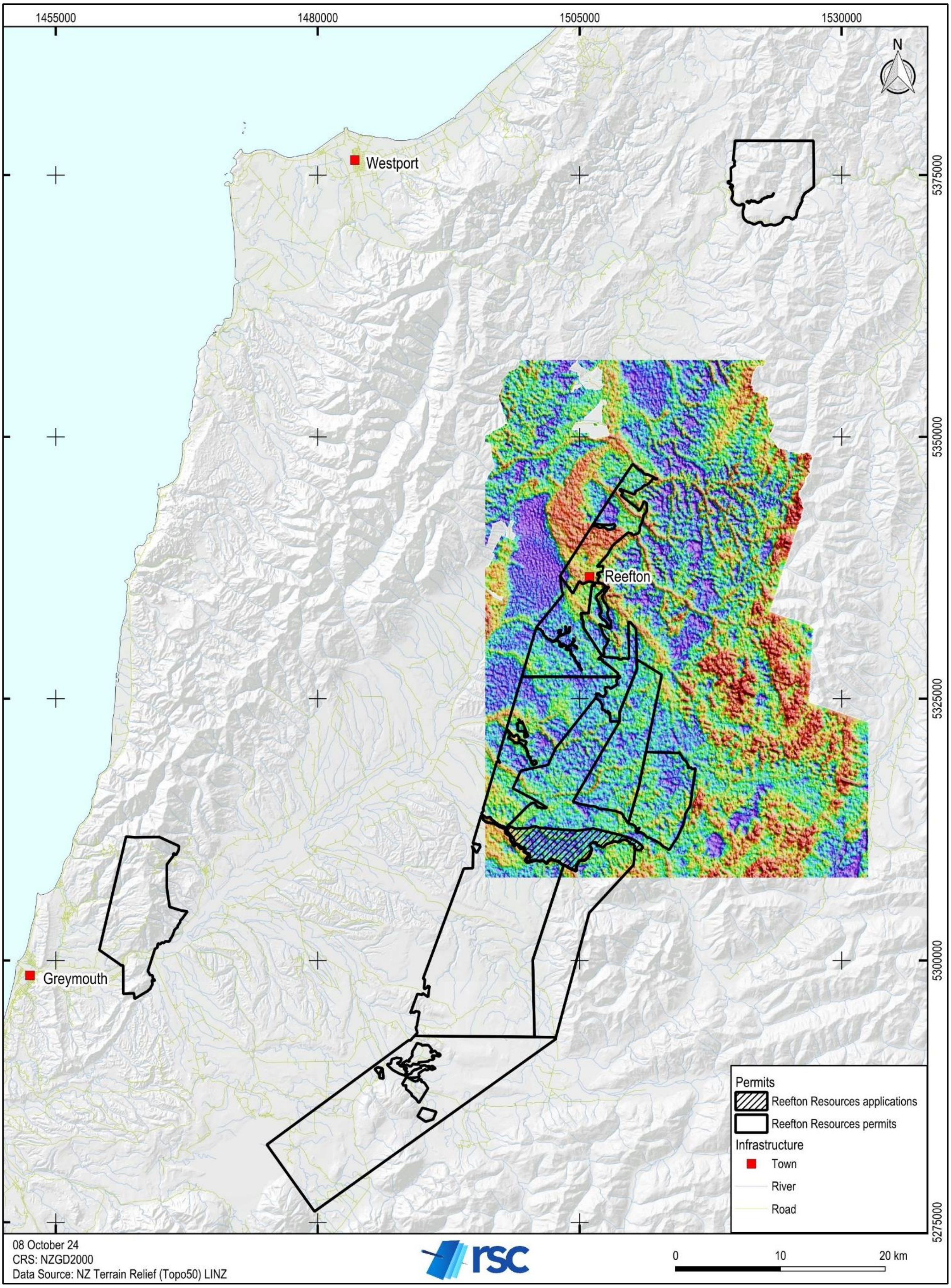


Figure 6-3: Radiometric grid of U intensity.

6.3.4.5 2016–2018 (Tectonex Ltd)

Tectonex Ltd conducted stream-sediment, float, and rock-chip sampling in the Lyell Goldfield, targeting intrusive-related mineralisation in the headwaters of Lyell Creek. The sampling indicated a number of Cu, Mo, Pb, Au, and As anomalies; however, the permit was relinquished before follow-up (Reefton Resources Pty Ltd, 2023c).

6.4 Historical Mineral Resource Estimates

In 2023, RRPL reported historical resource estimates (‘historical estimates’) for gold resources at Alexander River (Grove and Binks, 2023), Big River (McCulloch, 2023c), and the Supreme prospects in the Cumberland permit area (McCulloch, 2023a) and in September 2024 Au/Sb resources for the Auld Creek prospect in the Golden Point permit area (McCulloch, 2023b). These historical estimates are further detailed below.

6.4.1 Alexander River

In January 2023, RRPL commissioned Measured Group Pty Ltd (Measured Group) to conduct a historical estimate for the Alexander River Au prospect. Measured Group undertook a site visit and scrutinised historical and current RRPL data, including the geological database, QA/QC procedures and results, laboratory results, topographic surfaces, and geological interpretations, and reported the historical estimate at 1.07 Mt and 4.95 g/t for 170 koz Au at a 1.5 g/t cut-off (Table 6-5; Figure 6-4).

Measured Group completed geological domaining using Leapfrog, with a nominal 0.5 g/t Au for top and bottom intercepts. LiDAR was used as a DTM. Depletion volumes were used in areas with known mine workings at Alexandra River. Measured Group completed the estimation using ordinary kriging (OK) with three passes and compared this with both inverse distance and nearest neighbour estimation. The historical estimate was reported at a cut-off grade of 1.5 g/t Au, and RRPL considered this appropriate for an underground mining operation.

Required disclosure under Section 2.4 of NI 43-101 (Disclosure of Historical Estimates)

- The 2023 Alexander River historical estimate was reported in accordance with the JORC Code (JORC Code, 2012) and included in a Competent Person’s report with an effective date of 31 January 2023 (Grove and Binks, 2023).
- The 2023 Alexander River historical estimate is considered reliable and relevant by the QP (Abraham Whaanga), as it was the maiden resource estimate for the Alexander River prospect. However, it has been superseded by the current MRE disclosed in Section 14 of this Report.
- The 2023 Alexander River historical estimate was reported at a cut-off grade of 1.5 Au g/t.
- The 2023 Alexander River historical estimate uses similar categories to those set out in section 1.2 of NI 43-101 but was classified using the JORC Code (2012), in which resource classifications are similar to the resource classifications under the CIM Definition Standards (May 2014).
- The QP (Abraham Whaanga) has not done sufficient work to classify the 2023 Alexander River historical estimate as current mineral resources, and RUA is not treating the historical estimate as current mineral

resources, as it has been superseded by the current MRE disclosed in Section 14 of this Report. The purpose of stating this historical estimate in the Report is to fully disclose past historical estimates for the Prospect.

- The QP (Abraham Whaanga) is not aware of any other recent historical estimates for the Alexander River prospect.

To improve the classification of the historical estimate, Measured Group recommended:

- continued metallurgical studies for Au recovery factors;
- additional diamond drilling and core density sampling;
- closer drillhole spacing for future diamond drilling programmes, with additional mineralisation intercepts in high-grade zones; and
- an underground mining scoping and optimisation study to determine the optimal cut-off grade and identify appropriate mining methods.

Table 6-5: Alexander River prospect historical estimate, as of 31 January 2023 (Grove and Binks, 2023).

Prospect	Classification	Zone	Tonnes (kt)	Au (g/t)	Contained Au (oz)
Bruno 1	Inferred	Oxide	90.1	5.42	15,694
		Fresh	0.7	8.90	211.21
Bruno 2	Inferred	Oxide	8.3	6.96	1,855
		Fresh	2.2	2.57	186
Bull East	Inferred	Oxide	239.7	2.68	20,636
		Fresh	82.6	2.17	5,770
Loftus-McKay	Inferred	Oxide	58.6	5.18	9,757
		Fresh	136.3	5.32	23,305
McVicar East	Inferred	Oxide	40.7	5.86	7,672
		Fresh	-	-	-
McVicar West	Inferred	Oxide	-	-	-
		Fresh	407.1	6.46	84,515
Total	Inferred	Oxide	437.3	3.96	55,614
		Fresh	629.0	5.64	113,987
			1066.3	4.95	169,601

Notes:
1. *All figures are rounded to reflect appropriate levels of confidence.*
2. *Differences in totals may occur owing to rounding.*
3. *Reported in accordance with the JORC Code (2012).*
4. *The QP (Abraham Whaanga) has not done sufficient work to classify the historical estimate as current mineral resources, and RUA is not treating the historical estimates as current mineral resources.*

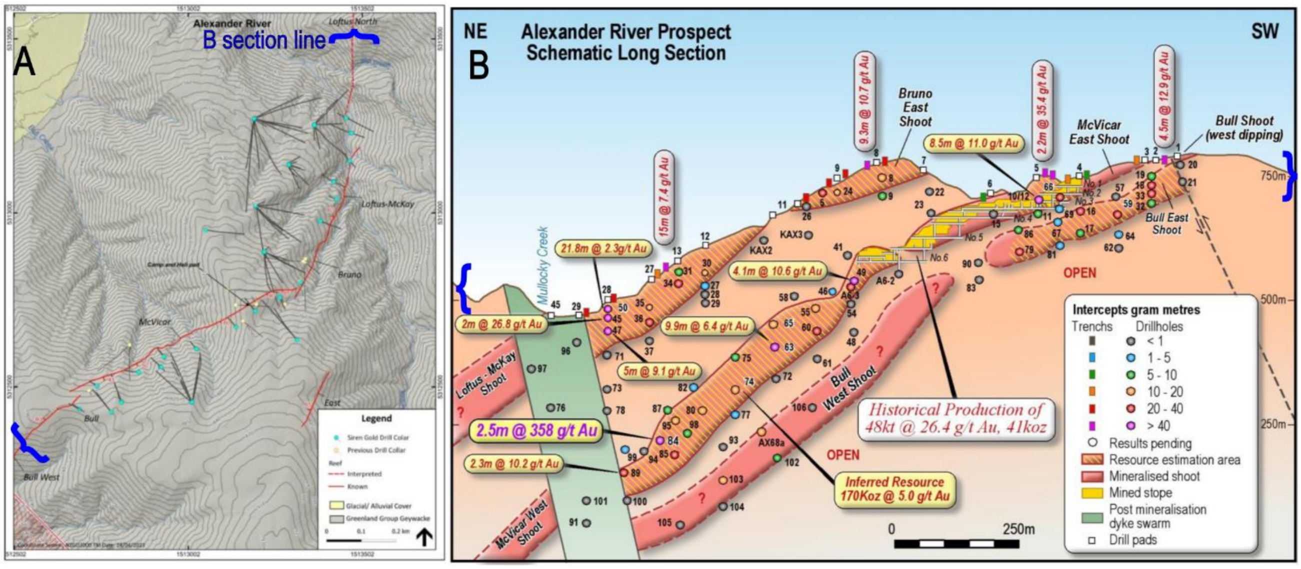


Figure 6-4: Alexander River prospect. A) Plan view of drillholes and reef placement. B) Schematic long-section through the prospect. Modified after Reefton Resources Pty Ltd (2023a).

6.4.2 Auld Creek (Golden Point)

In September 2024, RRPL completed a historical estimate for the Auld Creek prospect in the Golden Point permit area with an effective date of 17 September 2024 (Siren Gold Limited, 2024b). The historical estimate was assessed using historical MMCL and OGL drilling data alongside RRPL drillhole and trench data, including a geological database, QA/QC procedures and results, laboratory results, topographic surfaces, and geological interpretations.

The Auld Creek Prospect is situated between the Globe Progress mine, which historically produced 418 k oz @ 12.2 g/t Au, and the Crushington group of mines, which produced 515 koz @ 16.3 g/t Au. Recent mining of an open pit by OGL yielded an additional 600 koz Au from lower-grade remnant mineralisation around the historical Globe Progress mine. The prospect represents high-grade Au-Sb mineralisation that may be offset along northeast striking faults to the west between Globe Progress and Crushington. Soil sampling and trenching at Auld Creek by RRPL has identified an As soil anomaly over a strike length of 700 m that clearly defines the Fraternal and Bonanza mineralisation. The Fraternal zone is subdivided into the Fraternal and Fraternal North zones, and Bonanza is subdivided into the Bonanza and Bonanza East zones. The steeply east dipping Bonanza East zone is inferred to link the other west dipping mineralised zones.

RRPL reported a historical estimate in accordance with the JORC Code (2012), incorporating geological and assay data from 27 drillholes for a total of 3.340 m and 11 trenches for a total of 107.7 m. RRPL based the historical estimate on average metal prices of USD 2,160 per ounce of Au and USD 15,625 per tonne of Sb. Metallurgical recoveries of 85% were used for both Au and Sb based on metallurgical test-work results (Siren Gold Limited, 2024a). RRPL's historical estimate involved geological interpretation and wireframing in Leapfrog Geo based on AuEq, hard-boundary compositing in Leapfrog using the Edge Module, variography and OK in Leapfrog Edge, and block-model estimation in Leapfrog. Gold and Sb were estimated individually, and the AuEq was calculated based on the results. Composites for each element were based on 1-m composites, and outlier grades were assessed by reviewing composite histograms of Au grades. RRPL identified extreme outlier grades for Fraternal, and these were controlled using the Leapfrog outlier tool. Other variables and domains determined that no top-cut was required (Siren Gold Limited, 2024b). The historical estimate, with a cut-off of 1.5 g/t AuEq is detailed in Table 6-6 and Figure 6-5.

Table 6-6: Auld Creek Prospect in-situ MRE at a 1.5 g/t cut-off, as of 2024 (Siren Gold Limited, 2024b).

Zone	Classification	Tonnes (kt)	Au (g/t)	Contained Au Ounces (koz)	Sb (%)	Sb (kt)	AuEq (g/t)	Conatin AuEq (koz)
Fraternal	Inferred	614.1	3.91	77.2	1.41	8.7	7.10	104.2
Bonanza East	Inferred	234.4	3.64	27.4	2.49	5.8	9.25	69.7
Total	**Inferred**	**848.5**	**3.84**	**104.6**	**1.71**	**14.5**	**7.69**	**209.9**

Notes:
1. *All figures are rounded to reflect appropriate levels of confidence.*
2. *Differences in totals may occur owing to rounding.*
3. *Reported in accordance with the JORC Code (2012).*
4. *The QP (Abraham Whaanga) has not done sufficient work to classify the historical estimate as current mineral resources, and RUA is not treating the historical estimates as current mineral resources.*

Required disclosure under Section 2.4 of NI 43-101 (Disclosure of Historical Estimates)

- The 2024 Auld Creek historical estimate was in accordance with the JORC Code (JORC Code, 2012) and included in a Competent Person's report with an effective date of 17 September 2024 (Siren Gold Limited, 2024b).
- The 2024 Auld Creek historical estimate is considered reliable and relevant by the QP (Abraham Whaanga), as it was an updated resource estimate. However, it has been superseded by the current MRE disclosed in Section 14 of this Report.
- The 2024 Auld Creek historical estimate was reported at a cut-off grade of 1.5 AuEq g/t.
- The 2024 Auld Creek historical estimate uses similar categories to those set out in section 1.2 of NI 43-101 but was classified using the JORC Code (2012), in which resource classifications are similar to the resource classifications under the CIM Definition Standards (May 2014).
- The QP (Abraham Whaanga) has not done sufficient work to classify the 2024 Auld Creek historical estimate as current mineral resources, and RUA is not treating this historical estimate as current mineral resources, as it has been superseded by the current MRE disclosed in Section 14 of this Report. The purpose of stating this historical estimate in the Report is to fully disclose past historical estimates for the prospect.
- The QP (Abraham Whaanga) is not aware of any other recent historical estimates for the Auld Creek deposit.

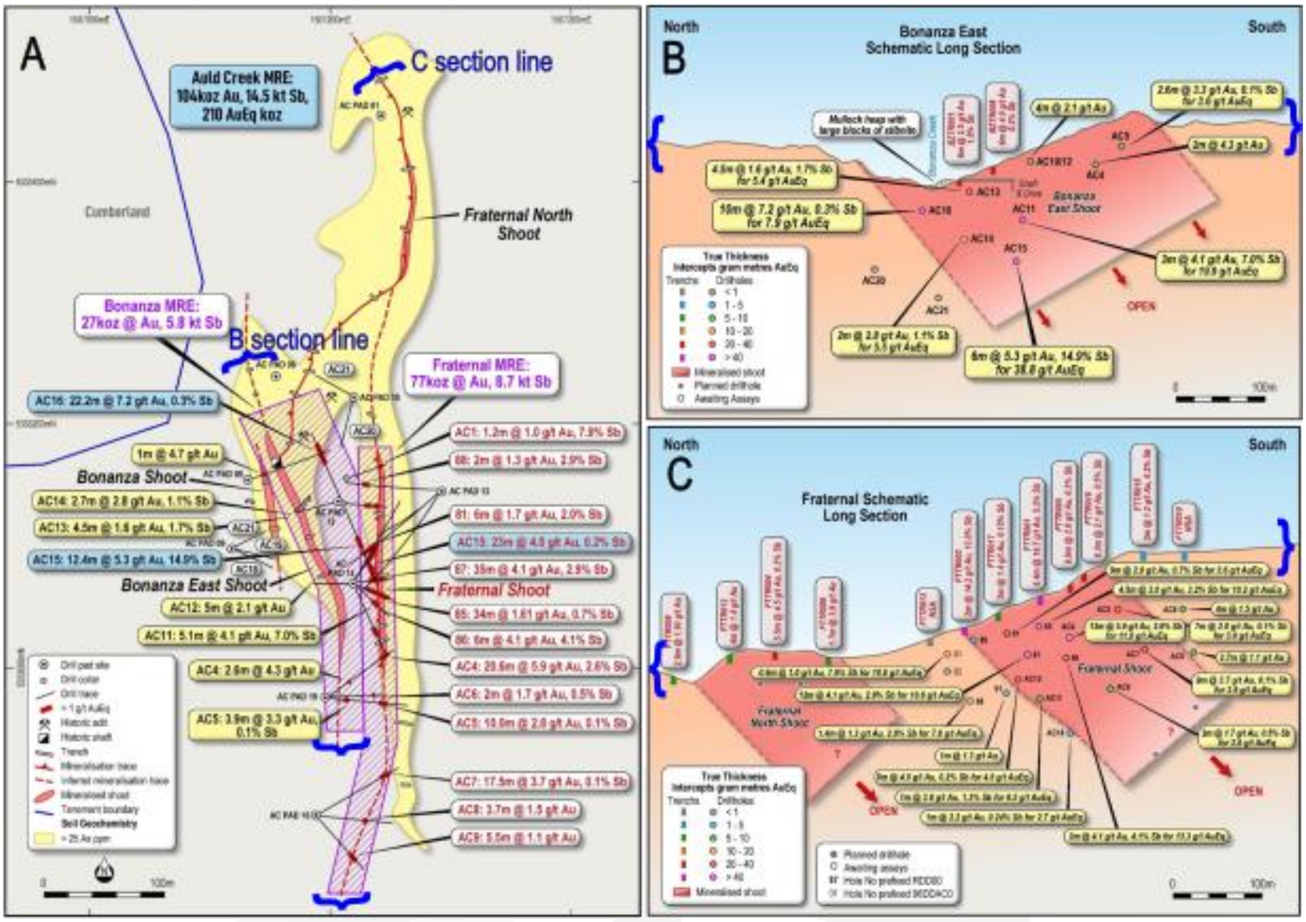


Figure 6-5: Auld Creek prospect. A) Drillhole plan and MRE limit. B) Schematic long-section through Bonanza East. C) Schematic long-section through Fraternal. Modified after Siren Gold Limited (2024b).

6.4.3 Big River

In April 2023, RRPL completed a historical estimate for the Big River Au prospect. Historical data from OGL and current data from RRPL were scrutinised by Raven, including a geological database, QA/QC procedures and results, laboratory results, topographic surfaces, and geological interpretations. The Big River historical estimate was reported at 0.834 Mt @ 3.94 g/t for 105.5 koz Au at a 1.5 g/t cut-off (Table 6-7; Figure 6-6).

The historical estimate covers three discrete areas: the A2 shoot, Shoot 4 Upper, and Shoot 4 Lower. Mineralisation in the east striking A2 shoot dips to the northwest, and the northwest striking Shoot 4 is located in the eastern part of the deposit and dips to the northeast. The historical estimate occurs along a shear system with a strike length of ~500 m, with mineralised quartz reefs (shoots) plunging gently to the north-northeast.

Raven completed the geological domaining using LeapFrog, with a nominal 0.5 g/t Au for top and bottom intercepts. LiDAR was used as a DTM. Depletion volumes were used in areas with known mine workings at Big River. Raven completed the estimation using OK with three passes, and the estimations were compared to both inverse distance and nearest neighbour estimation. The historical estimate was reported at a cut-off grade of 1.5 g/t Au, and RRPL considered this appropriate for an underground mining operation.

Table 6-7: Big River prospect historical estimate, as of 30 April 2023 (McCulloch, 2023c).

Zone	Classification	Cut-off (g/t)	Mt	Au (g/t)	Au (koz)
Shoot 4 Upper	Inferred	1.5	0.238	3.99	30.5
Shoot 4 Lower	Inferred	1.5	0.423	4.34	59.0
A2 Shoot	Inferred	1.5	0.173	2.87	16.0
Total	**Inferred**	**1.5**	**0.834**	**3.94**	**105.5**

Notes:
1. *All figures are rounded to reflect appropriate levels of confidence.*
2. *Differences in totals may occur owing to rounding.*
3. *Reported in accordance with the JORC Code (2012).*
4. *The QP (Abraham Whaanga) has not done sufficient work to classify the historical estimate as current mineral resources, and RUA is not treating the historical estimates as current mineral resources.*

Required disclosure under Section 2.4 of NI 43-101 (Disclosure of Historical Estimates)

- The 2023 Big River historical estimate was reported in accordance with the JORC Code (JORC Code, 2012) and included in a Competent Person's report with an effective date of 30 April 2023 (McCulloch, 2023c).
- The 2023 Big River historical estimate is considered reliable and relevant by the QP (Abraham Whaanga), as it was the maiden resource estimate for the Big River prospect. However, it has been superseded by the current MRE disclosed in Section 14 of this Report.
- The 2023 Big River historical estimate was reported at a cut-off grade of 1.5 Au g/t.
- The 2023 Big River historical estimate uses similar categories to those set out in section 1.2 of NI 43-101 but was classified using the JORC Code (2012), in which resource classifications are similar to the resource classifications under the CIM Definition Standards (May 2014).
- The QP (Abraham Whaanga) has not done sufficient work to classify the 2023 Big River historical estimate as current mineral resources, and RUA is not treating this historical estimate as current mineral resources, as it has been superseded by the current MRE disclosed in Section 14 of this Report. The purpose of stating this historical estimate in the Report is to fully disclose past historical estimates for the Prospect.
- The QP (Abraham Whaanga) is not aware of any other recent historical estimates for the Big River prospect.

To improve the classification of the historical estimate, Raven recommended:

- additional diamond drilling;
- research on ore controls and the structural setting of the deposit;
- closer drillhole spacing for future diamond drilling programmes, with additional mineralisation intercepts in high-grade zones;
- continued metallurgical studies for Au recovery factors; and
- an underground mining scoping and optimisation study to determine the optimal cut-off grade and identify appropriate mining methods.

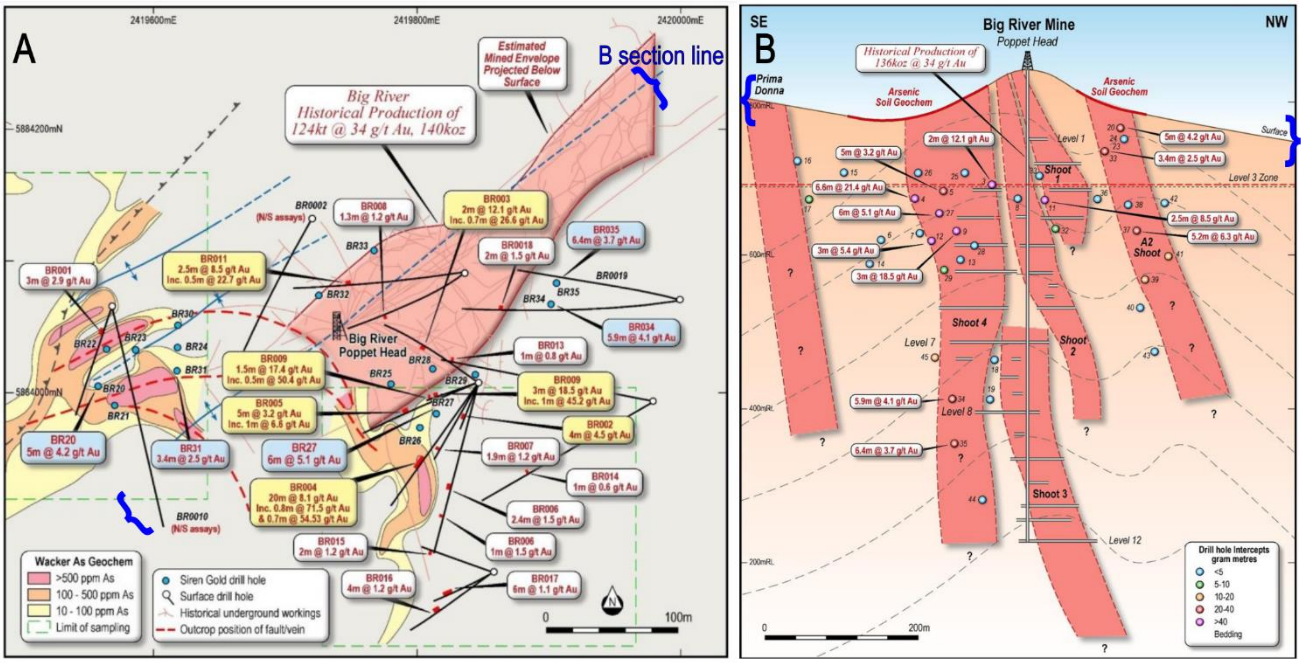


Figure 6-6: Historical production at Big River. A) Plan view of the Big River Mine, As soil geochemistry, and drillholes. Modified from Siren Gold Limited (2021) and Siren Gold Limited (2021); Reefton Resources Pty Ltd (2023b). B) Schematic long-section through the Big River system. Proposed drillholes are indicated by grey dots and exploration targets by ellipses. Modified from Siren Gold Limited (2023a).

6.4.4 Supreme (Cumberland)

In May 2023, RRPL completed a historical estimate for the Supreme Au prospect in the Cumberland permit area with an effective date of 31 May 2023. The historical estimate was completed using historical MMCL and OGL drilling data, including a geological database, QA/QC procedures and results, laboratory results, topographic surfaces, and geological interpretations. The Supreme historical estimate was reported at 1.15 Mt at 7.28 g/t for 103.4 koz Au at a 1.5 g/t cut-off (Table 6-8; Figure 6-7). The historical estimate covers the Supreme A domain. Raven completed geological domaining using LeapFrog, with a nominal 0.5 g/t Au for top and bottom intercepts. LiDAR was used as a DTM. Raven completed the estimation using OK with three passes, and the estimations were compared to both inverse distance and nearest neighbour estimation. The historical estimate was reported at a cut-off grade of 1.5 g/t Au, and RRPL considered this appropriate for an underground mining operation.

Table 6-8: Supreme Au prospect historical estimate, as of 31 May 2023 (McCulloch, 2023a).

Zone	Classification	Cut-Off (g/t)	Mt	Au (g/t)	Contained Au (koz)
Supreme A	Inferred	1.5	1.158	2.78	103.4

Notes:

1. *All figures are rounded to reflect appropriate levels of confidence.*
2. *Differences in totals may occur owing to rounding.*
3. *Reported in accordance with the JORC Code (2012).*
4. *The QP (Abraham Whaanga) has not done sufficient work to classify the historical estimate as current mineral resources, and RUA is not treating the historical estimates as current mineral resources.*

Required disclosure under Section 2.4 of NI 43-101 (Disclosure of Historical Estimates)

- The 2023 Supreme historical estimate was reported in accordance with the JORC Code (JORC Code, 2012) and included in a Competent Person's report with an effective date of 31 May 2023 (McCulloch, 2023c).
- The 2023 Supreme historical estimate is considered relevant by the QP (Abraham Whaanga), as it was the maiden resource estimate for the Supreme prospect. However, it has been superseded by the current MRE disclosed in Section 14 of this Report.
- The 2023 Supreme historical estimate was reported at a cut-off grade of 1.5 Au g/t.
- The 2023 Supreme historical estimate uses similar categories to those set out in section 1.2 of NI 43-101 but was classified using the JORC Code (2012), in which resource classifications are similar to the resource classifications under the CIM Definition Standards (May 2014).
- The QP (Abraham Whaanga) has not done sufficient work to classify the 2023 Supreme historical estimate as current mineral resources, and RUA is not treating this historical estimate as current mineral resources, as it has been superseded by the current MRE disclosed in Section 14 of this Report. The purpose of stating this historical estimate in the Report is to fully disclose past historical estimates for the Prospect.
- The QP (Abraham Whaanga) is not aware of any other recent historical estimates for the Supreme prospect.

To improve the classification of the historical estimate, Raven recommended:

- continued metallurgical studies for Au recovery factors;
- additional diamond drilling down dip and in the Rainy Reef systems, and core density sampling;
- research on ore controls and the structural setting of the deposit;
- closer drillhole spacing for future diamond drilling programmes, with additional mineralisation intercepts; and
- an underground mining scoping and optimisation study to determine the optimal cut-off grade and identify appropriate mining methods.

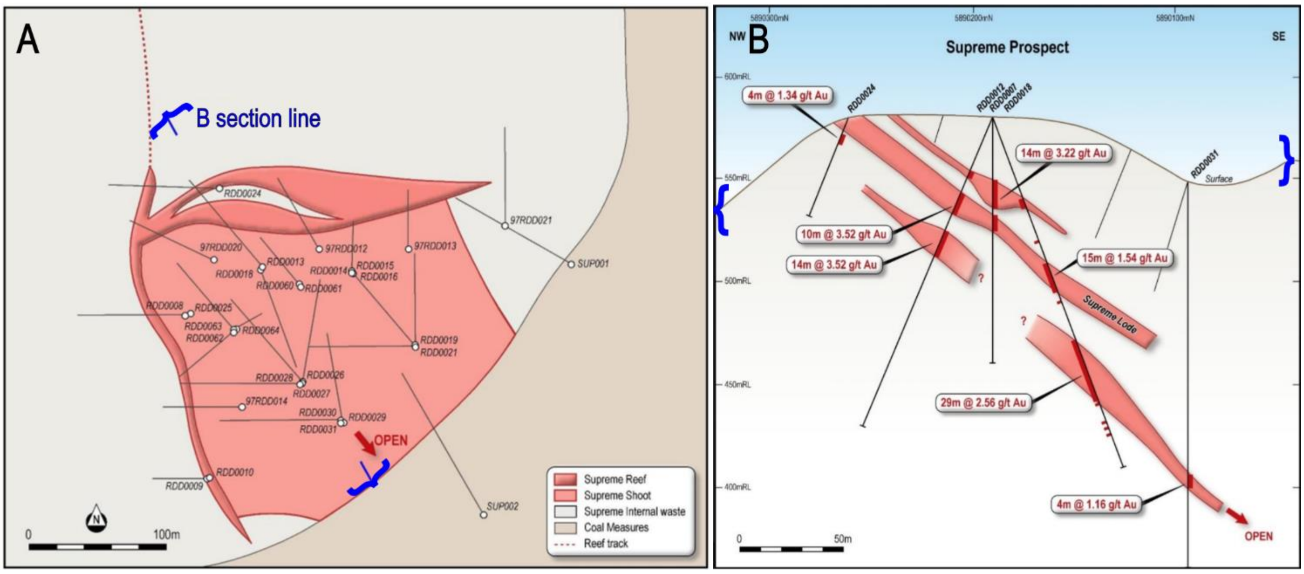


Figure 6-7: Supreme prospect. A) Schematic long-section through the Supreme deposit illustrating reef structures, drillholes, and geochemistry. Modified after McCulloch (2023a). B) Cross-section of the Supreme prospect illustrating drillhole and reef placement. Modified after Siren Gold Limited (2023d).

7. Geological Setting & Mineralisation

7.1 Regional Geology

New Zealand lies on the boundary between the Australian and Pacific plates, with the boundary being marked in the South Island by the Alpine Fault. The northwestern South Island comprises the West Coast Basin region, which is mainly composed of broad, approximately north trending belts of early Palaeozoic metasedimentary and volcanic rocks that terminate against the Alpine Fault in the southeast (Mortimer, 2004).

Situated west of the Alpine Fault, the Western Province of the South Island is composed of two north trending terranes (Figure 7-1). The westernmost Buller Terrane comprises variably metamorphosed terrestrial Ordovician to Devonian sandstones and mudstones of the Golden Bay, Greenland, and Reefton Groups, with no intercalated volcanic rocks. The eastern Takaka Terrane is more heterogeneous and is composed of Cambrian to Early Devonian siliciclastic, carbonate, and volcanic rocks. The two terranes amalgamated in the Devonian (Nathan et al., 2002) and are in fault contact along the Anatoki Thrust. The tectonostratigraphic terranes are bordered to the east by the Median Batholith, which comprises plutons of the Darrian, Rahu, and Separation Point suites. The relatively smaller Jurassic Kirwans Dolerite lies within the Buller Terrane, and the typically contiguous Devonian–Carboniferous Karamea-Paparoa and Late Cretaceous Hohonu batholiths are emplaced entirely within rocks of the Western Province. These basement rocks were variably deformed and metamorphosed to amphibolite-granulite facies during the Devonian–Cretaceous, with the highest grades being recorded in gneisses of the Pecksniff Metasedimentary Gneiss and the Victoria Paragneiss in the Paparoa and Victoria ranges (Figure 7-1) (Nathan et al., 2002).

Several fault-bounded sedimentary outliers are preserved in the Buller Terrane. These include typically well-indurated and stratified sequences of Devonian marine sandstone, limestone, and mudstone of the Reefton Group and Cretaceous non-marine sedimentary rocks of the Pororari Group, which are best represented by the coarse-grained, poorly sorted Hawks Craig Breccia (Nathan et al., 2002). These rocks are locally cut by Late Cretaceous, metre-scale lamprophyre, basalt, and trachyte intrusions (Adams and Nathan, 1978). The sedimentary outliers and igneous rocks are cut by a regional unconformity that separates the Late Cretaceous Paparoa Coal Measures on the western margin of the Buller Terrane from the overlying Eocene Brunner Coal Measures and other Neogene shallow- to deeper-marine cover rocks (Bassett et al., 2006). A regional unconformity separates the marine Neogene cover rocks from overlying Quaternary glacial and alluvial deposits (Laird and Shelley, 1974).

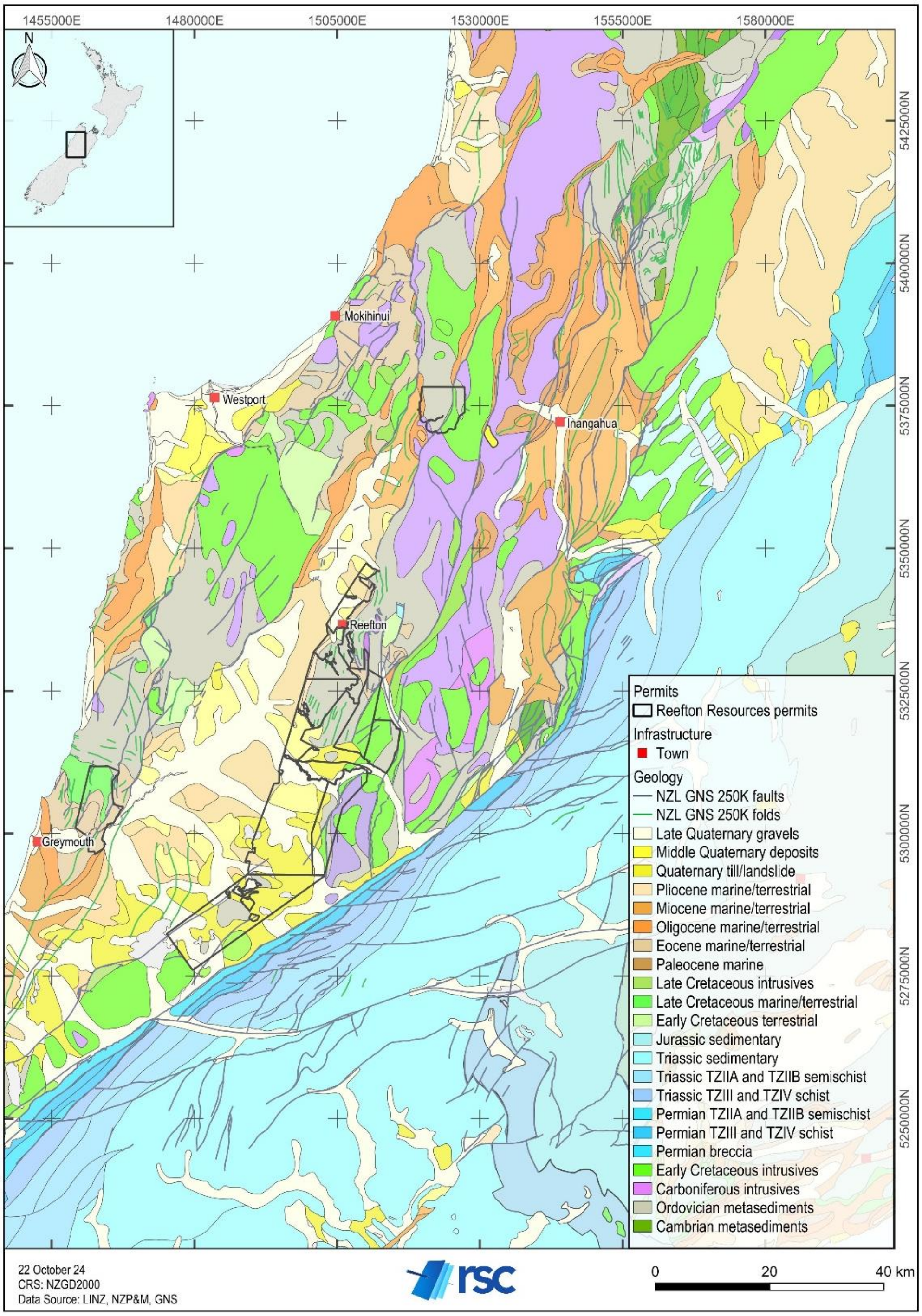


Figure 7-1: Regional geological map, QMAP 1:1,000,000 detail.

7.2 Local Geology

The Reefton–Lyell and Paparoa goldfields are hosted entirely within Ordovician rocks of the Greenland Group in the Buller Terrane of the West Coast Basin (Figure 7-2) (MacKenzie, 2014; Allibone et al., 2020). In the Reefton area, the Greenland Group forms an ~35 km × 15 km north-northeast trending belt that is bounded to the north and east by granitic plutons of the Late Devonian to Carboniferous Karamea and Cretaceous Rahu and Separation Point batholiths (Laird and Shelley, 1974; Tulloch, 1988; Muir et al., 1996). In the south and west, the belt is in fault contact with high-grade paragneisses of the Paparoa metamorphic core complex (Ritchie et al., 2015). The southern and western margins of the Greenland Group are typically obscured by Neogene sediments and Quaternary gravels, including thick accumulations that have infilled the down-faulted Grey-Inangahua Depression, a fault-bounded graben, to the west of Reefton (Nathan et al., 2002). Greenland Group rocks also underlie the Paparoa Goldfield area (Bassett et al., 2006) and the Lyell area, where they are intruded by or in fault contact with rocks of the Rahu, Separation Point, and Karamea suites (Cooper, 1989; Barry, 1996).

The Greenland Group is a turbiditic sequence of alternating greywackes and argillites that were deformed and metamorphosed to lower greenschist facies at ~450 Ma (Rb-Sr whole-rock; Adams, 2004) and/or during the amalgamation of the Buller and Takaka terranes at ~387 Ma (Turnbull et al., 2016). The sediments are dominated by greywacke, and beds are typically 0.2–2 m thick and separated by 10–30 cm thick layers of argillite. The greywackes typically comprise >50% quartz with lesser albite, partially recrystallised rock fragments, and muscovite, whereas the argillites are less quartz-rich and more micaceous (Milham and Craw, 2009). The metamorphic mineral assemblage consists of quartz, muscovite, albite, chlorite, titanite, calcite, and/or Mg-Fe carbonate and epidote. Despite undergoing metamorphism and several phases of deformation, the Greenland Group rocks preserve primary sedimentary features, including graded bedding, cross-bedding, load casts, and flame structures. Diagenetic ankerite spots are also preserved and delineate the original bedding in some of the finer-grained argillites (Laird and Shelley, 1974; Christie and Brathwaite, 2003).

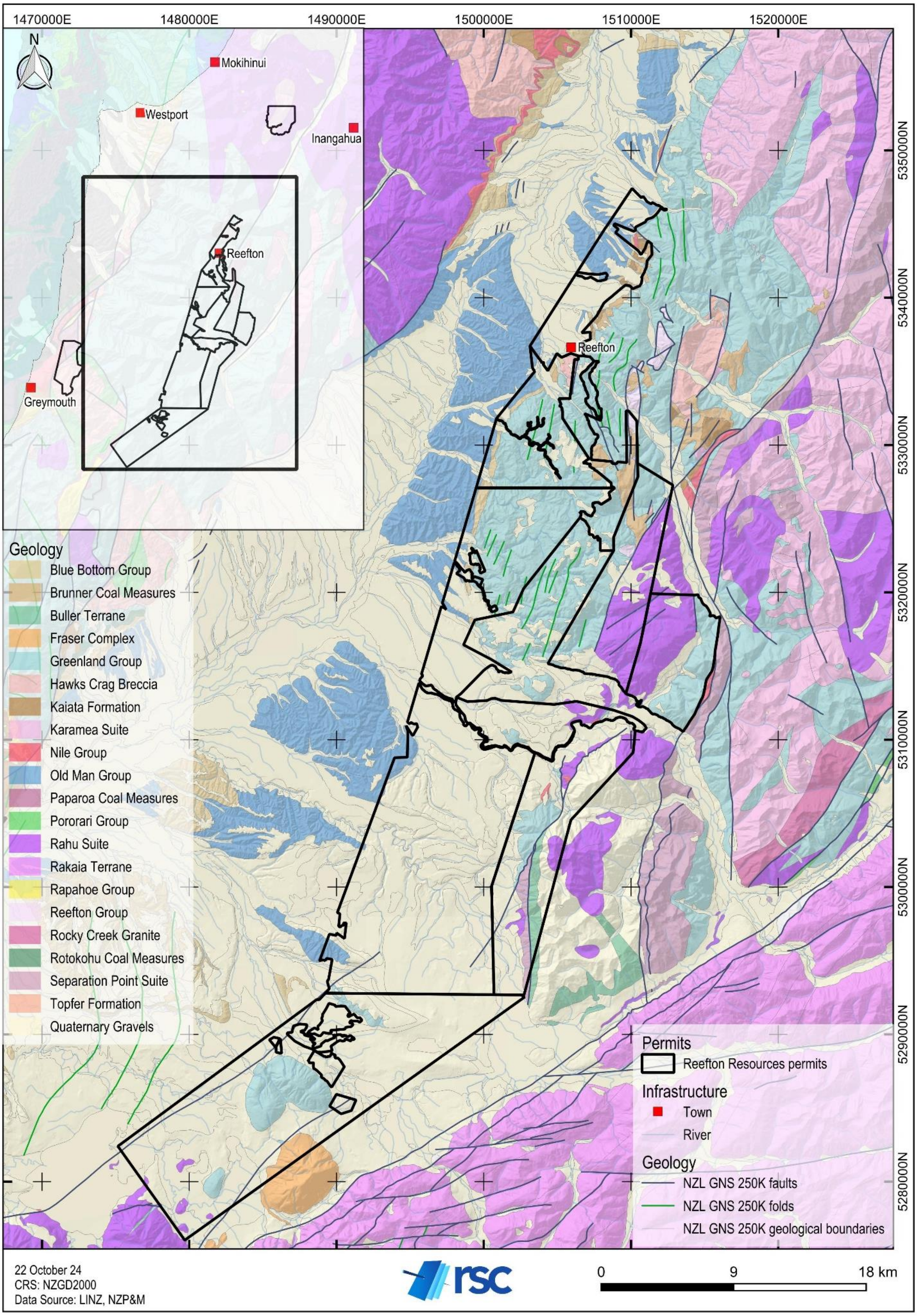


Figure 7-2: Map of geological units in the Reefton Area. QMAP 1:250,000.

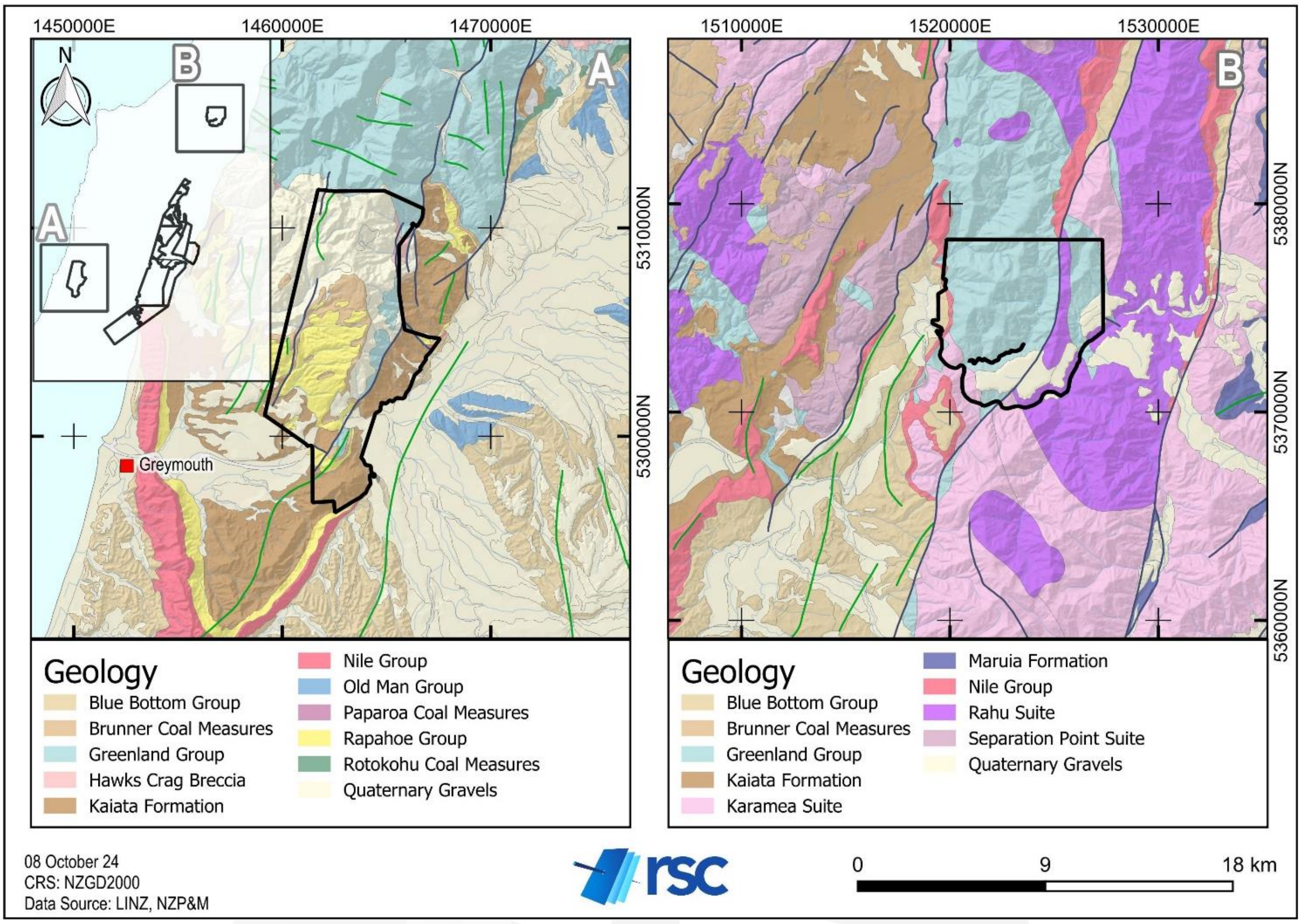


Figure 7-3: Map of geological units in the (A) Paparoa and (B) Lyell areas. QMAP 1:250,000.

7.3 Alteration

The Greenland Group rocks in the Paparoa and Reefton–Lyell goldfields are largely unaltered with no visible metasomatism, except in areas adjacent to quartz lodes (Christie and Brathwaite, 2003). Hydrothermal alteration associated with quartz lodes is marked by bleaching, magnesian siderite spots, disseminated arsenopyrite and pyrite, and thin carbonate, quartz, and sulphide veins. These features are associated with increasing concentrations of S, As, and Sb, with increasing Na and an overall decrease of Fe and Mg in K-mica, as a result of the replacement of albite by K-mica (Christie and Brathwaite, 2003; MacKenzie et al., 2016). Diagenetic ankerite spots are preserved locally in finer-grained argillites, and alteration typically occurs in zones extending up to 20 m around mineralised veins, where the original ankerite has been partially replaced by siderite; however, peak carbonate alteration index values occur as far as 150 m from quartz lodes in the Globe Progress and General Gordon prospects. In contrast, the alteration halo around the Blackwater deposit typically extends <5 m from the quartz lode, and peak carbonate alteration indices are within 10 and 2 m of the Merrijgs and Blackwater deposits, respectively (Christie and Brathwaite, 2003), although it has been reported that the alteration halo around the Birthday Reef may extend for <20 m from the Au-bearing veins (Hamisi et al., 2017). Silicification of the host rocks is typically minor and extends only a few centimetres from veins. Metamorphic porphyroblasts of arsenopyrite and lesser pyrite with minor Au enrichment are locally observed in metamorphic shear zones, and these sulphides may reflect late-metamorphic mobilisation of metamorphogenic fluids along regional-scale structures (MacKenzie et al., 2016). Disseminated arsenopyrite extends for up to 200 m in sheared host rocks at the Globe Progress deposit; however, extension over centimetre to metre scales is more typical for sulphides surrounding the smaller Au deposits (e.g. Wealth-of-Nations, Keep-it-Dark) (MacKenzie et al., 2016). For deposits with wider alteration haloes, a suite of geochemical indicators can be used to identify trends that are indicative of mineralisation. However, in deposits with smaller alteration haloes, geochemical indicators may be of more limited use during exploration (Christie and Brathwaite, 2003).

7.4 Structure

The structural architecture of the Greenland Group is characterised by moderate to steep dips and upright, km-scale F_2 folds that plunge gently to the north-northeast and north-northwest (Allibone et al., 2020). These folds formed during the later stages of regional metamorphism and prior to the emplacement of the Karamea Suite in the east (Gage, 1948; Rattenbury and Stewart, 2000; Turnbull et al., 2016). However, at least four other generations of deformation structures are recorded in the Greenland Group rocks (Allibone et al., 2020).

The Greenland Group rocks are cut by ~40-km-long, north-northeast striking brittle-ductile shear zones (D_{2B}/D_3) that run subparallel to the axial planes of F_2 folds and dip ~45° west to near vertical. Locally, these shear zones mark changes in the younging direction, indicating that they are developed in the hinges of F_2 folds, and in other areas they juxtapose structurally distinct domains with bedding that dips steeply on one side and gently on the other. Shear zones also occur midway between the axial planes of F_2 folds and traverse the same fold limb for ≥10 km, such as in the north-northeast striking Krantz Creek Shear Zone (KCSZ), which is the most extensive D_{2B}/D_3 structure in the Reefton area and extends ~12 km from Merrijgs to the east of Blackwater (Figure 7-4) (Allibone et al., 2020). Overall, the orientations and cross-cutting relationships of the shear zones indicate that they developed during pervasive shortening (D_2) (Maw, 2000; MacKenzie et al., 2016; Allibone et al., 2020).

Gently west dipping to near-horizontal F_3 folds locally deform F_2 folds and D_{2B}/D_3 shear zones throughout the Reefton area. The F_3 folds typically have interlimb angles of 120–150° and locally overturn F_2 fold limbs. The northern section of the KCSZ also dips gently to the west, consistent with the orientations of adjacent F_2 folds around the Cumberland deposit, and similar gently dipping F_3 folds also deform F_2 folds to the west of the Capleston deposits (Figure 7-4). This gentle westerly dip is inferred to reflect folding of D_2 structures during F_3 deformation (Allibone et al., 2020). Also in the KCSZ, 10–20 cm late quartz veinlets and associated minor brittle faults and fractures cut the F_2 folds and S_2 cleavage, and shear foliations are similar to mineralised (D_4) structures at the Globe Progress deposit. The structural similarities indicate that the KCSZ was reactivated at the same time as the Globe Progress and Oriental shear zones in the north (Allibone et al., 2020). Brittle cataclastic shears and faults (D_4) cut the F_2 folds and ductile D_3 shears throughout the Project area, with local reactivation of D_3 shears causing up to tens of metres of offset. Finally, the central part of the Reefton–Lyell Goldfield is dissected by numerous late, unmineralised, northwest striking brittle faults (D_5), many of which offset contacts between Greenland Group and Cretaceous–Cenozoic sedimentary rocks and are inferred to have been active since the mid-Cretaceous (Allibone et al., 2020).

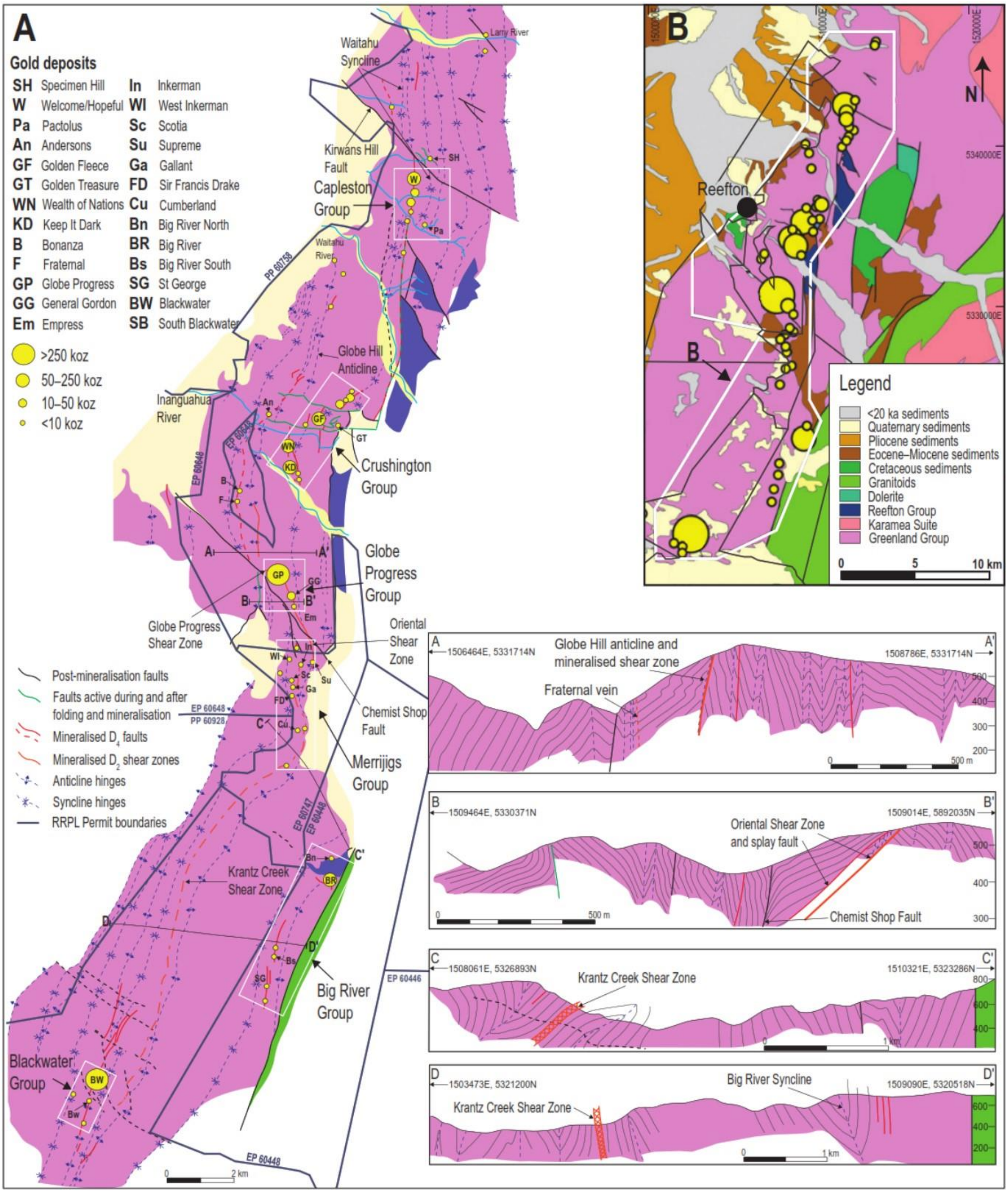


Figure 7-4: Summary structural map of the Reefton Goldfield. A) Simplified geological map of the Reefton area, illustrating the distribution of deposits and the approximate locations of relevant permit boundaries. B) Simplified structural map, illustrating deposit locations and the distribution of major faults and mineralised faults and shear zones. Cross-sections demonstrate the structural settings of the Big River and Auld Creek permit areas. Modified after Allibone et al. (2020).

7.5 Controls on Mineralisation

Gold-stibnite deposits in the Reefton–Lyell area are typically localised along a district-scale network of syn- to post-metamorphic faults and shear zones (Gage, 1948; Rattenbury and Stewart, 2000; Allibone et al., 2020). The Globe Progress deposit occupies a unique structural setting within the Reefton area, where the district-scale mineralised faults and shear zones split into two separate strands (Allibone et al., 2020). However, other deposits are centred on rod-shaped zones of mineralised quartz veins that plunge parallel to the intersection of host faults and the S_2 cleavage or bedding in adjacent rocks, indicating that veining is concentrated in minor dilational jogs where faults refract across the cleavage or bedding (Allibone et al., 2018; Allibone et al., 2020). None of the deposits within the goldfield are located in major fold hinges (Figure 7-4) (Allibone et al., 2020). Furthermore, the shear zones do not extend into the exposed late Palaeozoic sediments, nor do these rocks host any Au or Sb mineralisation, hence the Au/Sb-bearing structures are inferred to predate the Devonian marine sediments of the Reefton Group, the late Devonian–Carboniferous Karamea Suite, and the Cretaceous Rahu and Separation Point suites (Allibone et al., 2020).

The north trending Globe Progress corridor, which includes the Globe Progress deposit, cuts the centre of the Lyell Goldfield. This corridor is fault bounded and may act as a control on As anomalism (Figure 7-4) (Reefton Resources Pty Ltd, 2023c), and it displaces two anticlinoria that can be defined by magnetic stratigraphy (Craven, 1996). Barry (1996) reviewed the geology of the Alpine United mine in the Lyell Goldfield based on structural data from the Greenland Group host rocks and concluded that the mineralised quartz system was structurally associated with an “upright anticline with a sub-horizontal axis” located on the western limb of a larger-scale synclinorium. However, the depth of the Au mineralisation remains unclear, as there is insufficient evidence to determine whether the mineralisation has been offset by faulting or has branched or lensed out (Barry, 1996; Pilcher and Cutovinos, 2008). Overall, mineralisation in the Lyell area is hosted mainly in steeply dipping, north striking shear zones that lie parallel to fold axes in the host rocks. Gold mineralisation is typically associated with mesothermal quartz veining developed in structurally favourable zones within the Greenland Group rocks. These Au-bearing veins and their host rocks are associated with arsenopyrite, stibnite, and pyrite and were formed by hydrothermal fluids during or after regional metamorphism (Reefton Resources Pty Ltd, 2023c).

The earliest evidence of hydrothermal fluid flow and Au mineralisation in the Project area occurs within D_3 shear zones (Table 7-1) (Allibone et al., 2018). Although the shears do not all host significant mineralisation, they are typically characterised by late metamorphic arsenopyrite (typically acicular) and pyrite porphyroblasts that have grown across the S_2 metamorphic fabric before being rotated and deformed by anastomosing shears (MacKenzie et al., 2016). Where shearing is most intense, hydrothermal quartz infills around and within the deformed porphyroblasts. In mineralised shears at the main Au deposits, early Au- and arsenopyrite-bearing quartz veins fill faults and fractures in the mineralised host rocks. Typical hydrothermal quartz textures are observed, including undulose extinction, stylolitic veins, annealed quartz-grain boundaries, and other recrystallisation textures consistent with plastic-ductile deformation (MacKenzie et al., 2016). Reactivation of the D_3 shears during brittle faulting (D_4) caused locally significant vein development in the area surrounding Globe Progress. This later phase of veining was associated with relatively abundant stibnite, mineralised carbonaceous cataclasite, and disseminated arsenopyrite and pyrite (Allibone et al., 2020). The amounts of Au deposited in the Project area during D_4 relative to D_2 are unclear; however, the presence of stibnite-rich vein material at Fraternal and the typical absence in deposits to the north and south (Henderson, 1917) indicate that D_4 may have been an important contributor to Sb mineralisation, as stibnite is typically absent from mineralised veins formed during D_2 (MacKenzie et al., 2016).

Table 7-1: Summary of deformation and mineralisation events in the Reefton–Lyell Goldfield (modified after Allibone et al., 2020).

Age	Class	Mineral Associations	Comments
Youngest	D5+		
386 ± 8 Ma	D4	Brittle overprinting, with two main mineralisation stages: 1) white quartz and carbonate veins; and 2) mineralised banded quartz and massive Sb veins, with locally extensive haloes of auriferous disseminated arsenopyrite and pyrite around D4 faults and reactivated D2 shear zones.	Development of mineralised puggy, cataclastic, brittle faults, brittle reactivation, and further mineralisation of the D2 Globe Progress, Oriental, and Krantz Creek shear zones.
Undefined	D3		Open, gently north plunging folds with near-horizontal to gently west dipping axial planes that locally overturn F2 fold limbs. No associated cleavage.
438 ± 6 Ma	D3/D2B	Two main mineralisation stages: 1) grey quartz, Au, and arsenopyrite, ± minor stibnite; and 2) grey, translucent quartz with Au, and arsenopyrite, ± minor sulphide minerals, stibnite, and rutile.	Likely initiation of the KCSZ and continued displacement along the Globe Progress and Oriental shear zones. Phase 1 mineralisation potentially associated with transpression rather than contraction.
450 ± 10 Ma	D2	Late metamorphic carbonate spots; arsenopyrite porphyroblasts; metamorphic chlorite, muscovite, and ankerite.	Regional shortening, gently plunging upright F2 folds, S2 cleavage, shear-zone development (contractional and transfer tear), and lower greenschist facies metamorphism.
Oldest	D1		Early bedding-parallel foliation; cryptic changes in bedding dip and younging direction, apparently unrelated to D2.

Most of the Au-Sb deposits in the Reefton area are concentrated along D_{2B}/D_3 shear zones (see Section 7.4; Table 7-1), where they cut tightly folded host rocks. For example, in the Reefton Goldfield, the Globe Progress and Blackwater deposits and their host structures cut north-northeast trending syn-metamorphic folds (Christie and Brathwaite, 2003; Milham and Craw, 2009; MacKenzie et al., 2016; Hamisi et al., 2017); however, the structural setting(s) of smaller deposits in the wider Reefton–Lyell and Paparoa goldfield areas with respect to bends, splays, and intersections in host faults and folds in the adjacent rocks remain poorly constrained (Allibone et al., 2020).

8. Deposit Types

The main Au and Sb mineralisation hosted in the Greenland Group within the Project area is associated with an orogenic mineral system.

The orogenic mineral system unites a diverse group of mineral deposits that form during orogenesis (e.g. Tavares Nassif et al., 2022). Associated orogenic Au and Sb lodes form in mid- to shallow-crustal metamorphic rocks in compressional settings, where Au-Sb bearing fluids (derived from dehydrated metamorphic rocks) migrate from depth via structural conduits and precipitate Au and Sb, often within quartz veins, following cooling and decompression (e.g. Fyfe and Henley, 1973; Gaboury, 2019). Lode Au is the predominant economic deposit type found within metamorphic belts; however, these settings may also host Au-dominant intrusion-related deposits, as well as deposits with non-typical metal associations (e.g. Groves et al., 2003).

The crustal continuum model indicates that orogenic Au mineralisation occurs in a wide range of pressure and temperature (*P-T*) conditions, from sub-greenschist to granulite facies (Groves, 1993; Groves et al., 1998; Groves et al., 2003). However, Phillips and Powell (2009, 2010) suggested that the crustal continuum model is only applicable for restricted depth and temperature ranges, typically within greenschist facies conditions. Furthermore, (Yu et al., 2022) reported that Au-Sb orogenic deposits are typically epizonal and restricted to rocks of Phanerozoic age, possibly as a consequence of erosion removing older mineral deposits in zones of rapid uplift. Notwithstanding the controversy of their formation, numerous replacement style (Vielreicher et al., 1994) and quartz-vein hosted (Robert and Brown, 1986) Au deposits and those associated with intrusions (e.g. Salier et al., 2004) are classed as orogenic Au deposits. Accordingly, a plethora of different characteristics are associated with orogenic Au deposits (e.g. Gaboury, 2019).

The structural setting and host rocks of the Au and Au-Sg deposits in the Project area are similar to those of Palaeozoic rocks of the western Lachlan Orogen in southeast Australia, which host the central Victoria goldfields (Cox et al., 1991). The historical Au mines at Bendigo and Ballarat, and the currently producing Fosterville Au mine in Victoria, are hosted by Ordovician turbidites that formed coincident with the Greenland Group rocks of the Buller Terrane in a similar structural setting along the active Gondwana margin (Cooper and Tulloch, 1992). Gold mineralisation in the Victoria Goldfields is associated with two main events at ~445 and 380–370 Ma (Phillips et al., 2012). The earlier event involved crustal thickening and the circulation of metamorphic fluids through the crust (Vandenberg, 1978), which formed the Au deposits at Bendigo, Castlemain, Maldon, and Daylesford. The later event was restricted to the Melbourne and eastern Bendigo zones and is associated with Au mineralisation at the Fosterville Goldfield (Bierlein and Maher, 2001).

Late Palaeozoic host rocks of the Meguma Terrane in Nova Scotia, Canada, have a similar structural setting and deformational history to the Reefton and central Victoria goldfields (Bierlein et al., 2004). The Meguma Group is part of a Cambrian–Ordovician sequence that formed along and was accreted onto the continental margin of Avalon during the Acadian orogeny. Like the Buller Terrane and Greenland Group, the Meguma Group is dominated by slates and argillites with lesser sandstones that were metamorphosed to greenschist facies in the late Palaeozoic. The Meguma Group hosts over 300 historical orogenic Au deposits, including Nova Scotia's biggest historical producer, the Goldenville deposit (212,300 oz Au) (Ryan and Smith, 1998). Like the Reefton deposits, the orogenic Au deposits in the Meguma Group are hosted within faults and shears that cut fold limbs and around the hinges of regional-scale, steeply dipping, shallow-plunging, upright anticlinal folds. The Au mineralised veins in the Meguma Group are narrow (cm to m scale) and structurally controlled by reverse faults and associated fold-related fractures. Arsenopyrite is the dominant sulphide, but pyrrhotite and pyrite are also present. Gold occurs as visible Au in veins and Au-bearing sulphides disseminated in metasedimentary host rocks. The Meguma Au deposits include both high-grade, Au-bearing vein-type deposits (e.g. the Caribou Gold District) and lower-grade, disseminated Au-bearing sulphide-type deposits hosted in argillite and interbedded metasandstones (e.g. the Touquoy Zone) (Bierlein et al., 2004), and many deposits are a combination of the two (e.g. Osprey Gold's Goldenville Project) (Pettigrew et al., 2017).

9. Exploration

9.1 Summary

As of the effective date of this Report, RUA had not undertaken any exploration activities in the Project area. The nature and extent of historical exploration work undertaken by previous owners are presented in Section 6.3, and some of these data have been used as a basis for the MREs reported in Section 14. In anticipation of the acquisition of RRPL by RUA, exploration work conducted by RRPL, including geophysical surveys, soil sampling, rock-chip sampling, and trenching is summarised here in Section 9.

RRPL has conducted ground magnetic surveys, drone-based magnetic surveys, LiDAR and passive seismic surveys at the Project. Conventional soil sampling was completed at Alexander River, Big River, Cumberland, Golden Point, Lyell, and Reefton South to test various mineralised structures. RRPL used rock-chip sampling to identify exposed mineralisation across the Project area. RRPL sampled 65 trenches within the Project, including resampling and/or extension of historical trenches in addition to new trenches.

9.2 Geophysical Survey

RRPL has conducted ground magnetic surveys, drone-based magnetic surveys, LiDAR and passive seismic surveys at the Project.

9.2.1 Gound Magnetic Survey

A basic ground magnetic system was successfully trialled by RRPL to detect the locations of dolerite dykes in the Alexander River area in order to identify post-mineralisation faults and their associated sense of displacement. The survey involved the use of a backpack roving Overhauser magnetometer to collect total magnetic intensity (TMI) readings in the field with corresponding GPS locations. Data were filtered to display TMI readings that indicated dyke locations (Reefton Resources Pty Ltd, 2023a). A ground magnetic survey was also trialled across an east to west transect along the southern margin of the Alexander River area (Figure 9-1). The 1.9 line-km survey descended ~450 vertical metres and, despite periodic loss of GPS signal, the survey was completed successfully, and four main anomalies were detected (Figure 9-2). Two east-southeast trending dolerite dykes were delineated (Figure 9-1), one that can be traced for >900 m along strike and pinches out at both ends, and another that can be traced for >1,200 m and pinches out on the eastern margin while remaining open to the west (Reefton Resources Pty Ltd, 2023a). A strong magnetic response observed to the west of Bulls may represent a larger igneous intrusion (Figure 9-1). RRPL conducted follow-up ground magnetic surveys to improve the interpretation of the dolerite dykes in the main mineralised zone in the Alexander River area.

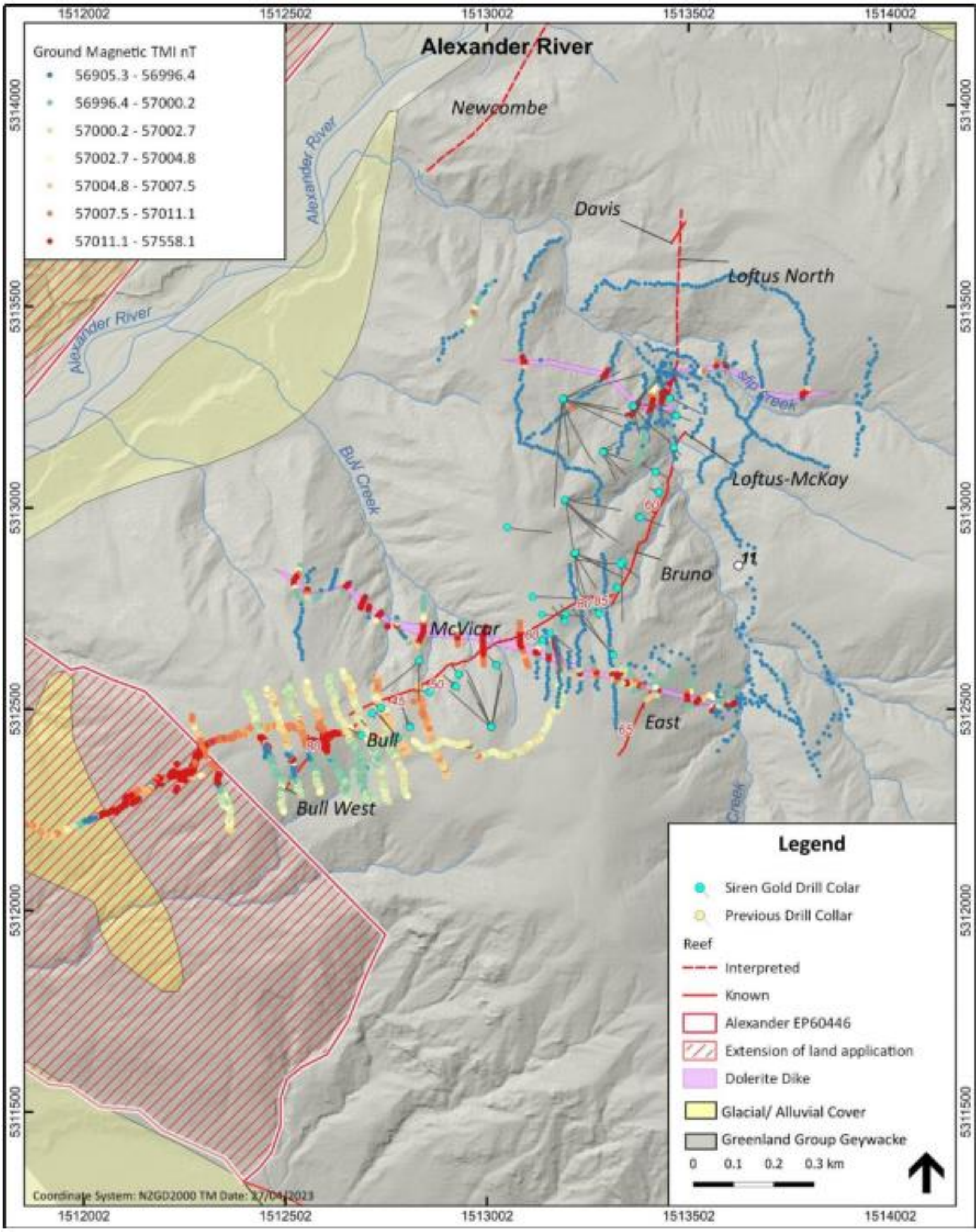


Figure 9-1: Ground magnetics survey results. Colour ramps do not reflect consistent increments and were chosen to best highlight the detected anomalies. Modified after Reefton Resources Pty Ltd (2023a).

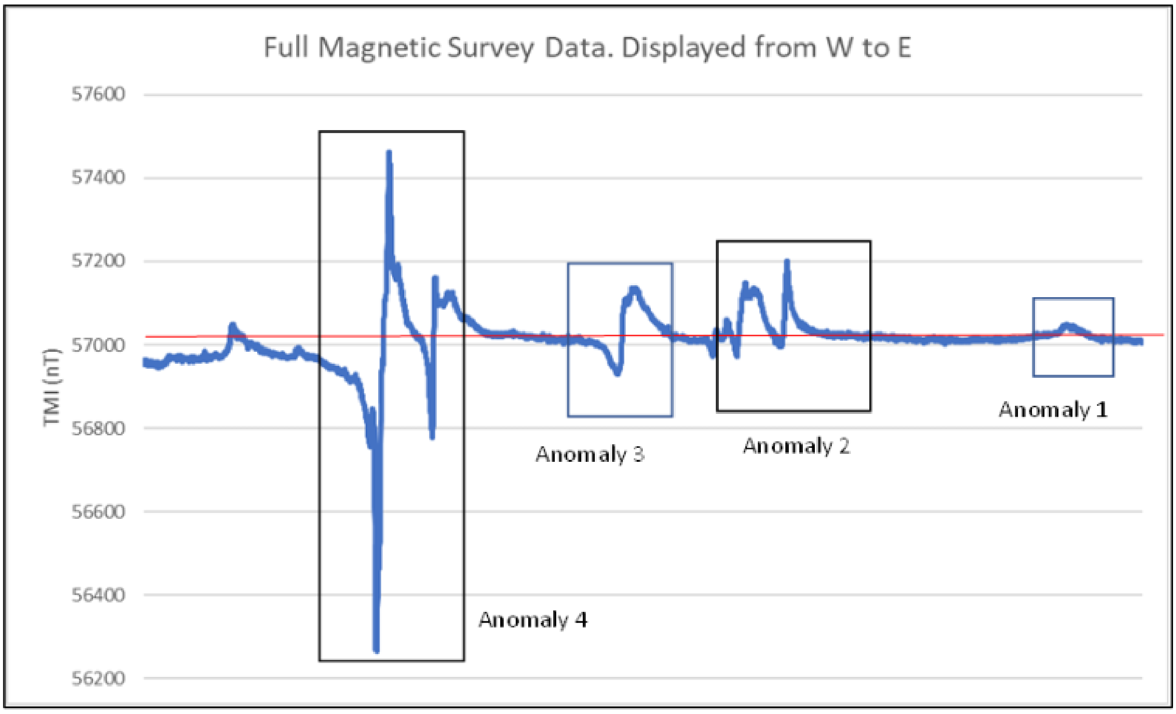


Figure 9-2: Ground magnetic data, indicating the four anomalies crossed during the transect. The red line illustrates a background TMI of ~57,010 nT, corresponding to greywacke/argillite in the study area. Modified after Reefton Resources Pty Ltd (2023a).

9.2.2 Drone-Based Magnetic Survey

In 2022, Reefton Goldfields Ltd (RGL) flew a 7 km^2 drone-based magnetic survey over the main zone of mineralisation in the Alexander River area to delineate structures such as major faults, mineralisation trends, and intrusions (Reefton Resources Pty Ltd, 2023a). The resolution was significantly higher than that of the aeromagnetic survey flown by NZP&M due to the closer line spacing at a lower altitude and more modern equipment (Table 9-1) and allowed the identification of meter-scale dolerite dykes that have been mapped in the field, and major faults (Figure 9-3).

Table 9-1: RGL drone survey specifications.

Drone	Sensor	Line km	Line km/day (average)	Line spacing
DJI Matrice 300 RTK	Geometrics MagArrow	108.8	14	20 m (centre), 30 m (perimeter)

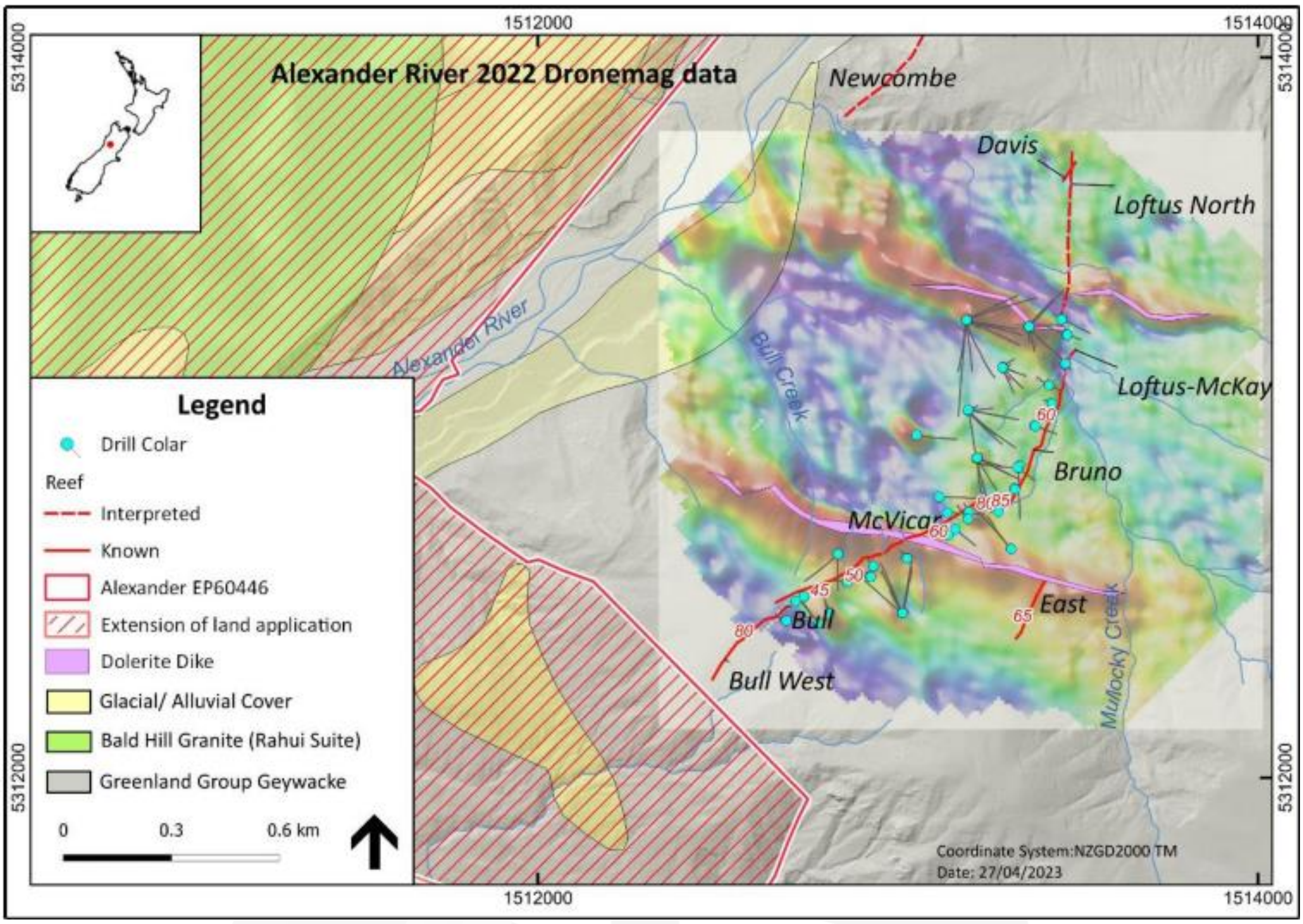


Figure 9-3: RGL drone magnetic data. Modified from Reefton Resources Pty Ltd (2023a).

9.2.3 LiDAR survey

In October 2020, RRPL engaged Landpro Ltd (Landpro) to undertake a LiDAR survey, including photogrammetry, over the Reefton Goldfield covering parts of EP 60446 (Alexander River; Figure 9-4), EP 60448 (Big River; Figure 9-5), EP 60479 (Lyell), EP 60648 (Golden Point; Figure 9-6), and EP 60747 (Cumberland) to delineate the topographic surface and create a digital terrain model (DTM). The survey was flown with a fixed-wing plane, and imagery and LiDAR were captured by a Leica RDC30 and Leica ALS60 (8–10 points per square metre), respectively (McCulloch, 2023a; Reefton Resources Pty Ltd, 2023d, a, b, c).

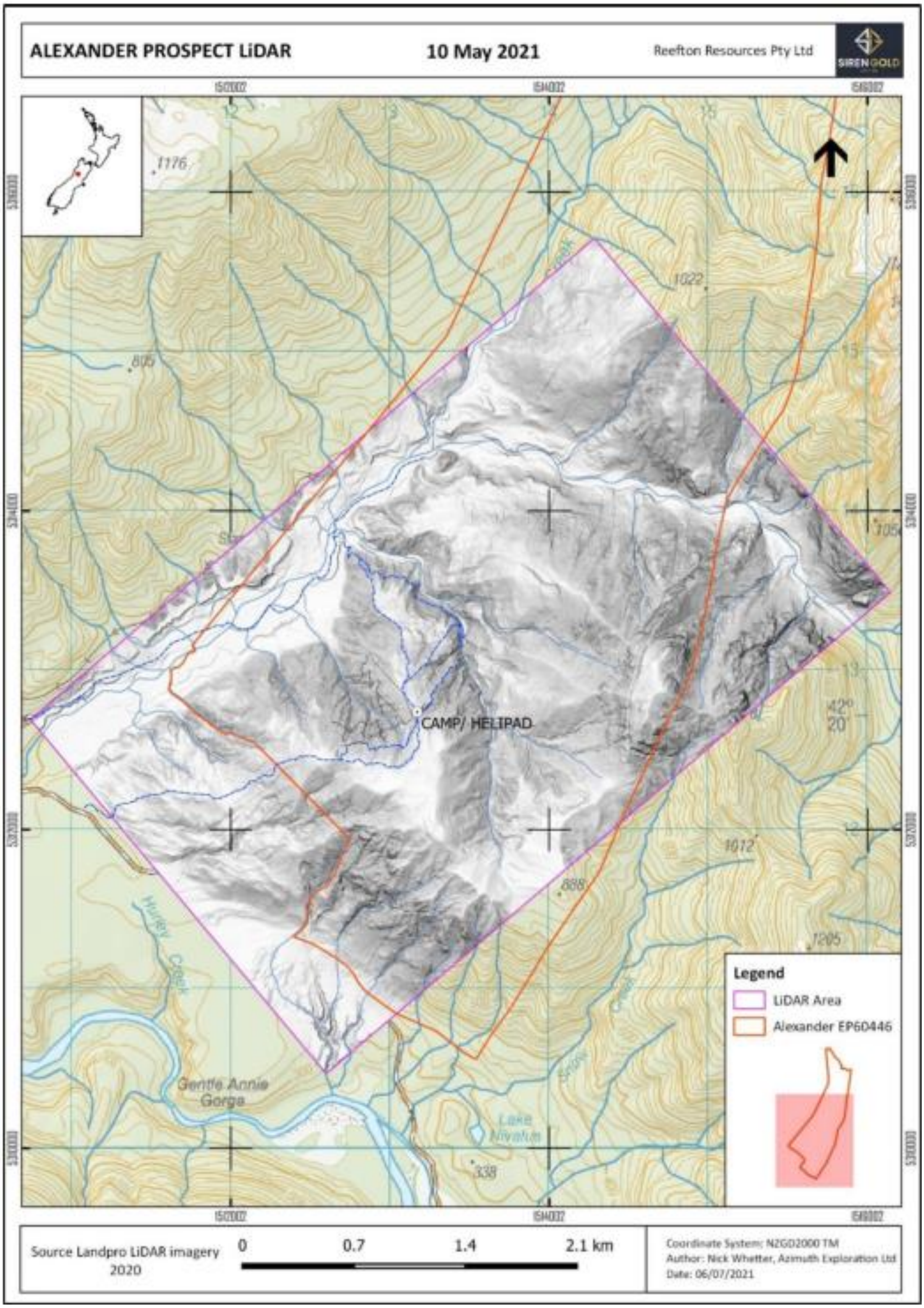


Figure 9-4: LiDAR survey area and DTM over EP 60446 (Reefton Resources Pty Ltd, 2023a).

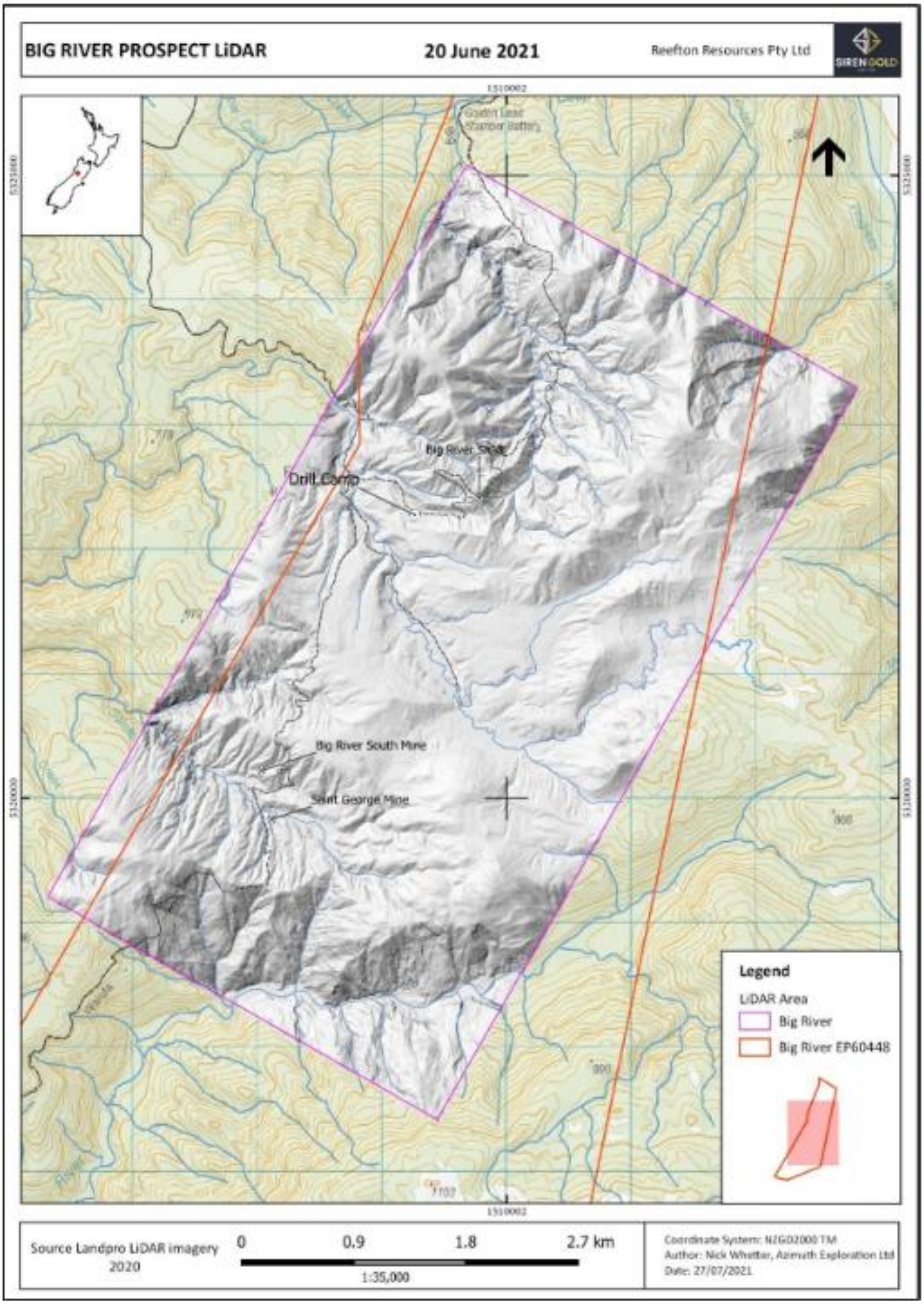


Figure 9-5: LiDAR survey area and DTM over EP 60448 (McCulloch, 2023c).

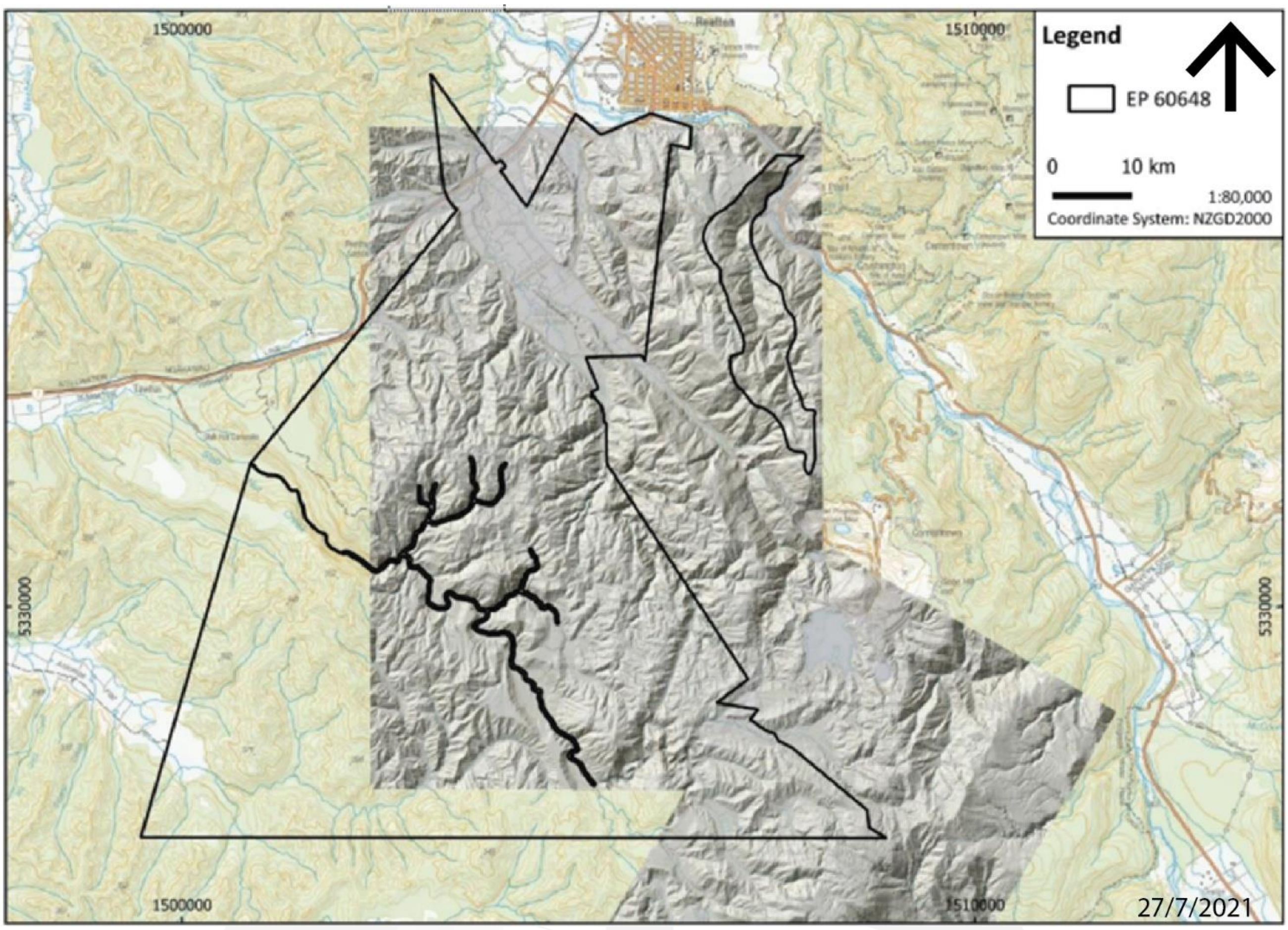


Figure 9-6: LiDAR survey area and DTM over EP 60648 (Reefton Resources Pty Ltd, 2023d).

9.2.4 Passive Seismic

In September 2020, RRPL commissioned Resource Potential Ltd to complete passive seismic surveys over the Big River permit, including over four ultrafine soil sampling lines (Section 9.3.3), to estimate the thickness of glacial cover (Figure 9-7) (Reefton Resources Pty Ltd, 2023b). The survey lines indicated there is a thin cover over the Greenland Group rocks in the west, but the rocks are exposed around the access track. To the east of the access track and in small gullies and spurs, the thickness of the glacial cover is variable; however, the Greenland Group rocks are close to the surface in gullies (Figure 9-8). The glacial cover continues to thicken eastwards, estimated at 6–18 m along line 3. In the west, the survey results were consistent with soil sampling results (Section 9.3.3), indicating that the Greenland Group rocks are exposed. Along line 5, the Greenland Group is exposed in the west but is overlain by glacial till in the east, again consistent with the soil sampling. However, the survey results indicated that the Greenland Group rocks are close to the surface in the east with limited till, but sampling in this area by RRPL intercepted consistent clay and sand. Line 7 crosses the Pakihi in the west and extends into the Big River valley and up a gentle slope in the east. Previous sampling by RRPL suggested a thick till cover, with alluvial gravels in the Big River valley. This was reflected in the passive seismic results, with some deep till under the Pakihi that thins towards Big River before intersecting deep till in the east.

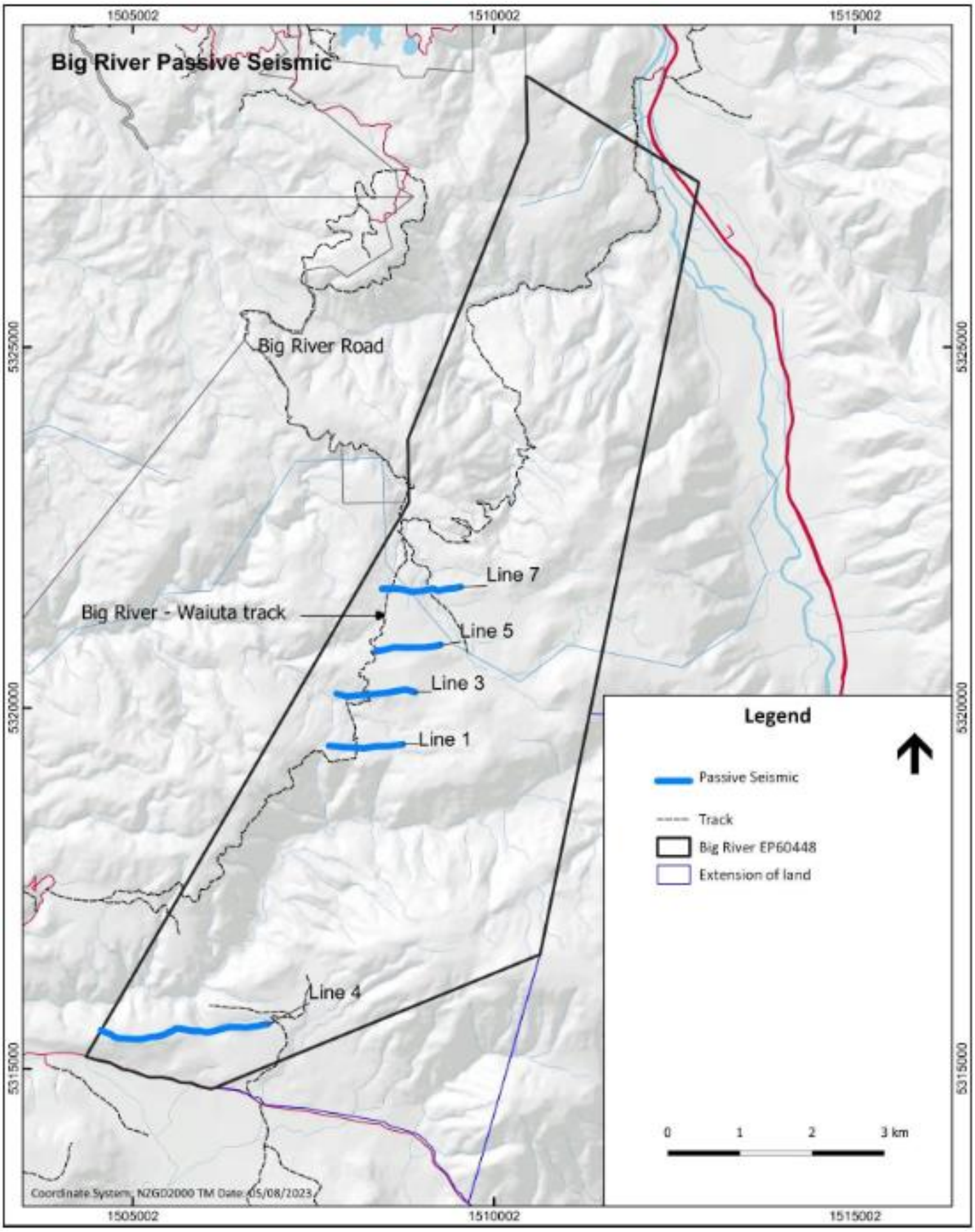


Figure 9-7: Location of passive seismic lines over Big River (EP 60448) (Reefton Resources Pty Ltd, 2023b).

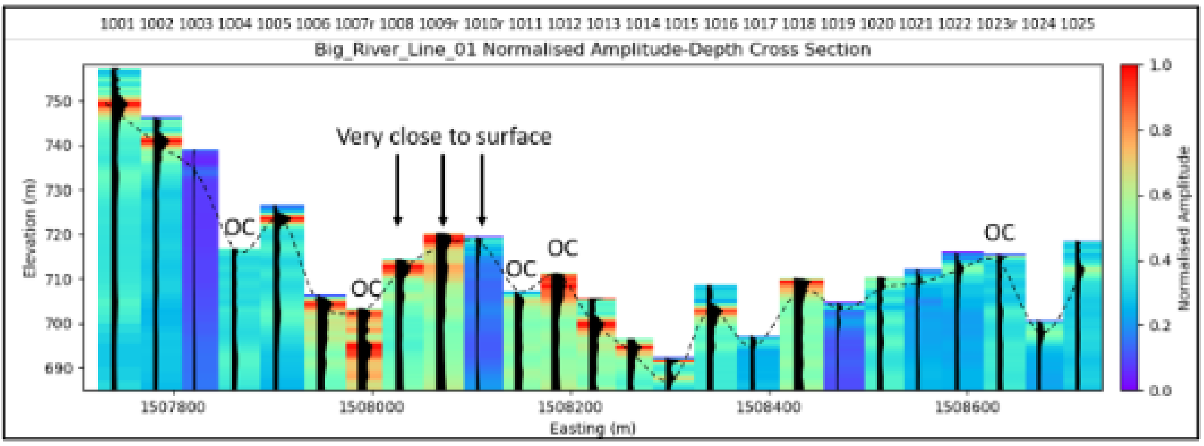


Figure 9-8: Cross-section of the passive survey over Line 1 (Reefton Resources Pty Ltd, 2023b). The dotted line represents the top of the Greenland Group. The vertical scale is exaggerated.

9.3 Soil Sampling

9.3.1 Conventional Soil Sampling

Conventional soil sampling was completed at Alexander River, Big River, Cumberland, Golden Point, Lyell, and Reefton South to test various mineralised structures (Table 9-2, Figure 9-9). As of the effective date, a total of 6,175 conventional soil samples had been collected within the Project area. Samples were not sieved in the field and were sent to SGS Westport in an as-collected state for drying and sample preparation. Samples were analysed by fire assay for Au and by pXRF for multi-elements, including As (Section 11.2). A summary of the number of samples collected and Au and As results are reported in Table 9-2.

Pre-planned soil sampling points were loaded onto a handheld GPS for guidance, and actual locations were marked and recorded in the field using GPS. Soil augers or spades were used to acquire a ~300-g sample, which was put in a wet-strength paper sample bag with wire ties. Samples were typically collected from the B or C horizons, although sample depths varied. Samples were logged on Excel spreadsheets in the field, including sample ID, depth, colour, horizon, slope, sample description, sampler, basement, and comments.

At Alexander River, conventional soil sampling focussed on areas distal from the mineralised shoots previously sampled by CRAE, including a 20 m × 100 m grid north of Mullocky Creek (Reefton Resources Pty Ltd, 2023a).

Soil samples were collected at 20-m intervals along lines spaced 150–300 m apart at Big River to test the mineralised strike from the St Geroge area, Snowy River catchment, Big River Syncline, and Big River North.

RRPL collected close-spaced (~5 m) soil samples in the Merrijgs and Gallant exploration areas (Cumberland).

Soil samples within the Golden Point permit were focussed along the strike of the Auld Creek and Golden Point–Morning Star prospects. Regional soil sampling was conducted at a line spacing of 150 m, with samples collected every 20 m. Target-definition sampling infilled the sampling lines spaced 10 m apart, with 5-m sample spacings.

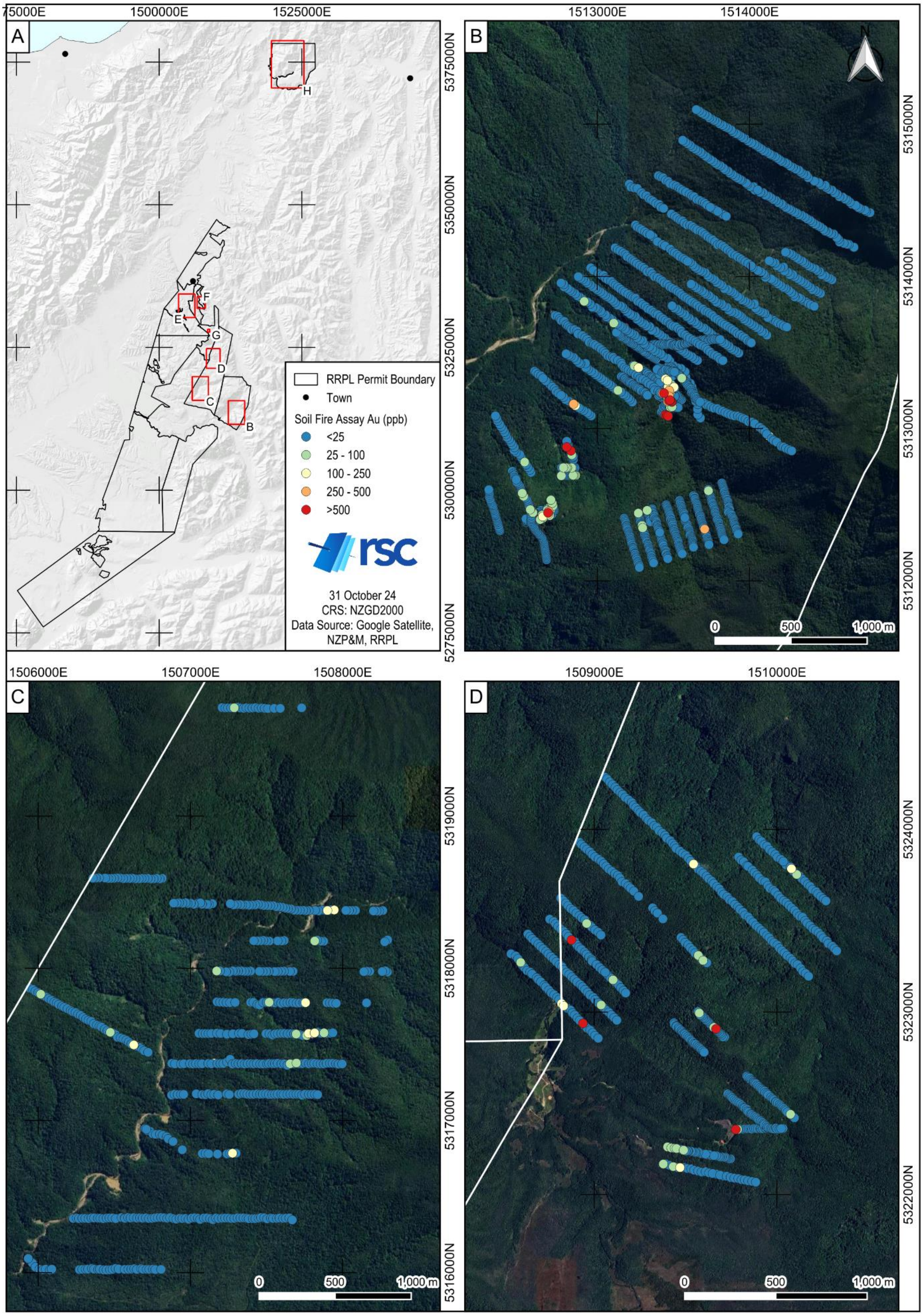
At Lyell, RRPL conducted an extensive soil sampling campaign, collecting 2,088 soil samples along a ~20 m × 150 m grid, with tighter 20 m × 50 m sampling in the Victory, Mt Lyell North, and Mt Lyell regions. Only ~90% of the soil samples were sent for laboratory Au analysis. All samples were analysed by pXRF.

At Reefton South, a single line with sample spacing of ~40 m was sampled.

A total of 122 conventional soil field repeats were collected. A review of the repeat sample data by the QP (Sean Aldrich) indicates there is good correlation between the original and repeat data, and there is no statistically significant bias between the sample pairs.

Table 9-2: Summary of conventional soil sample Au (fire assay) and As (pXRF) results from the Reefton Project.

Permit	Number of Samples	Minimum Au (ppb)	Median Au (ppb)	Maximum Au (ppb)	Minimum As (ppm)	Median As (ppm)	Maximum As (ppm)
Alexander River	1,624	0.5	1	11,000	2	22	3,330
Big River	1,113	0.5	1	1,980	2	9	1,457
Cumberland	173	-	-	-	3	27	951
Golden Point	1,336	0.5	3	3,970	1	12	2,714
Lyell	2,088	1	5	2,090	2	16	8,213
Reefton South	14	0	2	29	2	5	9


A
B
C
D
E
F
G
H
RRPL Permit Boundary
Town
Soil Fire Assay Au (ppb)
<25
25 - 100
100 - 250
250 - 500
>500
31 October 24
CRS: NZGD2000
Data Source: Google Satellite, NZP&M, RRPL
1500000E
1525000E
5375000N
5350000N
5325000N
5300000N
5275000N
1513000E
1514000E
5315000N
5314000N
5313000N
5312000N
1506000E
1507000E
1508000E
5319000N
5318000N
5317000N
5316000N
1509000E
1510000E
5324000N
5323000N
5322000N
0
500
1,000 m

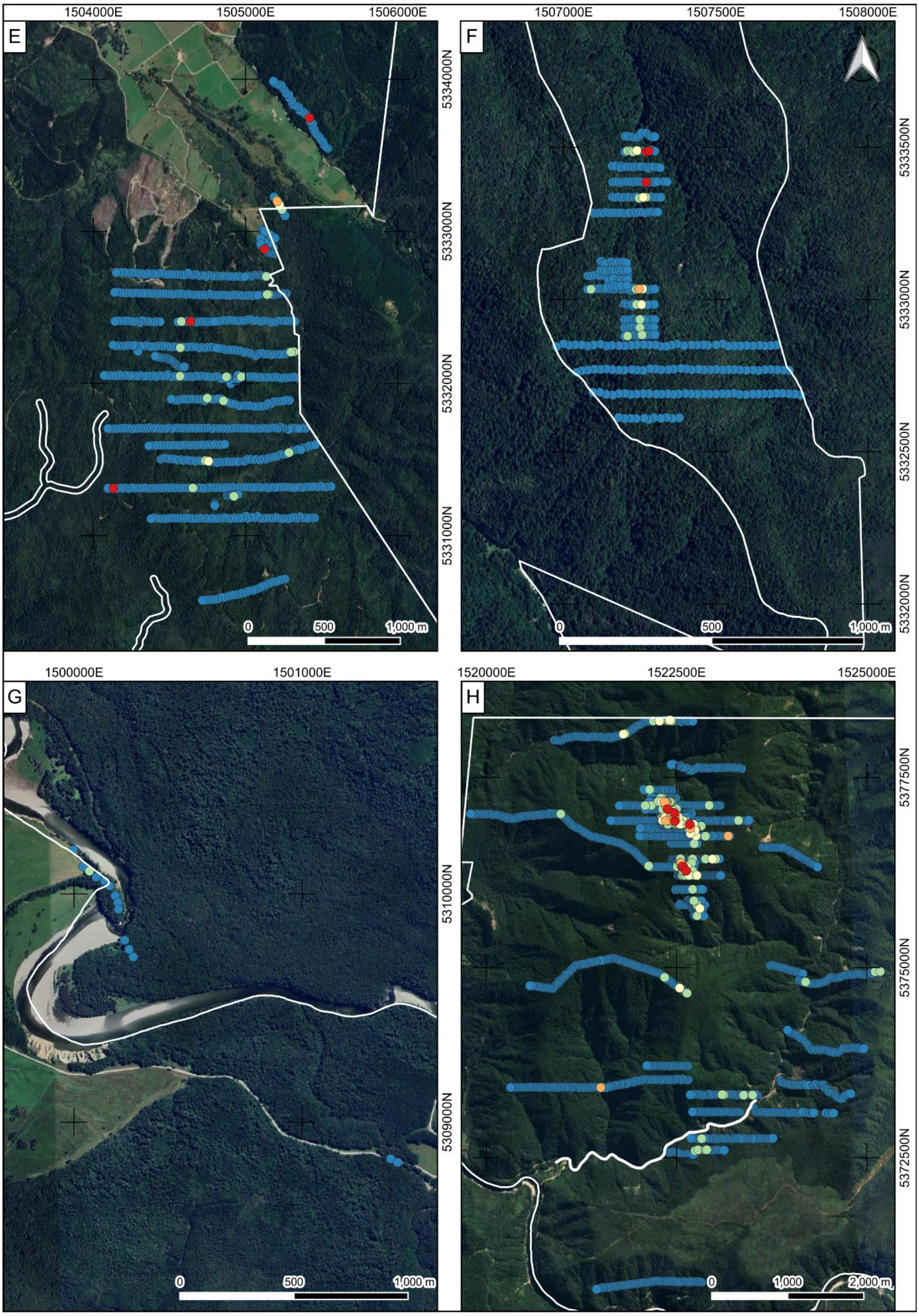


Figure 9-9: Conventional soil samples collected at the Project, analysed by fire assay for Au (ppb). A) Overview map; B) Alexander River; C) Big River; D) Big River (north); E) Golden Point; F) Auld Creek; G) Reefton South; H) Lyell.

9.3.2 Ionic Leach Soil Sampling

Ionic leach is a proprietary partial leach assay technique designed to explore post-mineralisation or residual cover. The method can be used to identify buried or blind mineral deposits by examining only part of the chemical signature of the mineralisation. RRPL conducted ionic leach sampling at Alexander River (40 m × 100 m spacing), Big River (two lines at 50-m spacing), Waitahu (50 m × 400 m spacing), Lyell (50 m × 350 m spacing), and Bell Hill (1 line at 50-m spacing).

The geochemical results are summarised in Table 9-3 and Figure 9-10.

A total of 31 ionic leach field repeats samples were collected. A review of the repeat sample data by the QP (Sean Aldrich) indicates there is good correlation between the original and repeat data. As there are fewer than 25 repeat sample pairs reporting Au grades above the LOQ, statistically meaningful conclusions regarding the ionic leach repeat pairs cannot be made.

Table 9-3: Summary of ionic leach Au and As results from the Project.

Permit	Number of Samples	Minimum Au (ppb)	Median Au (ppb)	Maximum Au (ppb)	Minimum As (ppb)	Median As (ppb)	Maximum As (ppb)
Alexander River	262	0.01	0.03	385	0.4	8.5	4,360
Big River	53	0.02	0.07	6.07	3.6	35.5	672
Waitahu	243	0.01	0.06	59	2.1	8.8	1,585
Bell Hill	68	0.01	0.05	0.28	0.9	15.2	112
Lyell	149	0.01	0.02	0.15	0.3	2.05	148

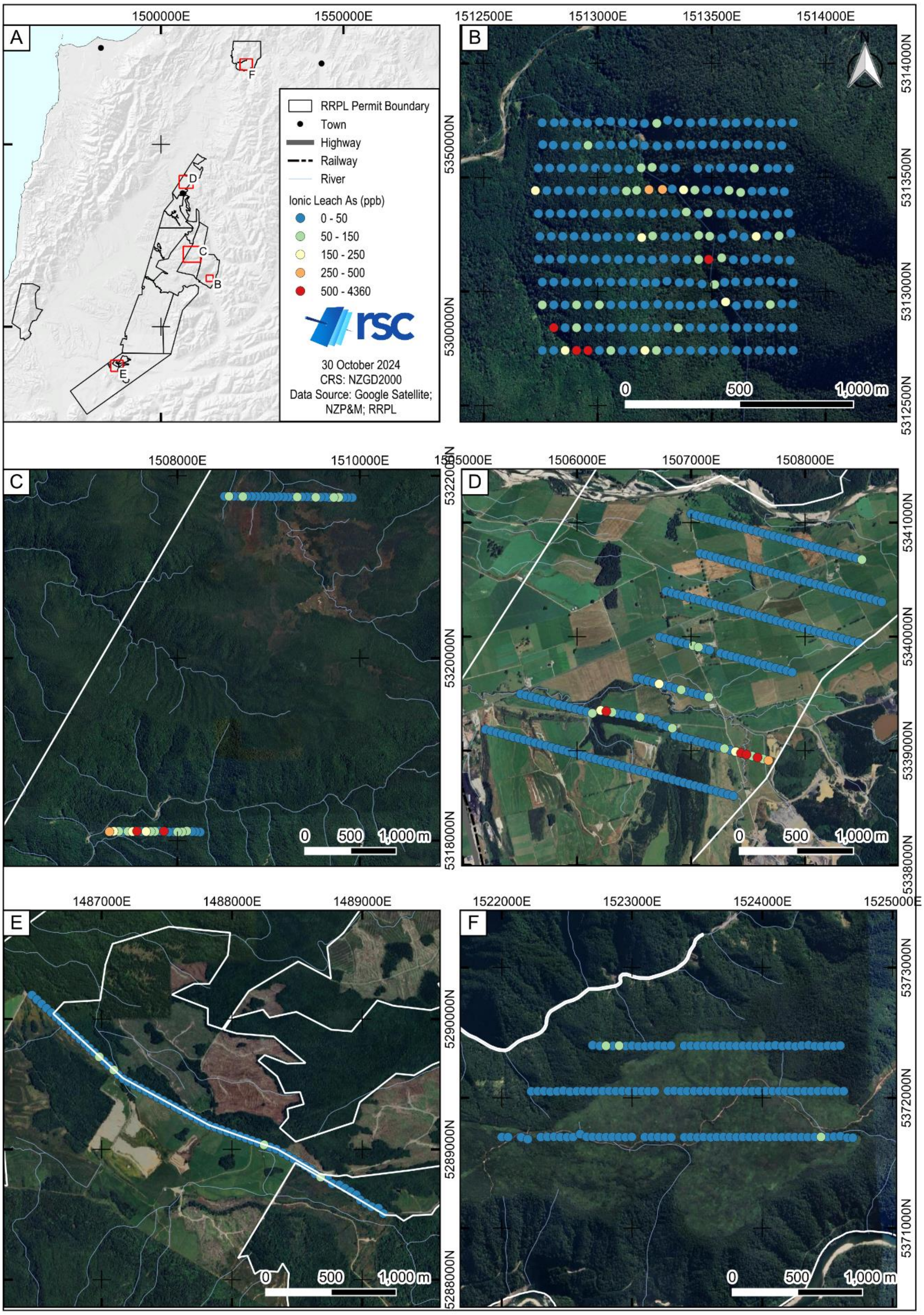


Figure 9-10: Ionic leach sampling at the Project (As (ppb) grade). A) Overview map; B) Alexander River; C) Big River; D) Waitahu; E) Bell Hill; F) Lyell.

9.3.3 Ultrafine Soil Sampling

RRPL carried out ultrafine soil sampling in areas of glacial till cover to detect geochemical anomalies related to buried Au mineralisation structures at Big River, Reefton South, Golden Point and Lyell. The Au and As results are summarised in Table 9-4 and Figure 9-11.

RRPL conducted two phases of ultrafine soil sampling at Big River. Phase 1 was conducted at 20-m intervals along 400-m spaced lines. Phase 2 (infill sampling) reduced the sampling pattern to 200 m × 20 m. The ultrafine Au results were consistent with historical soil sampling results, although the analysis performed poorly in areas of swamp and peat.

RRPL sampled two areas within the Reefton South permit at a 20-m spacing and collected 17 ultrafine samples at Lyell, twinning soil samples collected for ionic leach.

Within the Golden Point permit, RRPL collected 46 ultrafine samples along 2 lines spaced 120 m apart, with soil samples taken every 20 m.

A total of 23 ultrafine field repeats samples were collected. A review of the repeat sample data by the QP (Sean Aldrich) indicates there a bias towards the duplicate sample. However, as there are fewer than 25 repeat sample pairs reporting Au grades above the LOQ, statistically meaningful conclusions regarding the ultrafine repeat pairs cannot be made.

Table 9-4: Ultrafine soil sampling Au and As results from the Project.

Permit	Number of Samples	Minimum Au (ppb)	Median Au (ppb)	Maximum Au (ppb)	Minimum As (ppb)	Median As (ppb)	Maximum As (ppb)
Big River	1,166	0.25	2.35	367	0.25	8.9	1,480
Reefton South	302	0.6	2.5	37.2	0.7	9.0	300
Golden Point	46	1.3	8.55	122.5	2.6	47.2	152
Lyell	17	0.7	1.2	4	1.8	4.45	26.4

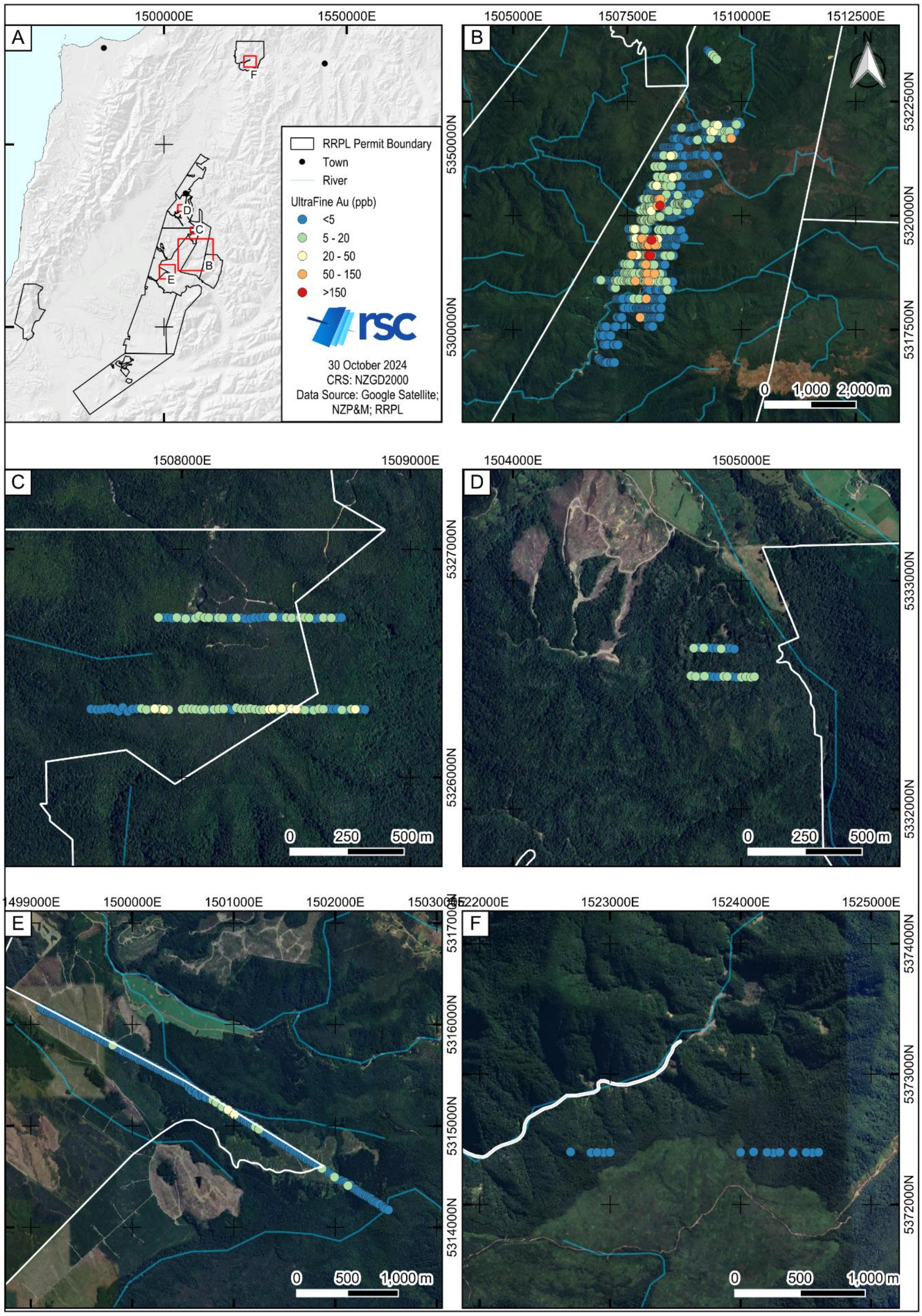


Figure 9-11: Ultrafine sampling at the Project (Au (ppb) grade). A) Overview map; B) Big River; C) Reefton South; D) Golden Point; E) Reefton South; F) Lyell.

9.4 Rock-Chip Sampling

RRPL used rock-chip sampling to identify exposed mineralisation across the Project area. A total of 517 rock-chip samples were collected from the Project. Samples weighing approximately 0.5–1 kg were collected using a rock hammer, placed into labelled sample bags, and sent to SGS Westport for sample preparation (Section 11.1.2) Samples were analysed by fire assay (Au) and pXRF (multielement). The Au and As results are summarised in Table 9-5.

Rock-chip samples were used to identify new reefs and surface extensions of previously known reefs at Alexander River. Two quartz float samples collected in the Furmister Creek area (Reefton South) returned up to 0.48 g/t Au, and warrant further investigation.

Table 9-5: Summary of rock-chip samples Au (fire assay) and As (pXRF) results from the Reefton Project.

Permit	Number of Samples	Minimum Au (g/t)	Median Au (g/t)	Maximum Au (g/t)	Minimum As (ppm)	Median As (ppm)	Maximum As (ppm)
Alexander River	107	0.01	0.25	28.2	3	45	17,465
Big River	58	0.01	0.37	68.9	3	205	9,051
Cumberland	18	0.05	0.42	25.3	5	1,887	11,519
Golden Point	102	0.01	0.02	2.26	4	71	20,913
Langdon's	33	0.01	0.39	506	10	1,091	24,673
Lyell	182	0.01	0.08	205	3	380	82,017
Reefton South	17	0.01	0.04	0.48	3	8	44

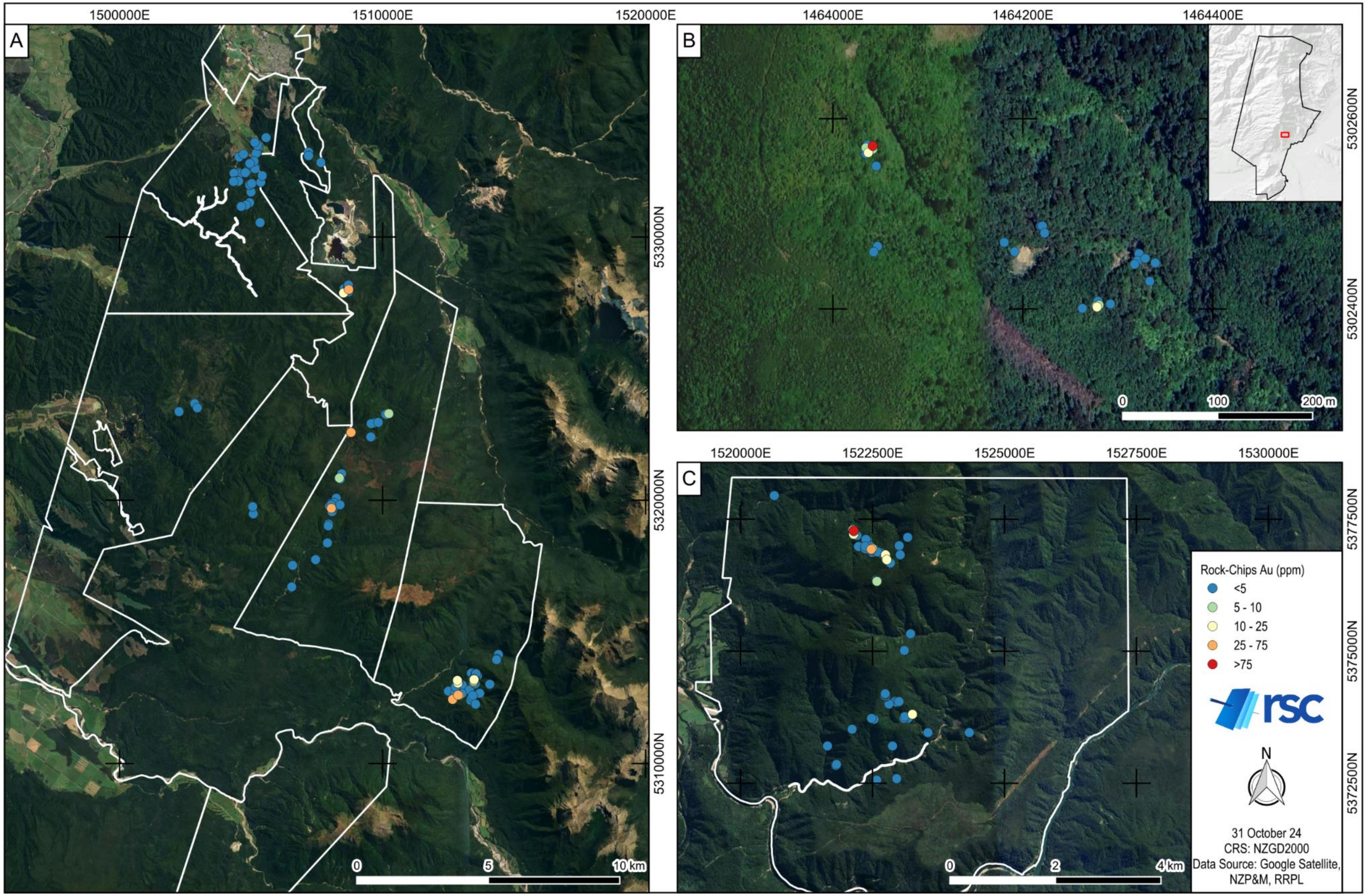


Figure 9-12: Summary of rock-chip samples collected at the Reefton Project, displaying Au (g/t) grade). A) Alexander River, Big River, Cumberland, Golden Point and Reefton South; B) Langdon's; C) Lyell.

9.5 Trenching

RRPL sampled 65 trenches within the Project (Figure 9-13; Table 9-6), including resampling and/or extension of historical trenches in addition to new trenches. This brings the total number of trenches within the Project to 99 (Table 9-7), of which 28 at Alexander River and Auld Creek (for a total of ~243 m) were used in the current resource estimate reported in Section 14. Trenches were located using a Garmin GPS or surveyed by a professional surveyor using a Trimble real-time kinematic (RTK) GNSS with R10 rover and base units. Positions were checked against 1-m LiDAR contour maps. Trench orientations were measured using tape and a compass. Due to difficulty in obtaining accurate surveyed GPS z values for trenches (due to steep slopes and bush cover), RRPL adjusted trench Z values by draping them onto the LiDAR surface. A full review of the trench data quality is reported in Section 11.5.

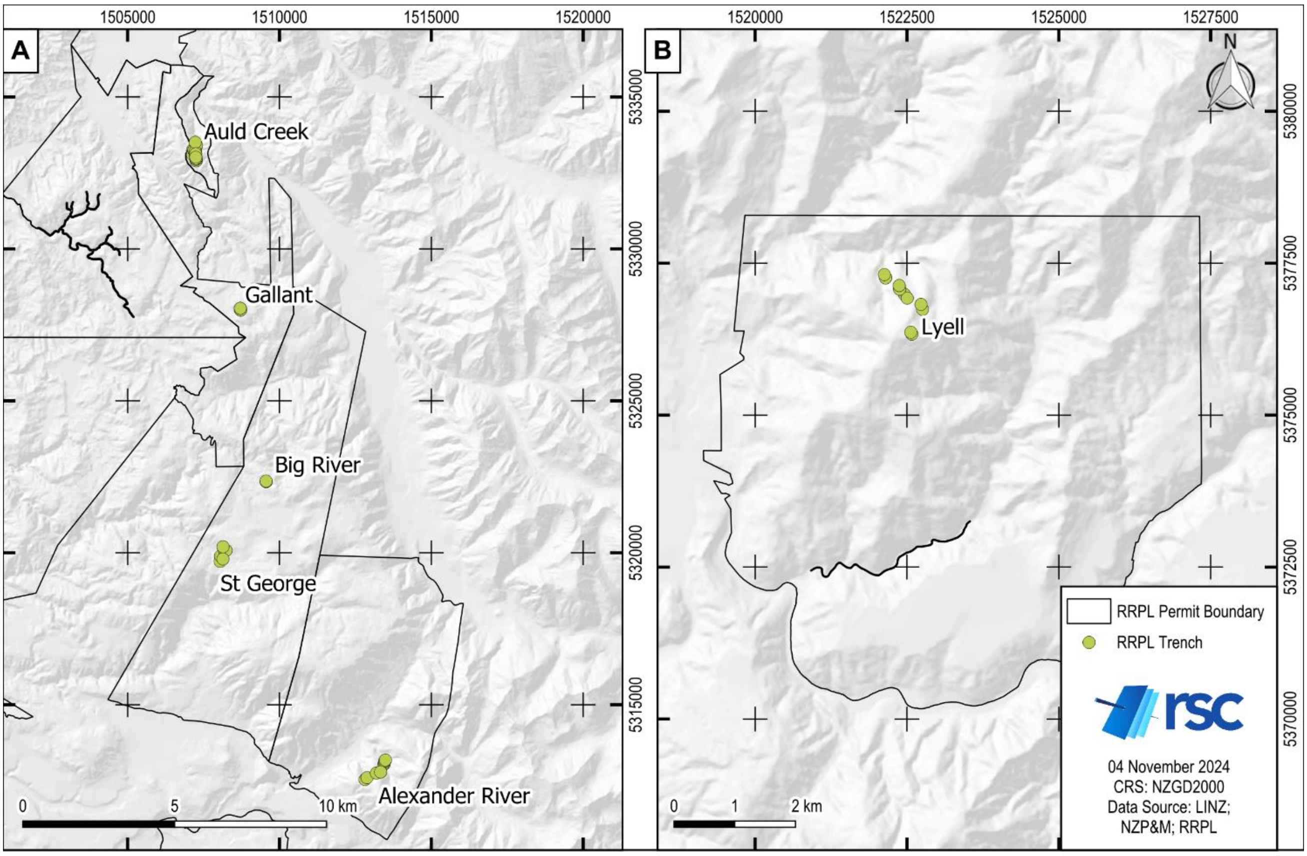


Figure 9-13: RRPL trench locations at the Reefton Project. A) Alexander River, Big River, Cumberland, and Golden Point. B) Lyell.

Table 9-6: Summary of RRPL trenches.

Prospect	Date	No. Trenches	Total Length (m)
Alexander River	2020–2022	10	87.1
Big River	2022	9	126.4
Golden Point	2022–2023	30	241
Cumberland	2023	4	11.1
Lyell	2022–2023	12	68.5
Total		**65**	**534.1**

Table 9-7: Summary of all trenches within the Project

Prospect	No. Trenches	Total Length (m)
Alexander River	31	233
Big River	22	233
Golden Point	30	241
Cumberland	4	11.1
Lyell	12	68.5
Total	**99**	**786**

RRPL carried out chip sampling of trenches using a hammer and chisel, with an average sample size of ~2 kg. Veins were sampled in intervals of 0.3–2.4 m, depending on the width of the outcrop, and averaged ~1 m. Before sampling, outcrops were cleared of debris and alluvial sediments using shovels and hammers to uncover the full extent of the veins. RRPL collected field repeat samples from visible mineralisation at a rate of one per trench. Trenches were treated as drillholes, with collar, survey, lithology, and assay data compiled into an Excel workbook. Trench locations are reported in Table 9-8.

Table 9-8: Trench locations sampled by RRPL.

Permit	Trench ID	Easting (NZTM)	Northing (NZTM)	Elevation (m)	Length (m)	Year	Used in MRE	Comment
Alexander River	AXCH001	1513447.9	5313046.3	563.2	16	2020	Y	New
	AXCH002	1513450.0	5313068.5	543.6	3.5	2020	Y	New
	AXCH003	1513460.3	5313118.9	504	9	2020	Y	New
	AXCH004	1513471.8	5313153.0	496	5	2020	Y	New
	AXCH005	1513489.1	5313183.6	521.7	3	2020	Y	New
	AXTR006	1513331.2	5312784.8	715	6.1	2022	Y	New
	Trench_C	1512817.5	5312538.8	730	11.8	2022	Y	Extended and resampled
	Trench_F	1512881.4	5312598.6	708	10.6	2022	N	Extended and resampled
	Trench_K	1513190.5	5312751.0	782	17	2022	Y	Extended and resampled
	Trench_Ma	1513328.5	5312787.3	711	5.1	2022	Y	Extended and resampled
Big River	SGCS001	1508048.8	5319718.0	663	55	2022	N	New
	SGTR001	1508063.6	5319895.2	652.5	5	2022	N	New

Permit	Trench ID	Easting (NZTM)	Northing (NZTM)	Elevation (m)	Length (m)	Year	Used in MRE	Comment
	SGTR002	1508197.4	5320053.2	678.3	4.5	2022	N	New
	SGTR003	1508244.2	5320080.0	667.9	7.4	2022	N	New
	SGTR004	1508139.7	5319796.3	674.3	17	2022	N	New
	SGTR005	1508142.5	5320197.2	723	13	2022	N	New
	BRCH001	1509565.0	5322342.0	755	8	2020	N	New
	BRCH021	1509558.0	5322347.0	765	2.5	2020	N	New
	BRCH020	1509560.0	5322360.0	763	14	2020	N	New
Golden Point (Auld Creek)	BZTR001	1507181.4	5333135.3	538.3	17.5	2022	Y	Extended (both directions)
	BZTR002	1507146.7	5333151.8	504.1	5.2	2022	N	Extended (eastwards)
	BZTR003	1507165.2	5333226.2	520.1	6.6	2022	N	Re-excavated
	BZTR004	1507137.0	5333225.0	545.2	1.9	2022	N	New
	BZTR005	1507133.0	5333245.1	556.2	4	2022	N	New
	BZTR006	1507161.5	5333183.9	513.1	4	2022	N	New
	BZTR007	1507132.6	5333135.7	539.1	6	2022	N	Re-excavated
	BZTR008	1507190.9	5333106.9	540.6	10	2023	Y	New
	BZTR009	1507199.2	5333067.7	598.9	4	2023	N	New
	BZTR010	1507135.7	5333133.6	531	3.7	2023	N	Re-excavated
	BZTR011	1507140.3	5333104.8	540	5	2023	N	New
	FTTR001	1507243.7	5333075.2	550	13.5	2022	Y	Extended (both directions)
	FTTR002	1507233.6	5333075.9	543	1.5	2022	Y	Re-excavated
	FTTR003	1507234.9	5333166.8	519.3	7	2022	Y	Re-excavated
	FTTR004	1507258.0	5333363.0	467	7.8	2022	N	Extended (westward)
	FTTR005	1507239.1	5333033.5	573.1	12.8	2022	N	Extended
	FTTR006	1507232.2	5333306.0	479	5.6	2022	Y	Extended
	FTTR007	1507177.0	5333243.8	577	7.7	2022	N	Re-excavated
	FTTR008	1507188.2	5333259.8	582.5	9.2	2022	N	New
	FTTR009	1507238.0	5333483.0	438.2	10	2022	Y	New
	FTTR010	1507260.6	5332902.3	606.7	5.7	2022	N	New
	FTTR011	1507259.1	5332953.7	608.2	4	2022	N	Extended (eastern)
	FTTR012	1507267.7	5333411.4	468	8.8	2023	N	New
	FTTR013	1507229.3	5333208.8	517.7	4.8	2022	N	New
	FTTR014	1507228.0	5333509.0	442.3	2.7	2023	N	New
	FTTR015	1507250.3	5332956.5	621.3	11	2023	N	Re-excavated
	FTTR016	1507258.6	5332985.1	597.1	10.5	2023	N	New
	FTTR017	1507240.3	5333131.3	542.2	8	2023	N	New
	FTTR018	1507244.3	5333019.4	563	12.5	2023	N	New
Golden Point	GPTR001	1505138.6	5332875.5	-	30	2023	N	New

Permit	Trench ID	Easting (NZTM)	Northing (NZTM)	Elevation (m)	Length (m)	Year	Used in MRE	Comment
Cumberland	GTTR001	1508720.1	5327988.1	626	2.8	2023	N	New
	GTTR002	1508720.6	5327987.8	626.5	4.3	2023	N	New
	GTTR003	1508711.6	5328042.5	597.5	1.1	2023	N	New
	GTTR004	1508711.8	5328046.1	597	2.9	2023	N	New
Lyell	LYTR001	1522459.4	5376988.0	827	10	2022	N	New
	LYTR002	1522504.9	5376925.7	885	8	2022	N	New
	LYTR003	1522379.5	5377072.5	768	6	2022	N	New
	LYTR004	1522372.2	5377132.9	735	4	2022	N	New
	LYTR005	1522150.2	5377261.4	540	3.15	2022	N	New
	LYTR006	1522579.3	5376334.0	1068.5	13	2022	N	New
	LYTR007	1522563.6	5376365.0	1074.5	1.5	2022	N	New
	LYTR008	1522144.6	5377273.2	537	1.46	2022	N	New
	LYTR009	1522147.9	5377257.9	542	4.05	2022	N	New
	LYTR010	1522127.1	5377312.9	521	5.4	2023	N	New
	LYTR011	1522756.8	5376741.0	884	4.8	2023	N	New
	LYTR012	1522731.1	5376822.7	905	7.1	2023	N	New

At Alexander River, RRPL sampled six new trenches (AXCH001–AXCH006) and extended and resampled four trenches originally sampled by Kent (Trench_C, F, K, and Ma), for a total of 87.1 m and 83 samples. Significant intercepts for the Alexander River trenches are reported in Table 9-9.

Table 9-9: Significant trenching intercepts for Alexander River, full mineralised zone composites (1.5 g/t Au cut-off).

Trench ID	From (m)	To (m)	Interval (m)	Au (g.t)	Mineralised Zone
Trench_A	0	9	9	6.87	LG Bull East
Trench_B	14	19	5	2.72	HG Bull East
Trench_B	19	22.5	3.5	0.28	LG Bull East
Trench_C	6.5	11.8	5.3	2.50	LG Bull East
Trench_C	0	2.5	2.5	2.23	LG Bull East
Trench_E	0	4	4	3.54	McVicar East
Trench_Ea	0	3.2	3.2	4.01	McVicar East
Trench_G	4.3	8.3	4	7.62	McVicar East
Trench_G	9.3	12.3	3	6.04	McVicar East
Trench_H	10	14	4	0.97	McVicar East
Trench_Ja	0	2.1	2.1	11.68	Bruno 1
Trench_K	4	9	5	8.44	Bruno 1
Trench_K	13	15	2	2.36	Bruno 1
Trench_La	0	0.8	0.8	1.95	Bruno 1
Trench_Lc	1.2	2.7	1.5	7.42	Bruno 1
Trench_Ld	0	2	2	5.53	Bruno 1

Trench_M	8	11.2	3.2	6.22	Bruno 1
Trench_Ma	2	4	2	12.66	Bruno 2
Trench_Ma	0	2	2	4.77	Bruno 1
Trench_N	1	4	3	8.51	Bruno 2
Trench_Na	0	1.5	1.5	2.03	Bruno 2

RRPL sampled nine trenches for a total of 126.4 m and 120 samples from the St George, Big River South, and Big River mine areas within the Big River permit area.

As of the effective date, RRPL had completed 30 trenches at Golden Point (29 at Auld Creek), including 16 new trenches, re-excavation of seven historical trenches, and extension of a further seven historical trenches. One trench was excavated at the extrapolated position of the Morning Star reef track, but no mineralisation was observed and no samples were assayed. At Auld Creek, the trenching was successful in defining the strike, extent, thickness, and grade of mineralised shoots (Au + As + Sb) and was consistent with anomalies identified during soil sampling. The significant intercepts are summarised in Table 9-10.

At Lyell, RRPL excavated 12 trenches over 68.5 m and collected 86 samples to expose and sample basement mineralisation. Basement mineralisation was relatively well exposed at Victory but was not reached in LYTR006 at Mt Lyell.

Table 9-10: Significant trenching intercepts for Auld Creek, full mineralised zone composites (1.5 g/t Au cut-off).

Trench ID	From (m)	To (m)	Interval (m)	Au (g/t)	Sb (%)	Mineralised Zone
BZTR001	0	17.5	17.5	1.66	0.67	Bonanza
BZTR004	0	1	1	1.89	0.04	Bonanza
BZTR008	7	10	3	1.86	0.33	Bonanza
BZTR008	1	3	2	2.40	0.03	Bonanza
FTTR001	3.5	11.9	8.4	17.21	5.46	Fraternal 1
FTTR002	0	1.5	1.5	17.10	9.01	Fraternal 1
FTTR003	3	5	2	14.15	12.95	Fraternal 1
FTTR005	9	12.8	3.8	2.75	0.01	Fraternal 1
FTTR018	2.2	6.6	4.4	2.82	0.62	Fraternal 1

10. Drilling

10.1 Summary

As of the effective date of this Report, RUA had not undertaken any drilling in the Project area. The nature and extent of historical drilling undertaken by previous owners are presented in Section 6.3, and some of these data have been used as a basis for the MREs reported in Section 14. In anticipation of the acquisition of RRPL by RUA, drilling undertaken by RRPL is summarised in this section.

RRPL completed a total of 150 drillholes in the Project for a total of 28,898 m (Table 10-1). This brings the total of drillholes (historical and recent) in the Project to 291 for ~48,000 m of drilling. Drillhole collar locations are presented in Table 10-2, Table 10-4, and Table 10-6.

Significant intercepts from full mineralised zone composites are reported in Sections 10.2–10.4. The QP (Sean Aldrich) notes that the true width of mineralisation will be smaller than the downhole width of mineralisation due to the high intersection angles due to DOC consent restrictions necessitating numerous drillholes being drilled from one pad. While the QP (Sean Aldrich) recommends optimising the drill pattern for the reef orientation where possible, it is unlikely that this risk can be mitigated.

Table 10-1: Summary of RRPL drilling at the Project.

Permit	Hole Type	No. Holes	Total Depth (m)	Prospects
Alexander River	Diamond	105	20,241	Bruno Bull Shoot Bull West McVicar East McVicar West Loftus McKay
Golden Point	Diamond	21	2,659	Auld Creek Golden Point
Big River	Diamond	27	5,998	Shoot A2 Shoot 1 Shoot 4
Total		**150**	**28,898**	

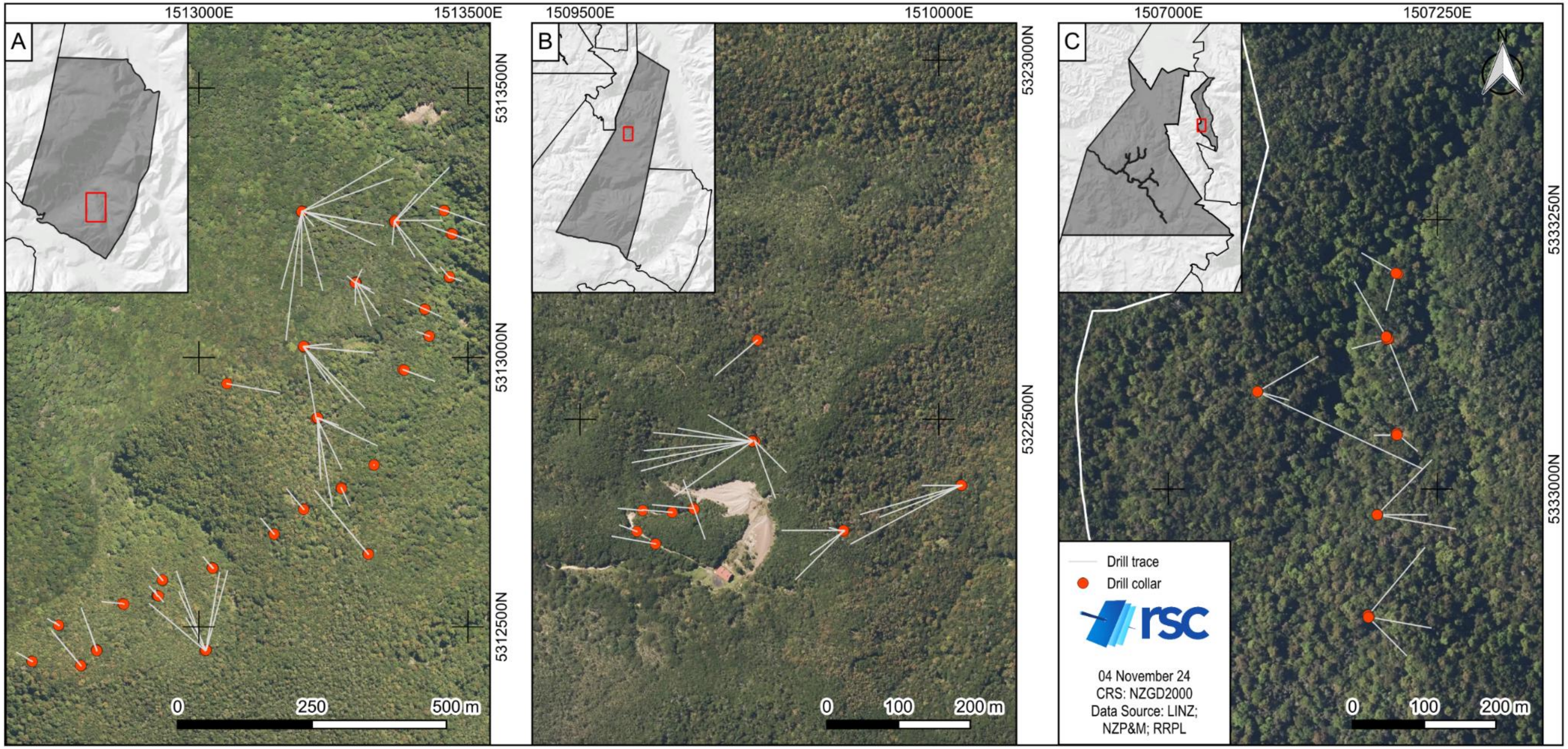


Figure 10-1: Drillhole collar locations at the Reefton Project. A) Alexander River, B) Big River, C) Golden Point.

10.2 Alexander River

As of the effective date of this Report, RRPL had drilled 105 diamond drillholes at Alexander River, totalling 20,241 m (Table 10-2; Figure 10-2). Drilling was conducted by Eco Drilling Ltd, using helicopter-supported Christensen CS1000, CS1500, Boart Longyear LF70, and Novosel Top Drive diamond drilling rigs on both excavated sites and timber pads. RRPL predominantly used PQ (96 mm) for collar sections then HQ to total depth, with NQ for some holes where necessary due to ground conditions. Due to the steep terrain, a regular drill pattern was not adopted; however, where possible, holes were drilled at ~100 m × 50 m centres along the 1.2-km outcropping mineralised zone.

Twenty-six drill pads were set up as part of the drill programme, and most were used to drill multiple holes with different dips and azimuths. PVC drill collars were capped on completion of drilling. Some of the drill pads have been rehabilitated as part of consent or land access agreements.

All drilling used triple-tubed wireline core barrels, and oriented core was collected for all drillholes using REFLEX orientation tools. RRPL completed downhole surveys using a REFLEX EZ-TRAC or a Precision Gyro, taking readings every 15 m.

Initial drilling focused on shallower reefs (e.g. Bruno, McVicar East, and Bull Shoot) to prove the continuation of mineralisation at depth and validate historical drill intercepts. High-grade mineralisation was intercepted at McVicar West, confirming the continuity of mineralisation at depth. A summary of the significant intercepts is reported in Table 10-3.

Table 10-2: Alexander River drillholes.

Drillhole	Easting (NZTM)	Northing (NZTM)	Elevation (m)	Length (m)	Azimuth (º)	Dip (º)
AXDDH008	1513194.4	5312718.7	779.4	96.7	320	-60
AXDDH009	1513194.9	5312718.1	779.1	110.0	320	-82
AXDDH010	1512932.6	5312586.5	737.6	61.2	320	-60
AXDDH011	1512932.6	5312586.3	737.7	70.3	320	-80
AXDDH012	1512932.0	5312587.1	737.6	35.5	320	-50
AXDDH013	1513024.6	5312610.0	732.2	52.8	320	-60
AXDDH014	1513026.7	5312609.0	733.1	84.4	320	-85
AXDDH015	1513025.5	5312609.0	732.6	94.0	320	-75
AXDDH016	1512857.9	5312543.3	742.8	76.5	275	-60
AXDDH017	1512860.4	5312542.1	744.3	122.5	38	-90
AXDDH018	1512739.9	5312502.5	763.3	69.6	310	-82
AXDDH019	1512739.1	5312503.2	762.7	47.1	300	-60
AXDDH020	1512689.2	5312436.6	794.6	64.2	300	-60
AXDDH021	1512690.3	5312435.8	794.7	85.6	296	-85
AXDDH022	1513139.2	5312672.8	769.2	74.2	320	-60
AXDDH023	1513139.8	5312672.1	769.8	112.8	320	-75
AXDDH024	1513264.3	5312758.4	754.4	43.5	155	-90
AXDDH025	1513265.2	5312756.6	753.9	70.3	155	-60

Drillhole	Easting (NZTM)	Northing (NZTM)	Elevation (m)	Length (m)	Azimuth (º)	Dip (º)
AXDDH026	1513325.5	5312800.5	711.1	51.2	130	-90
AXDDH027	1513381.2	5312976.8	623.3	89.4	110	-65
AXDDH028	1513379.6	5312977.4	624.4	117.6	110	-85
AXDDH029	1513379.2	5312977.6	624.7	157.9	110	-90
AXDDH030	1513382.0	5312976.5	622.8	96.5	110	-52
AXDDH031	1513427.1	5313040.2	586.6	49.0	110	-90
AXDDH032	1512781.0	5312427.7	809.5	156.1	320	-63
AXDDH033	1512780.5	5312428.2	809.3	130.0	320	-50
AXDDH034	1513428.3	5313039.6	586.6	88.0	290	-74
AXDDH035	1513419.2	5313090.1	553.7	68.0	115	-60
AXDDH036	1513421.0	5313089.2	552.5	82.6	115	-90
AXDDH037	1513420.0	5313089.5	553.2	156.3	295	-74
AXDDH038	1513472.1	5313229.1	481.3	33.9	110	-70
AXDDH039	1513468.0	5313230.0	480.7	165.1	290	-70
AXDDH040	1513314.5	5312635.4	804.3	120.5	320	-66
AXDDH041	1513314.2	5312635.9	804.0	239.5	320	-50
AXDDH042	1513470.5	5313229.5	481.0	85.7	290	-90
AXDDH043	1513471.0	5313229.3	481.1	72.3	110	-60
AXDDH044	1513314.9	5312634.9	804.6	343.2	320	-70
AXDDH045	1513466.0	5313148.0	496.3	42.4	320	-90
AXDDH046	1513220.0	5312886.5	710.7	235.0	154	-64
AXDDH047	1513465.0	5313149.0	496.3	94.8	320	-75
AXDDH048	1513219.9	5312886.3	710.8	355.1	177	-74
AXDDH049	1513219.3	5312886.8	710.8	280.8	170	-54
AXDDH050	1513465.8	5313149.9	496.2	40.6	110	-55
AXDDH051	1513457.0	5313273.0	477.8	137.6	110	-55
AXDDH052	1513217.9	5312886.7	711.6	282.1	350	-65
AXDDH053	1513456.5	5313273.5	478.0	86.1	110	-85
AXDDH054	1513221.2	5312886.3	710.4	37.8	167	-63
AXDDH054a	1513221.1	5312886.4	710.4	12.0	167	-63
AXDDH054b	1513220.6	5312886.5	710.4	248.5	177	-63
AXDDH055	1513221.9	5312887.5	709.5	271.5	115	-72
AXDDH056	1513455.6	5313272.6	479.0	144.6	290	-80
AXDDH057	1512809.6	5312458.1	801.6	142.5	340	-55
AXDDH058	1513221.0	5312887.5	709.8	92.6	115	-60
AXDDH058A	1513221.2	5312887.8	709.6	243.0	115	-60
AXDDH059	1512810.5	5312456.7	803.8	141.6	340	-71
AXDDH060	1513221.6	5312887.9	709.5	253.0	110	-81
AXDDH061	1513220.5	5312888.2	709.7	311.8	110	-90
AXDDH062	1512810.3	5312455.6	802.4	225.9	340	-90
AXDDH063	1513194.8	5313019.4	676.4	291.4	140	-63

Drillhole	Easting (NZTM)	Northing (NZTM)	Elevation (m)	Length (m)	Azimuth (º)	Dip (º)
AXDDH064	1512810.1	5312455.8	803.8	173.0	340	-82
AXDDH065	1513194.8	5313019.8	676.5	265.9	135	-53
AXDDH066	1512922.0	5312558.2	761.8	74.1	340	-82
AXDDH067	1512922.9	5312557.9	761.8	128.3	320	-83
AXDDH068	1513195.0	5313020.0	675.8	30.0	135	-90
AXDDH068A	1513194.5	5313019.9	675.8	414.2	135	-90
AXDDH069	1512923.4	5312557.6	761.8	124.5	320	-79
AXDDH070	1512924.7	5312557.3	761.8	52.3	140	-75
AXDDH071	1513364.7	5313250.3	547.0	217.6	140	-56
AXDDH072	1513194.2	5313019.6	675.8	344.6	145	-76
AXDDH073	1513364.0	5313250.9	547.0	226.7	150	-71
AXDDH074	1513195.6	5313019.8	675.8	350.9	95	-74
AXDDH075	1513196.3	5313019.8	675.8	311.8	95	-66
AXDDH076	1513363.8	5313253.5	547.0	313.6		-78
AXDDH077	1513194.7	5313020.9	675.8	376.6	85	-82
AXDDH078	1513363.3	5313253.2	547.0	251.2	185	-80
AXDDH079	1513012.8	5312457.6	825.0	278.9	335	-65
AXDDH080	1513291.1	5313138.5	597.0	272.8	160	-72
AXDDH081	1513011.4	5312456.3	825.0	269.9	310	-60
AXDDH082	1513292.3	5313140.0	597.0	247.2	145	-72
AXDDH083	1513012.8	5312456.1	825.0	359.6	10	-66
AXDDH084	1513291.8	5313140.4	597.0	291.1	25	-85
AXDDH085	1513292.0	5313137.5	597.0	296.3	310	-86
AXDDH086	1513011.7	5312456.4	825.0	271.9	340	-55
AXDDH087	1513290.9	5313139.0	597.0	284.3	120	-82
AXDDH088	1513011.6	5312455.6	825.0	217.0	330	-71
AXDDH089	1513193.2	5313270.5	575.6	328.3	100	-69
AXDDH090	1513014.1	5312457.7	825.0	311.9	15	-61
AXDDH091	1513192.3	5313271.3	575.6	403.6	60	-61
AXDDH092a	1513013.1	5312456.7	825.0	161.8	10	-55
AXDDH093	1513191.1	5313269.7	575.6	16.0	165	-68
AXDDH093a	1513190.9	5313270.4	575.6	402.2	165	-68
AXDDH094	1513192.9	5313271.8	575.6	339.3	115	-64
AXDDH095	1513290.9	5313139.7	597.0	287.2	115	-84
AXDDH096	1513364.2	5313254.5	547.0	174.4	90	-60
AXDDH097	1513364.6	5313252.2	547.0	220.2	45	-50
AXDDH098	1513290.5	5313138.6	597.0	79.0	175	-82
AXDDH098A	1513290.8	5313138.6	597.0	290.9	180	-82
AXDDH099	1513192.7	5313271.4	575.6	325.6	100	-62
AXDDH100	1513191.5	5313271.9	575.6	337.7	110	-75
AXDDH101	1513192.9	5313271.3	575.6	391.5	70	-63

Drillhole	Easting (NZTM)	Northing (NZTM)	Elevation (m)	Length (m)	Azimuth (º)	Dip (º)
AXDDH102	1513190.9	5313269.5	575.6	438.3	187	-57
AXDDH103	1513191.0	5313270.6	575.6	383.2	180	-69
AXDDH104	1513191.4	5313270.2	575.6	431.0	195	-70
AXDDH105	1513191.0	5313270.9	575.6	392.2	140	-85
AXDDH106	1513052.1	5312951.4	710.0	437.4	100	-77

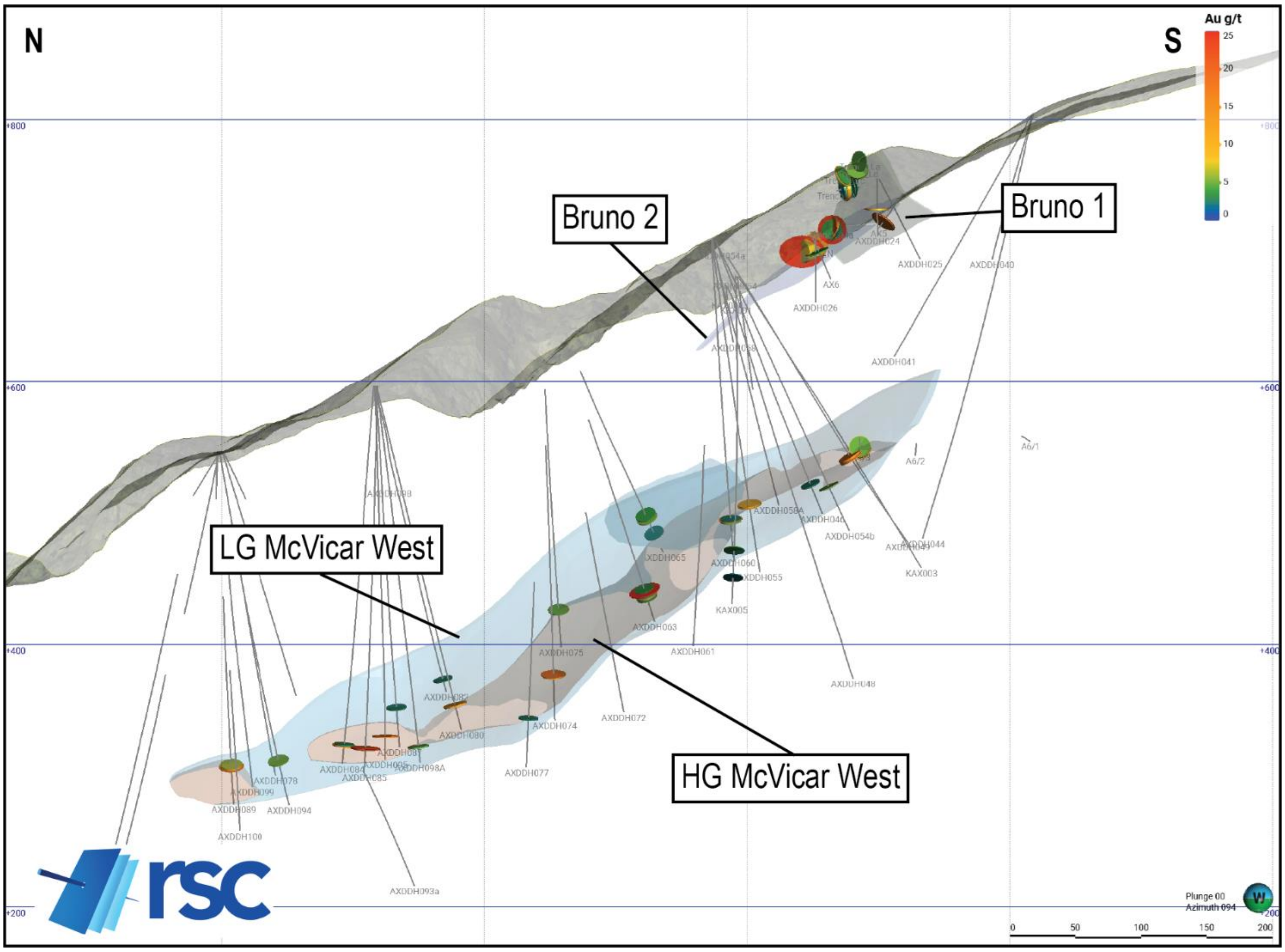


Figure 10-2: Section view illustrating Alexander River drillholes, Au g/t, and veins.

Table 10-3: Significant drilling intercepts for Alexander River, full mineralised zone composites (1.5 g/t Au cut-off).

Hole ID	From (m)	To (m)	Downhole Interval (m)	Au (g/t)	Mineralised Zone
AXDDH008	23.3	28	4.7	2.77	Bruno 1
AXDDH010	28.15	35.34	7.19	6.27	McVicar East
AXDDH012	24.1	34.3	10.2	8.25	McVicar East
AXDDH016	63	69	6	3.04	HG Bull East
AXDDH018	21.2	28.8	7.6	1.50	LG Bull East

Hole ID	From (m)	To (m)	Downhole Interval (m)	Au (g/t)	Mineralised Zone
AXDDH018	28.8	29.8	1	4.18	HG Bull East
AXDDH024	22.84	24.31	1.47	10.14	Bruno 1
AXDDH030	52.52	54.34	1.82	7.28	Loftus-Mckay
AXDDH032	125.8	131.57	5.77	1.80	LG Bull East
AXDDH033	120	125	5	2.56	LG Bull East
AXDDH033	117	120	3	6.07	HG Bull East
AXDDH034	42.95	45	2.05	15.19	Loftus-Mckay
AXDDH036	62.7	65.1	2.4	8.52	Loftus-Mckay
AXDDH045	31	32.6	1.6	41.07	Loftus-Mckay
(includes)	31.45	32.35	0.9	50.6	Loftus-Mckay
AXDDH046	208.6	210	1.4	2.36	LG McVicar West
AXDDH049	198.5	202.57	4.07	12.53	HG McVicar West
AXDDH050	4.25	12	7.75	4.35	Loftus-Mckay
AXDDH055	214.6	217	2.4	6.14	HG McVicar West
AXDDH059	127	133.75	6.75	3.30	HG Bull East
AXDDH060	222.67	223.47	0.8	4.89	HG McVicar West
AXDDH060	221.03	222.67	1.64	4.93	LG McVicar West
AXDDH063	265.5	272	6.5	3.47	LG McVicar West
AXDDH063	264.1	265.5	1.4	25.18	HG McVicar West
(includes)	264.1	264.8	0.7	41.3	HG McVicar West
AXDDH065	226	231	5	2.77	LG McVicar West
AXDDH066	58	74.1	16.1	2.41	McVicar East
AXDDH068A	373	384.85	11.85	1.62	Bull Deep
AXDDH074	312.75	314.36	1.61	11.03	HG McVicar West
AXDDH075	277	281.6	4.6	1.89	HG McVicar West
AXDDH077	337.37	338.37	1	2.51	HG McVicar West
AXDDH079	256	264.95	8.95	2.09	LG Bull East
AXDDH080	253.35	254.15	0.8	1.78	LG McVicar West
AXDDH080	252.18	253.35	1.17	12.73	HG McVicar West
AXDDH081	253.5	254.75	1.25	1.57	LG Bull East
AXDDH082	235.22	237.77	2.55	1.52	LG McVicar West
AXDDH084	275.4	277.9	2.5	248.21	HG McVicar West
(includes)	277.3	277.9	0.6	1460	HG McVicar West
AXDDH085	277.24	279	1.76	14.87	HG McVicar West
AXDDH087	251	256.68	5.68	1.51	LG McVicar West
AXDDH089	293.25	295.5	2.25	9.80	HG McVicar West
AXDDH094	298.32	299.05	0.73	5.33	LG McVicar West
AXDDH095	268.85	269.78	0.93	16.70	HG McVicar West
AXDDH098A	277.6	279	1.4	4.01	LG McVicar West

10.3 Golden Point

RRPL conducted drilling in the Golden Point permit between 2021 and 2024. In total, 21 diamond drillholes were completed, including 18 holes (2,304 m) at the Auld Creek Prospect, targeting the Fraternal and Bonanza East shoots (Figure 10-3). Drilling was conducted by Eco Drilling Ltd, using a CS1000 rig.

Drilling at Auld Creek was conducted from six drill pads, with 2–4 holes drilled from each pad. Hole dips varied from -50 to -90°, and diamond core widths varied from PQ to HQ at depth. A summary of the drill collars is presented in Table 10-4.

RRPL collected oriented core using REFLEX orientation tools. RRPL downhole surveys were completed using a REFLEX EZ-TRAC or a Precision Gyro, with readings taken every 5–15 m.

Due to the orientations of parallel north striking shoots, many holes intercepted both Bonanza and Fraternal 1. Hole ACDDH015 returned 12.4 m @ 5.19 g/t Au and 13.7% Sb from 69.6 m, and 27.4 m @ 3.67 g/t Au from 105 m.

Table 10-4: Auld Creek drillholes.

Drillhole	Easting (NZTM)	Northing (NZTM)	Elevation (m)	Length (m)	Azimuth (º)	Dip (º)
ACDDH004	1507194.2	5332976.5	602.4	142.6	45	-60
ACDDH005	1507194.4	5332976.0	602.6	147.4	100	-60
ACDDH006	1507194.1	5332976.3	602.4	177.4	90	-75
ACDDH007	1507185.6	5332882.9	604.3	154.3	40	-58
ACDDH008	1507186.7	5332881.3	604.1	110	100	-58
ACDDH009	1507185.9	5332881.0	604.1	181.5	135	-74
ACDDH010	1507211.8	5333050.0	565.6	40.8	270	-60
ACDDH011	1507212.1	5333051.6	565.6	161	130	-81
ACDDH012	1507212.5	5333050.2	565.5	39.2	270	-65
ACDDH013	1507203.1	5333139.1	533.6	52	255	-50
ACDDH014	1507204.9	5333139.6	534.5	70.4	255	-90
ACDDH015	1507204.1	5333139.7	534.2	136	158	-58
ACDDH016	1507202.5	5333141.5	533.1	101.9	330	-55
ACDDH018	1507083.0	5333090.3	584.0	262.1	60	-55
ACDDH019	1507082.8	5333090.5	584.0	143.8	115	-50
ACDDH020	1507213.3	5333199.8	584.0	124.3	105	-78
ACDDH021	1507211.6	5333200.4	511.0	146.3	300	-72

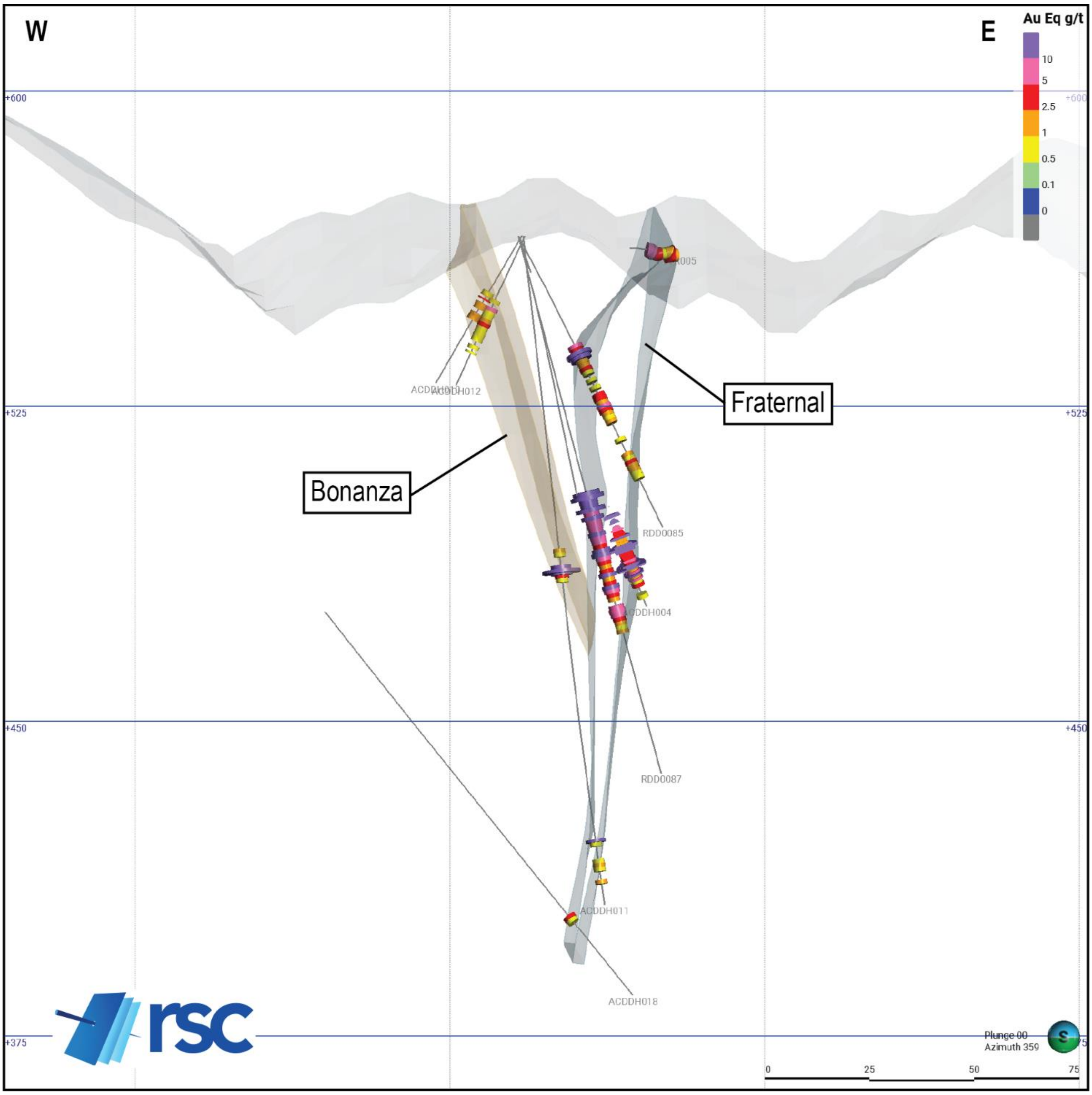


Figure 10-3 : Section view illustrating Auld Creek drillholes, AuEq g/t, and veins.

Table 10-5: Significant drilling intercepts for Auld Creek, full mineralised zone composites (1.5 g/t Au cut-off).

Hole ID	From (m)	To (m)	Downhole Interval (m)	Au (g/t)	Sb (%)	Mineralised Zone
ACDDH004	51.72	57.9	6.18	1.59	0.01	Bonanza
ACDDH004	116.19	136.84	20.65	5.41	2.17	Fraternal 1
ACDDH005	57.66	64.41	6.75	1.64	0.06	Bonanza
ACDDH005	65.8	80.35	14.55	2.07	0.10	Fraternal 1
ACDDH007	123.22	148.45	25.23	3.14	0.07	Fraternal 1
ACDDH008	72.14	76.35	4.21	1.55	0.02	Fraternal 1

ACDDH011	75.3	83.4	8.1	2.73	4.33	Bonanza
ACDDH015	69.6	82	12.4	5.19	13.65	Bonanza
ACDDH015	105	132.4	27.4	3.67	0.20	Fraternal 1
ACDDH016	65	90	25	6.55	0.29	Bonanza

10.4 Big River

RRPL had completed two phases of drilling within the Big River permit, for a total of 27 diamond holes (5,998 m; Table 10-6; Figure 10-4). The drilling was typically helicopter-supported diamond drilling on excavated sites and timber pads using Christensen CS1000 and Borat Longyear LF70 rigs. RRPL drilled seven drillholes using a track-mounted Novosel Top Drive rig along an access track. All drilling was conducted by Eco Drilling Ltd. Drilling was typically PQ for collar sections then HQ to total depth, with NQ used in some locations due to ground conditions.

RRPL collected oriented core for all drillholes using REFLEX orientation tools and conducted downhole surveys using a REFLEX EZ_TRAC or a Precision Gyro, with readings taken every 15 m.

Drilling at Big River was planned to test three different mineralisation shoots, A2, Shoot 1, and Shoot 4. RRPL drilled two holes into Shoot 1 to test the northern margin of the historical workings and validate historical intercepts. However, only low–medium grade intercepts were returned, consistent with historical reports that the shoots in this area are broken up.

At Shoot A2, BRDDH020 intercepted a 4-m stope (possible mined quartz reef) and returned 7 m @ 3.21 g/t Au from 24 m.

RRPL drilled additional holes at Shoot 4 to test the previous OGL holes, including BRDDH027, which intercepted 7.2 m @ 4.22 g/t Au from 141 m and 3.8 m @ 1.90 g/t Au from 150 m. All significant intercepts from the RRPL drilling programme are reported in Table 10-7.

Table 10-6: Big River drillholes.

Drillhole	Easting (NZTM)	Northing (NZTM)	Elevation (m)	Length (m)	Azimuth (º)	Dip (º)
BRDDH020	1509579.3	5322344.0	757.7	50.5	-60	290
BRDDH021	1509605.3	5322326.7	754.8	122.5	-60	280
BRDDH022	1509587.4	5322373.2	759.7	68.3	-60	275
BRDDH023	1509628.5	5322370.5	762.8	82.5	-60	275
BRDDH024	1509657.8	5322376.2	764.5	113.2	-60	275
BRDDH025	1509867.0	5322345.5	785.3	148.5	-55	270
BRDDH026	1509868.2	5322344.9	785.4	135.1	-45	225
BRDDH027	1509868.9	5322345.2	784.8	163	-69	235
BRDDH028	1509868.1	5322343.8	785.3	151.4	-82	285
BRDDH029	1509867.2	5322345.5	785.4	281.2	-90	285
BRDDH030	1509658.3	5322376.6	764.6	83	-60	340
BRDDH031	1509659.1	5322375.1	764.5	87.9	-60	160
BRDDH032	1509743.2	5322470.6	787.3	257.3	-76	135
BRDDH033	1509743.6	5322469.4	787.4	146.3	-55	160
BRDDH034	1510031.4	5322407.9	730.0	407.4	-69	254
BRDDH035	1510032.5	5322408.0	730.0	444.6	-74	249
BRDDH036	1509739.8	5322469.0	787.5	230.5	-55	235
BRDDH037	1509740.4	5322469.6	787.5	302.7	-60	265
BRDDH038	1509740.1	5322469.7	787.6	248.2	-50	255
BRDDH039	1509740.1	5322469.5	787.5	338.5	-72	280
BRDDH040	1509740.5	5322470.6	787.3	314.7	-77	300
BRDDH041	1509740.0	5322469.7	787.5	15	-65	275
BRDDH041A	1509740.1	5322469.6	787.4	326.6	-65	275
BRDDH042	1509739.7	5322469.4	787.4	269.1	-51	260
BRDDH043	1509747.3	5322610.4	746.9	398.05	-79	230
BRDDH044	1510032.5	5322408.0	730.0	452.8	-83	270
BRDDH045	1510031.4	5322408.5	730.2	359.1	-61	242

Table 10-7: Significant drilling intercepts for Big River, full mineralised zone composites (1.5 g/t Au cut-off).

Hole ID	From (m)	To (m)	Downhole Interval (m)	Au (g/t)	Mineralised Zone
BRDDH020	24	31	7	3.21	Shoot A2
BRDDH022	38	39.44	1.44	2.01	Shoot A2
BRDDH025	71	73	2	2.29	Shoot 4 Upper
BRDDH025	88	89	1	1.74	Shoot 4 Lower
BRDDH026	112.1	113	0.9	2.81	Shoot 4 Lower
BRDDH026	107.75	109.6	1.85	1.86	Shoot 4 Upper
BRDDH027	141	148.2	7.2	4.22	Shoot 4 Upper
BRDDH027	150	153.8	3.8	1.90	Shoot 4 Lower
BRDDH029	233.8	234.41	0.61	2.00	Shoot 4 Upper

Hole ID	From (m)	To (m)	Downhole Interval (m)	Au (g/t)	Mineralised Zone
BRDDH034	358	373.85	15.85	1.67	Shoot 4 Lower
BRDDH035	374.75	382.3	7.55	2.81	Shoot 4 Lower
BRDDH037	213.23	218.4	5.17	6.83	Shoot A2
BRDDH040	280.1	281.77	1.67	1.55	Shoot A2
BRDDH042	189	191	2	2.08	Shoot A2
BRDDH045	337	346	9	1.79	Shoot 4 Lower
BRDDH045	292	294	2	1.64	Shoot 4 Upper

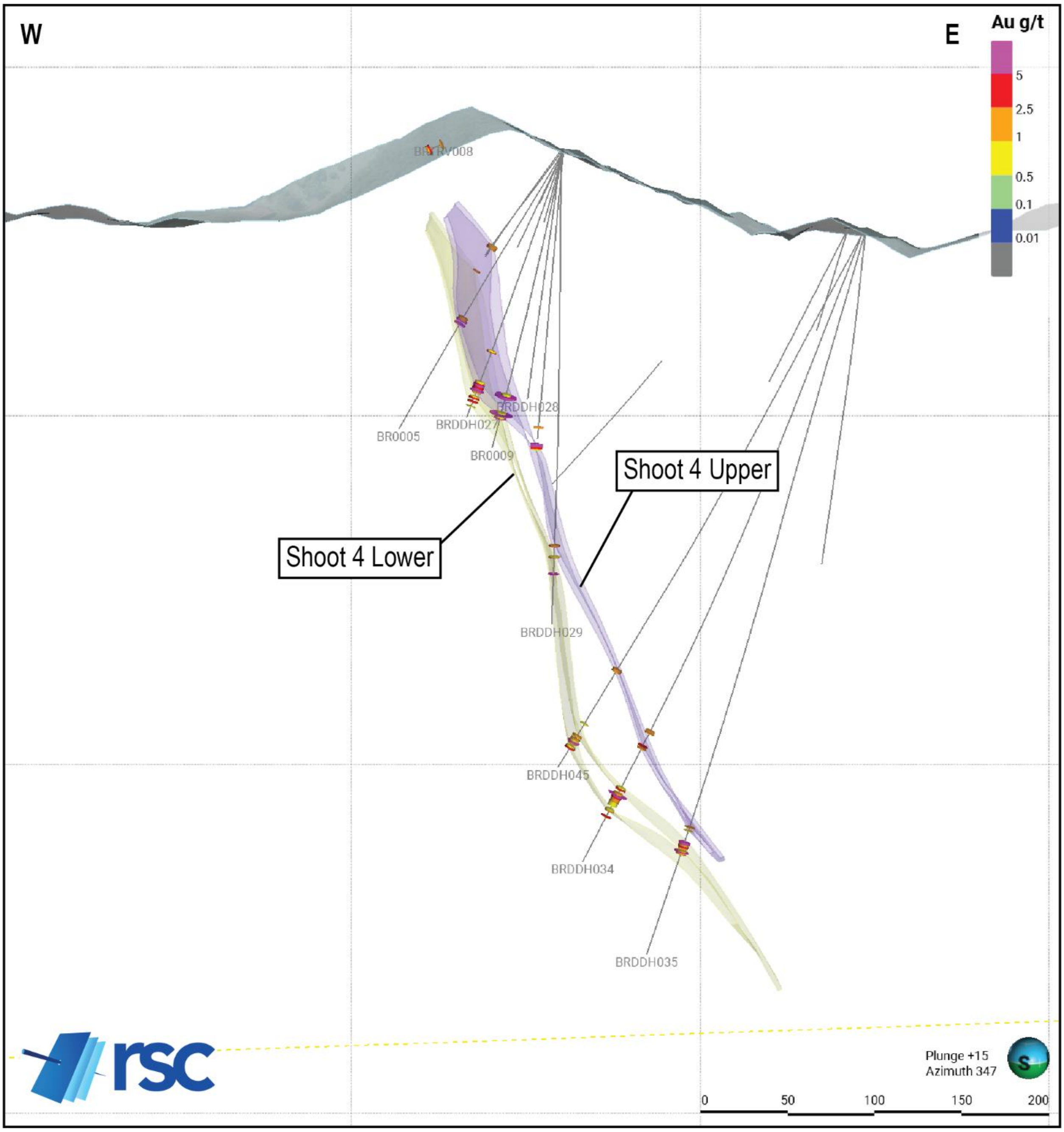


Figure 10-4 : Section view illustrating Big River drillholes, Au g/t, and veins.

11. Sample Preparation, Analyses & Security

As of the effective date of this report, RUA had not undertaken any exploration activities on the Project.

The nature and extent of sample preparation and analyses undertaken by RRPL and previous owners, and on which the mineral resources reported in Section 14 are based, are presented in Section 6.3. For the sake of clarity and transparency, relevant aspects of the RRPL and historical sampling and analyses that were used to underpin the current resource estimate (presented in Section 14) are summarised in this section (11).

11.1 Sample Preparation

11.1.1 Soil Samples

Soil sample points were loaded onto a handheld GPS for guidance, and actual locations were marked and recorded using GPS in the field. Soil augers or spades were used to acquire a ~300-g sample, which was put in a wet-strength paper sample bag with wire ties. Samples were typically collected from the B or C horizons, although sample depths varied. Samples were logged on Excel spreadsheets in the field, including sample ID, depth, colour, horizon, slope, sample description, sampler, basement, and comments. Samples were sent to SGS Westport for sample preparation, then pulp samples were sent to SGS Waihi for Au analysis. At SGS Westport, the samples were dried for 24 hours and crushed to pass 2 mm. The crushed sample material was split using a rotary splitter before a subsample pulverised to 75 µm.

For ionic leaching, 120-g samples were collected and sent to ALS Ireland in sealed bags in an as-collected state. Soil samples were typically collected at 10–15 cm below the soil surface, regardless of regolith/landform, topography, and variability in soil profiles, ensuring that specific soil horizons or soil profile features were not selectively sampled. The first 5–10 cm of the soil profile was typically discarded to eliminate surface debris, including loose organic matter and potential contamination. When discarding the first 5–10 cm was problematic, samples were collected nearer the surface and their positions noted for later assessment if the soil profile was atypical of the survey area. A 50-g aliquot was collected, but no additional sample preparation was performed as the samples were analysed in an as-collected state.

For ultrafine sampling, soil augers were used to acquire 200–300 g clay samples from the first clay layer intercepted and put in wet-strength sample bags. Samples were sent to LabWest in Malaga, Western Australia, for preparation, where 40 g of soil was settled in water with a dispersant, and a minimum of 0.2 g of the 2 µm fraction was collected for assay.

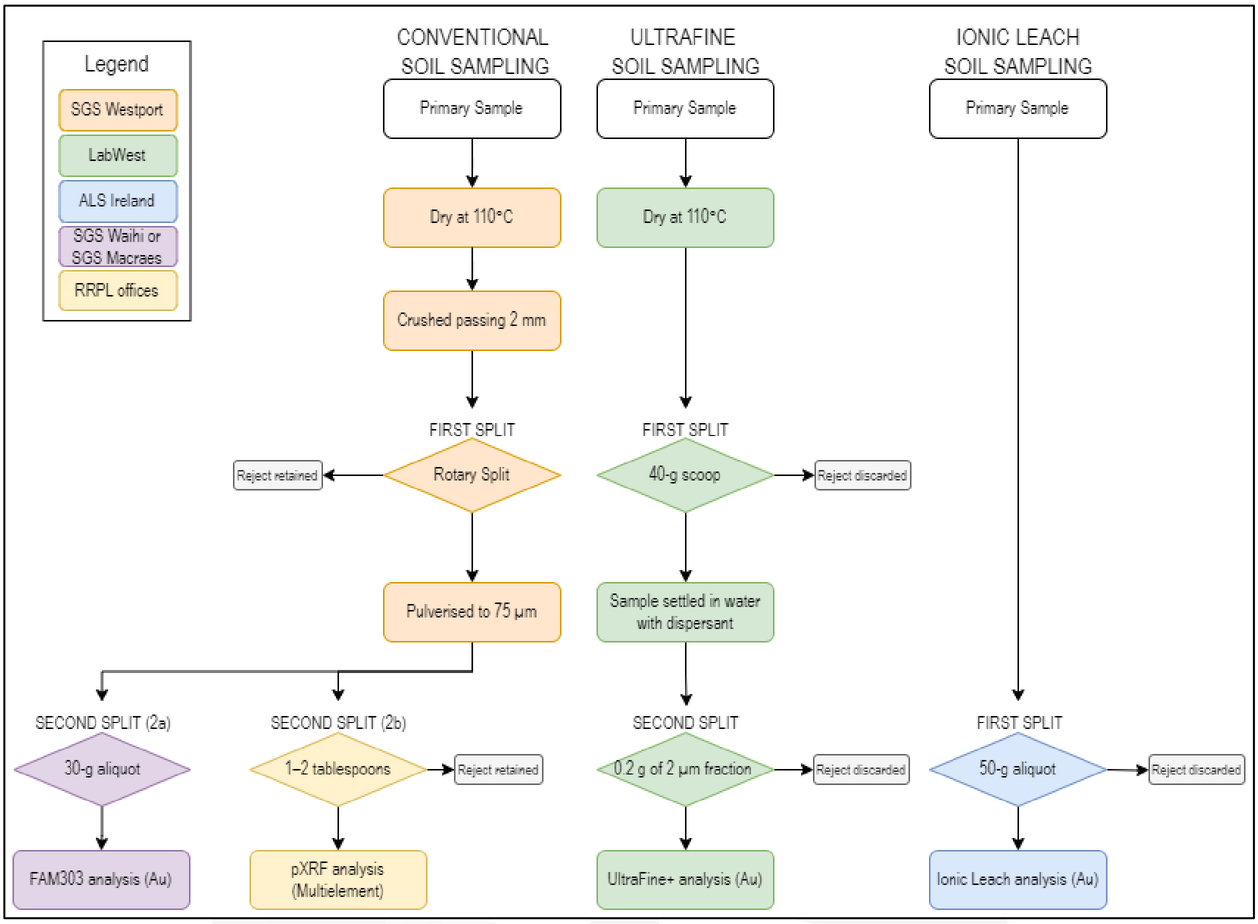


Figure 11-1: Flowchart outlining soil-sample splitting procedures.

11.1.2 Rock-Chip Samples

Samples of ~0.5–1 kg were collected and described in the field before being analysed by pXRF for a first-pass indication of elements of interest (e.g. Au, As, Sb, Cu, Pb, Zn). Relevant samples were sent to SGS Westport for preparation with Au certified reference materials (CRMs), then to SGS Waihi for analysis. At SGS Westport, the samples were crushed to 2 mm and then pulverised to 75 µm. If the samples were larger than 1 kg, they were split using a rotary splitter prior to being pulverised.

11.1.3 Core Samples

Drillholes were selectively sampled according to industry standard, typically 4–5 m on either side of an area of interest or known zone of mineralisation. Diamond core was used to obtain samples for geological logging and sampling. Cores were photographed and cut in half lengthways using a core saw in intervals of 1 m, unless determined otherwise by lithology (e.g. quartz vein contacts). Maximum and minimum sample lengths of 1.2 and 0.15 m, respectively, were collected. All half-cut core samples were placed in poly-weave sacks and delivered to SGS Westport for preparation before being shipped to SGS Waihi or SGS Macraes Flat for Au assay.

Core samples were dried and then crushed to a nominal 90% passing 2 mm. If required, samples were split using a rotary splitter to 250 g, with the coarse residue retained and the remaining split pulverised to 90% passing 75 µm in a vertical spindle pulveriser. A 1-kg barren sand flush was pulverised, and compressed air was used to clean all crushers and grinders after every sample with visible Au.

11.1.4 Trench Samples

Trenches were located with a Garmin 66i GPS using the waypoint averaging function for 30 minutes, and positions were checked against 1-m LiDAR contour maps. Trenches were treated as drillholes, with collar, survey, lithology, and assay data compiled into a validated database. Chip sampling of trenches was completed using a hammer and chisel, with an average sample size of ~2 kg, and field duplicate samples were taken from visible mineralisation at a rate of one per trench. Sample intervals were typically 1 m, but intervals of 0.2–1.2 m were collected to allow for geological contacts. Trench samples were stored in calico bags and sent to SGS Westport for preparation, which comprised drying, crushing, splitting (if required), and pulverising to obtain an analytical sample of 250 g, with >95% passing 75 µm.

11.2 Analysis

11.2.1 Laboratory Analysis: Soil Samples

Analysis of conventional soil samples was undertaken at SGS Waihi by 30-g fire assay with an inductively coupled plasma mass spectrometry (ICP-MS) finish (SGS method FAM303; Table 11-1), with a detection range of 1–2,000 ppb.

Ionic leach analysis was undertaken by ALS Ireland (ALS method ME-MS23; Table 11-1). Analysis involved the collection of 50-g samples direct from the field bags with no pre-treatment. The lack of drying and sieving reduced the possibility of contamination, and processing was carried out in a dedicated ionic preparation laboratory. A sample to reagent ratio of 1:1 was used, which eliminates dilution prior to analysis, and allows for very low detection limits to be achieved (0.01 ppb Au).

Ultrafine analysis was undertaken by LabWest (LabWest Ultrafine^{+} method; Table 11-1) and involved analysis of the reactive 2-µm clay fraction by microwave digestion and ICP-MS for Au and 48 other elements.

SGS Waihi, ALS Ireland, and LabWest are independent of RRPL and RUA.

11.2.2 Laboratory Analysis: Rock-Chip Samples

Rock-chip samples were sent to SGS Waihi for Au analysis by 30-g fire assay with AAS finish (SGS method FAA303; Table 11-1), or screen fire assay (SGS method FAS30K) if visual Au was present. Samples were fused with a Pb oxide flux at 1,000°C, and a Pb button containing Au and Ag was recovered. The button was then cupelled in a magnesia cupel and the doré prill recovered, which was transferred to a Pyrex test tube and digested in HNO_3 to dissolve the Ag. Hydrochloric acid was added to generate aqua regia, which dissolved the Au. The resultant solution was diluted with demineralised water and mixed thoroughly. After the AgCl had precipitated and the solution was free of sediment, it was read for Au on an AAS instrument against Au standard calibration solutions prepared from 99.9999% pure Au metal. Data were reported with an accuracy of ±15% to reflect the sample preparation component and particulate Au in the assay process.

SGS Waihi is independent of RRPL and RUA.

11.2.3 Laboratory Analysis: Core Samples

Diamond drill core samples were sent to SGS Waihi and SGS Macraes Flat for Au analysis. Samples were analysed for Au by 30-g fire assay with AAS finish (SGS method FAA303; Section 11.2.3; Table 11-1), and screen fire assays (SGS method FAS30K) were used if there was visible Au in the core. The detection limit for FAA303 and FAS30K was 0.01 g/t Au.

Multi-element assays were carried out at SGS Townsville using an MA-4 digest (G400), which involved nitric/hydrochloric/perchloric/hydrofluoric acid digestion in a Teflon vessel. A sample charge (typically 300 mg, but variable according to mineral type) was digested to near dryness (fuming $HClO_4$) and then leached with HCl and diluted with demineralised water, mixed, and the elements determined by either inductively coupled plasma optical emission spectroscopy (ICP-OES) or ICP-MS. Detection limits varied for each element but were 1 ppm for As and 0.1 ppm for Sb.

SGS Waihi, SGS Macraes Flat, and SGS Townsville are independent of RRPL and RUA.

11.2.4 Laboratory Analysis: Trench Samples

Samples were sent to SGS Waihi and SGS Macraes Flat for Au analysis. Samples were analysed for Au by 30-g fire assay with AAS finish (SGS method FAA303; Section 11.2.4; Table 11-1), and screen-fire assays were used if visible Au was noted by the RRPL geologist.

Trench samples were analysed was conducted using the same CRMs as those used in core sampling (Section 11.2.1;

Table 11-3). Blanks were inserted at the start of the sample chain for each trench, and field duplicate samples were taken at a ratio of one per trench over visually mineralised intervals. Samples were submitted with a CRM.

SGS Waihi and SGS Macraes Flat are independent of RRPL and RUA.

11.2.5 Portable X-Ray Fluorescence

Multi-element analysis was undertaken by pXRF on core, soil, trench and rock-chip sample pulps returned to RRPL after Au analysis. An RRPL SOP (*RRL_pXRF_SOP*) was used for the operation and analysis of samples and detailed the steps involved in collecting multi-element data using this method (summarised below).

A plastic teaspoon was used to scoop material from the sample pulp into a sample cup with 4 µm polypropylene film. Sample cups were filled to approximately ¾ full (~1–2 tablespoons) and tapped to form a smooth surface against the film. Sample cups were cleaned between uses by wiping with alcohol wipes or alcohol (e.g. ethanol) on soft tissues.

Pulp samples were analysed in batches, as per laboratory submissions, using an Olympus M-Series Vanta pXRF instrument with a 4-W, 50-kV rhodium anode in Geochem3-AuTe mode, with 20 s for each of the three beams. In total, 42 elements were analysed, and the analytical run was initiated with three CRMs and one blank. A CRM was then analysed every 20 pulp samples, and a blank was analysed every 50 samples. Analyses were repeated at a rate of 1 in every 20 samples. The instrument was operated using a field test stand and a laptop with Vanta PC Software. The approach adopted by RGL followed industry best practice, as outlined in Fisher et al. (2014) and (Gazley and Fisher, 2014).

The pXRF data, including QC analyses (e.g. blanks, CRMs, replicates, and repeats), were exported off the instrument and compiled into a master Excel workbook.

Core was analysed by pXRF during logging for a multi-element suite including As and Sb at 1-m intervals, with more detailed analysis around zones of interest. The SOP (*RRL_pXRF_SOP)* stated that the core should be analysed for 10–15 s, using the trigger to manually start and stop the analysis. The QP (Sean Aldrich) notes that this is much shorter than the full test time of 60 s when using three beam mode, and stopping the analysis after 15 s would mean beams two and three were not engaged. The QP (Sean Aldrich) does not consider this best practice, and the data will only be indicative only. Results for each interval were recorded both on the core and in the geology log, and these data were used to select the intervals for laboratory analysis. The QP (Sean Aldrich) notes that Sb is difficult to analyse using a pXRF, and a 50 kV beam mode is required.

The pXRF analysis of pulps and drill core was completed in-house by trained RRPL staff. RRPL is independent of RUA.

Table 11-1: Summary of laboratory method codes for assay and geochemical analyses.

Analysis Type	Sample Type	Laboratory	Method	Description
pXRF	Soil, rock-chip, score, trench	RRPL	-	pXRF of <2-mm pulp samples
Fire Assay	Core, trench, rock-chip	SGS Waihi/ Macraes Flat	FAA303	30-g charge, AAS finish
Fire Assay	Soil	SGS Waihi/SGS Macraes Flat	FAM303	30-g charge, ICP-MS
Screen Fire Assay	Core	SGS Waihi/ Macraes Flat	FAS30K	30-g charge, 75 µm, lead collection
Multi-Element Assay	Core	SGS Townsville	IMS40Q, ICP40Q, ICP41Q	DIG40Q four-acid digest, ICP-MS finish
Ionic Leach	Soil	ALS Ireland	ME-MS23	Sodium cyanide leach
Ultrafine	Soil	LabWest	Ultrafine+	Microwave digestion, ICP-MS, OES

11.3 Density & Moisture Content

Density assessments were conducted based on core drill samples in the Big River, Alexander River, and Golden Point (Auld Creek) permits. Details of the data used for calculations are given in Table 11-2. No density or moisture measurements had been completed in the other permit areas as of the effective date of this report. The QP (Sean Aldrich) noted that the RRPL SOP (*RRL SG SOP*) confuses specific gravity (SG) and in-situ bulk dry density, but the procedure was otherwise consistent with the common-practice water displacement method described by Lipton and Horton (2014).

Table 11-2: Sample information for bulk density assessments.

Permit	Number of Samples	Median Core Length (m)
Alexander River	494	0.12
Big River	97	0.13
Golden Point (Auld Creek)	106	0.12

Bulk density was calculated automatically using the RRPL Density Master worksheet when water temperature, dry weight, and wet weight data were input. The bulk density calculation was completed in two steps.

1. The weight of the water volume displaced was divided by the water density to account for the temperature difference.
2. The mass (dry weight) was divided by the volume of water displaced (wet weight, corrected for temperature).

Measurements were collected from competent diamond drill core. Geological domains were determined according to different lithologies and degrees of weathering, and samples were collected from the same domain in different drillholes at varying depths, and from both unmineralised host rock and mineralised ore zones. Sample lengths were 10–25 cm and could be cut to fit within this range. The QP (Sean Aldrich) noted that there is likely to be some potential for selection bias toward more competent pieces of core.

11.4 Security

Samples collected for laboratory analysis were securely packaged on site and transported to SGS Westport by RRPL staff for sample preparation. All samples were stored in a locked core shed until dispatch. Sample sheets for submission to SGS were in both paper and digital form. The submission of samples is detailed in the *RRL_SWP Core Logging* SOP. While the QP (Sean Aldrich) did not observe the dispatch of samples during the site visit, the QP (Sean Aldrich) notes that the samples were held in a secure core shed.

Future drilling programmes will likely be helicopter supported. Core will be flown out as required to a staging area or directly to a core handling area. The QP (Sean Aldrich) recommends RRPL develops an SOP covering sample transport and chain-of-custody details to capture this process once drilling details and logistics have been confirmed.

11.5 Data Quality

11.5.1 Data Quality Objective

Every data collection process implicitly comes with expectations for the accuracy and precision of the data being collected. Data quality can only be discussed in the context of the objective for which the data are being collected. In the minerals industry, the term ‘fit for purpose’ is typically used to convey the principle that data should suit the objective. In the context of data quality objectives (DQOs), fit for purpose could be translated as ‘meeting the DQO’.

Projects are at different stages in each of the RRPL permit areas. The near-term goals of the work programmes for the Project area are typically focussed on target identification and resource classification. MREs have been completed for

Alexander River, Big River, Auld Creek (Golden Point), and Supreme (Cumberland), and if the potential of further exploration targets proves sufficient, the exploration data collected are intended to support further classification to at least Inferred. This classification objective sets a requirement for the quality of the data and determines the DQO.

Trench and diamond drill core samples were the predominant sampling methods conducted for use in delineating mineral resources; therefore, only these methods are discussed in Sections 11.5.2 to 11.6.

11.5.2 Quality Assurance

Quality assurance (QA) is about error prevention and establishing processes that are repeatable and self-checking. The simpler the process and the fewer steps required the better, as this reduces the potential for errors to be introduced into the sampling process. This goal can be achieved using technically sound, simple, and prescriptive SOPs and management systems.

In discussing the suitability of QA systems for the data collection that might underpin a future MRE, and the potential impact of these processes on the resource classification, the QP (Sean Aldrich) applied the process summarised in Figure 11-2. This summary discusses whether:

1. processes are clearly documented in an SOP and represent good practice;
2. the SOP includes clearly defined data quality objectives;
3. the SOP includes clear details on quality control (QC) measures; and
4. the site visit confirmed adherence to the SOPs.

For each part of the sampling, preparation, and analytical process, a comment on the expected associated risk with respect to resource classification is provided.

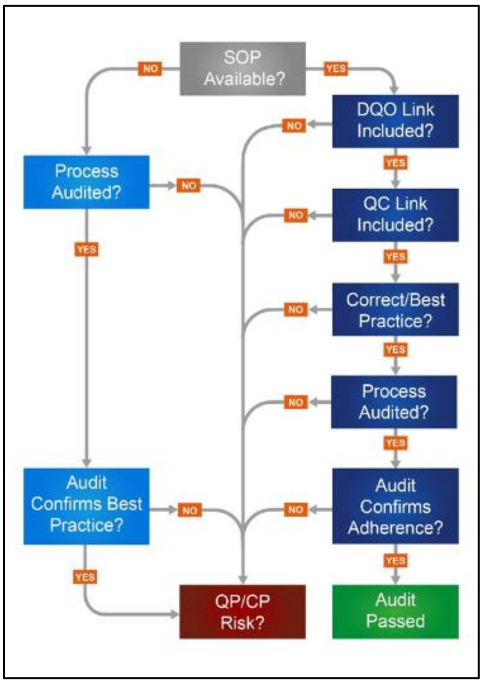


Figure 11-2: Flow chart of RSC's QA review process.

11.5.2.1 Diamond Drilling Samples

11.5.2.1.1 Collar Location

An SOP regarding the collection of collar location data was not available for review. The RRPL and OGL drillhole collars were surveyed by a professional surveyor using a Trimble real-time kinematic (RTK) GNSS with R10 rover and base units. The measured accuracy of these surveys was between position 0.05 m, height 0.10 m when RTK lock was achieved, and position 0.5 m, height 1–2 m when RTK lock was not possible. OGL drillholes were surveyed using a mixture of GPS and the process described above. The QP (Sean Aldrich) notes that the GPS was prone to large errors (~5 m) and recommends resurveying (using differential (D)GPS) all collars surveyed by GPS.

The collar location collection process was not audited by the QP (Sean Aldrich). However, the QP (Sean Aldrich) considers that collar location pick-up processes pose limited risk for the intended resource classifications.

11.5.2.1.2 Downhole Orientation Survey

An SOP covering the downhole survey procedures was not available for review. Downhole surveys on RRPL and Kent drillholes were conducted using a REFLEX EZ-TRAC downhole instrument or a Precision Gyro. OGL drillholes were surveyed using a single-shot digital camera or REFLEX EZ-TRAC every 30 m. RRPL's drilling contractors surveyed the diamond drillholes at 15-m intervals, following the manufacturer's instructions for operating the survey tool. Downhole surveying was conducted by the drilling contractors; however, this process should ideally have been monitored by the rig geologist. RRPL did not have an SOP for downhole surveys, but instrument output files provided by RRPL indicated that quality checks were in place, including pass/fail checks. The process was not audited by the QP (Sean Aldrich); however, based on discussions between RRPL geologists and the QP (Sean Aldrich), the QP (Sean Aldrich) considers that there is low risk with respect to the DQO, and this has been considered when classifying the mineral resources.

11.5.2.1.3 Bulk Density

An RRPL SOP detailing the measurement of bulk density was available for review. The procedure describes a standard process that is consistent with the water displacement method described by Lipton and Horton (2014). The process was not audited by the QP (Sean Aldrich), but RRPL geologists showed the QP (Sean Aldrich) the set-up, documentation, and QC checks (water temp, weights). The method used by RRPL was prone to minor selection bias, and the QP (Sean Aldrich) recommends trying alternative methods as a check, such as calliper-based methods.

Based on the SOP and observations made by the QP (Sean Aldrich), the QP (Sean Aldrich) considers that the bulk density measurement process poses a low risk with respect to the DQO.

11.5.2.1.4 Primary Sample

An SOP detailing the drilling of diamond core was available for review. The SOP briefly covered aspects of logistics, preparation, safety around the drilling campaign, downhole surveying, and core recovery. However, the SOP did not note the minimum recovery required or provide guidance for dealing with low recoveries.

The QP (Sean Aldrich) did not audit the drilling operations, as no drilling was taking place during the site visits. The QP (Sean Aldrich) did check core boxes while undertaking verification sampling (see section 12.3) and compared recoveries in the database with core photos.

Based on the SOP and observations made by the QP (Sean Aldrich), the QP (Sean Aldrich) considers that the core recovery process poses a low risk with respect to the DQO.

11.5.2.1.5 First Split

The first split for the diamond core occurred in the core shed when cutting the core in half. An SOP regarding the first split was available to review and stated that core was sampled along 1-m intervals, except in zones of distinct mineralisation (e.g. quartz veins or sulphide enrichment), where the sample interval was adjusted for lithological breaks; pXRF was used to help determine mineralised zones. The SOP also stated minimum and maximum sample intervals of 0.15 and 1.2 m, respectively; however, the drilling database indicated samples as long as 1.8 m were recorded. The remaining half core was retained in the core tray for future reference and check analyses.

All core sizes (PQ, HQ, and NQ) were half-core sampled. The QP (Sean Aldrich) recommends updating the SOP to include different procedures for core with different diameters. In the case of NQ core, the QP (Sean Aldrich) suggests the core should be sampled in full, rather than following the procedure of sampling half core.

The marking, selecting, and cutting procedures were not audited by the QP (Sean Aldrich). However, the QP (Sean Aldrich) reviewed the remaining core, sample marks, and sampling documentation during the site visit. The SOP stated core should be cut perpendicular to features of interest (e.g. shearing, faulting, significant veins, and stockworks), and in the absence of these features, core should be cut perpendicular to the rock fabric. During the site visit, the QP (Sean Aldrich) reviewed sections of cut core, which indicated the SOP was followed. However, the QP (Sean Aldrich) recommends marking and cutting core along the orientation line (or a few degrees off it to preserve the line) and consistently sampling the same half of the core, in line with industry best practice, to ensure no sampling bias is introduced. In core drilling campaigns where core orientation is not carried out or where it is difficult to align core in broken zones, this may lead to cut lines that are biased to preserve visible Au in the core, potentially leading to biased sampling.

Based on the SOP and observations made by the QP (Sean Aldrich), the QP (Sean Aldrich) considers the first-split process to pose a moderate risk with respect to the DQO. The QP (Sean Aldrich) recommends making changes to the core-cutting procedures at the Project to minimise the risk of introducing selection bias.

11.5.2.1.6 Second Split

Crushing of the sample and the second split occurred at SGS Westport. The crushing parameters were set to ~90% passing 2 mm, which is a standard passing for this step. A ~1-kg split was collected by SGS Westport. An SOP for this second-split process was not available to review; however, SGS Westport is an ISO/IEC 17025-accredited laboratory, and although there is some residual risk with this part of the process not having been audited by the QP (Sean Aldrich), the QP (Sean Aldrich) is conversant with SGS laboratories and its SOPs around the world and considers the risk associated with the second-split procedures to be low.

11.5.2.1.7 Third Split

Following crushing and splitting, SGS Westport pulverised the samples to 85% passing 75 µm before taking a 30-g split for analysis. An SOP for this third-split process was not available for review. The QP (Sean Aldrich) did not audit the third split but is familiar with SGS's SOPs. In the opinion of the QP (Sean Aldrich), the risk associated with the third-split procedure is low.

11.5.2.1.8 Analytical Process

Pulverised diamond core samples were analysed for Au at SGS Waihi or SGS Macraes Flat. No SOP for the analytical process was available for review, and the process was not audited. However, SGS Waihi and SGS Macraes Flat are ISO 17025 accredited and, although there is some residual risk with the process not being audited, the QP (Sean Aldrich) is familiar with SGS laboratories and their procedures and considers the risk associated with Au analysis to be low with respect to the DQO.

Selected samples from Big River and Alexander River were sent to SGS Townsville for multi-element analysis by 4-acid digest with ICP-MS or ICP-AES analysis, and a selection of samples from Auld Creek was sent to ALS Brisbane for Sb analysis. No SOPs outlining the multi-element or Sb analytical process were available to review from either SGS Townsville or ALS Brisbane.

Multi-element analysis of returned core pulps was completed by RRPL geologists using an Olympus M-series Vanta pXRF and following RRPL's SOP for pXRF analysis. The SOP provided prescriptive steps on how to analyse a sample using the pXRF and included screenshots of the device software. The QP recommends also adding photographs to demonstrate the pXRF set-up with test stand, laptop, sample cups, etc.

The SOP outlined a robust process of collecting QC data (e.g. analysing blanks, CRMs, and repeat samples as well as collecting a replicate measurement) but failed to outline what to do with the QC data once collected (e.g. use the CRM data to calibrate the pXRF data). The pXRF analytical process was not audited by the QP (Sean Aldrich). The QP (Sean Aldrich) considers that the risk associated with the pXRF analytical process is low; however, the risk associated with data handling and processing is moderate to high, as there is no written procedure to correct or calibrate the pXRF data.

11.5.2.2 Trench Samples

11.5.2.2.1 Trench Location

An SOP outlining the process to determine the location of the trench samples was not available for review. Following discussions with RRPL geologist, trench locations were picked out by compass and tape measure, then a handheld GPS or registered surveyor was used to determine the coordinates. The trench location collection process was not audited by the QP (Sean Aldrich); however, the QP (Sean Aldrich) considers that there is low risk for surveys conducted by a professional surveyor and some risk for surveys collected using GPS. The QP (Sean Aldrich) recommends the trenches located by GPS are resurveyed by a professional surveyor.

11.5.2.2.2 Primary Sample

The trenches were typically dug by hand (with the exception of a couple that used an excavator), and samples were collected using a geological hammer. An SOP outlining this process was not available for review. The QP (Sean Aldrich) did not audit the collection of the primary sample. Based on a discussion of the sampling procedures with RRPL geologists, the QP (Sean Aldrich) considers the collection of the trench primary samples to be low risk with respect to the DQO.

11.5.2.2.3 First Split

An SOP outlining the first split was not available for review. The first split was conducted at SGS Westport, where the sample was crushed to 2 mm then split using a rotary splitter. SGS Westport is an ISO/IEC 17025-accredited laboratory. Although there is some residual risk with this part of the process not having been audited by the QP (Sean Aldrich), the QP (Sean Aldrich) is conversant with SGS laboratories and its SOPs around the world and considers the risk associated with the first-split procedures to be low.

11.5.2.2.4 Second Split

The second split was conducted at SGS, where the sample was pulverised, and a scoop was used to collect the aliquot (30 g) for analysis. An SOP for the second split was not available for review. The QP (Sean Aldrich) did not audit SGS preparation facilities or the second-split process. The QP (Sean Aldrich) is familiar with SGS laboratories and its procedures; therefore, the QP (Sean Aldrich) considers the collection of the second split to be of a low risk with respect to the DQO.

11.5.2.2.5 Analytical Process

Pulverised trench samples were analysed at SGS (Waihi or Macraes Flat) for Au by fire assay (FAA303). An SOP outlining the analytical procedures was not available for review; however, the QP (Sean Aldrich) is conversant with SGS laboratories and its analytical methods. As both laboratories are ISO/IEC 17025 accredited, the QP (Sean Aldrich) considers the risk associated with the analytical process to be low.

11.5.3 Quality Control

The purpose of QC is to detect and correct errors while a measuring or sample-collection system is in operation. The outcome of a good QC programme is that it can be demonstrated that errors were fixed during operation and that the system delivering the data was always in control. Together with good QA (covered in Section 11.5.2), it ensures that the DQO is met.

Good QC is achieved by inserting and constantly evaluating checks and balances. These checks and balances can be incorporated at every stage of the sample process (location, primary sample collection, preparation, and analysis) and, if in place, should be monitored during data collection, allowing the operator to identify and fix errors as they occur.

11.5.3.1 Diamond Drilling Samples

11.5.3.1.1 Collar Location

QC of the collar location data, as derived from a combination of drillhole collar positions and downhole surveys, should occur on site as surveys are being conducted by performing check measurements and applying performance thresholds. RRPL collected multiple hand-held GPS measurements at each collar and validated the collar coordinates against high-resolution LiDAR imagery. The QP (Sean Aldrich) recommends RRPL record the repeat GPS measurements to allow quantitative assessment of the quality of the location data. However, based on the SOP and LiDAR verification, the QP (Sean Aldrich) is of the opinion that the risk associated with the quality control on collar location is low with respect to the DQO.

11.5.3.1.2 Downhole Survey

The quality of the downhole surveys was monitored via communication between the drilling contractors and RRPL geologists.

No quantitative control data (e.g. magnetic field strength, magnetic dip, gravity) were recorded over the course of the drilling programme to monitor the quality of the downhole survey data. The Precision Gyro survey device seeks out true north with no risk of magnetic interference and has internal QC procedures that flag surveys as failed if certain parameters exceed predetermined limits. The downhole surveys and the associated QC aspects were managed by the drillers. Because the downhole equipment software used with the Precision Gyro and REFLEX EZ-TRAC is easy to operate, and because it auto-validates the survey data, the QP (Sean Aldrich) considers the downhole survey process to have been in control throughout the programme.

11.5.3.1.3 Density

Water temperature was measured for each sample. Before each batch, a piece of reference HQ core of a known weight was measured to check the scales were performing well; however, these data were not recorded and were thus unavailable for review. Therefore, the QP (Sean Aldrich) is unable to determine whether the density data collection was in control.

The QP (Sean Aldrich) recommends improving the digital record-keeping of this process and introducing the collection of repeat weight measurements to allow quantitative assessment of the quality of the density data.

11.5.3.1.4 Primary Sample

The primary sample was collected at the drill bit. The quality and consistency of the primary sample for diamond drilling was monitored, by proxy, by assessing the core recovery. The drillers used drill blocks to record drill recovery, and these were checked by RRPL geologists during core mark-up. When poor core recovery was identified by the geologist, the geologist would alert the drillers. The QP (Sean Aldrich) recommends documenting this process more clearly in the SOP, including guidelines regarding what is acceptable core recovery.

The QC data, by proxy of recovery data, indicate that the diamond drilling process was predominantly in control for Alexander River and Big River. Recovery at Auld Creek was not always in control, with step-drops and out-of-threshold recoveries demonstrated throughout the different parts of the drilling campaign (Figure 11-3C). The decrease in sample recovery (moving average) corresponds to poor recoveries linked to certain drillholes (ACDDH010, ACDDH013, and ACDDH016). In response to the poor drill recovery, especially for the mineralised zone, RRPL re-drilled ACDDH010 on a slightly different angle using different techniques (e.g. different mud mix). The re-drilled hole was ACDDH012.

Cyclic dips in the recovery correspond to the start of new holes, as the ground was typically more weathered at the surface. The QP (Sean Aldrich) considers that there is a low risk associated with the diamond core sampling consistency with respect to the DQO.

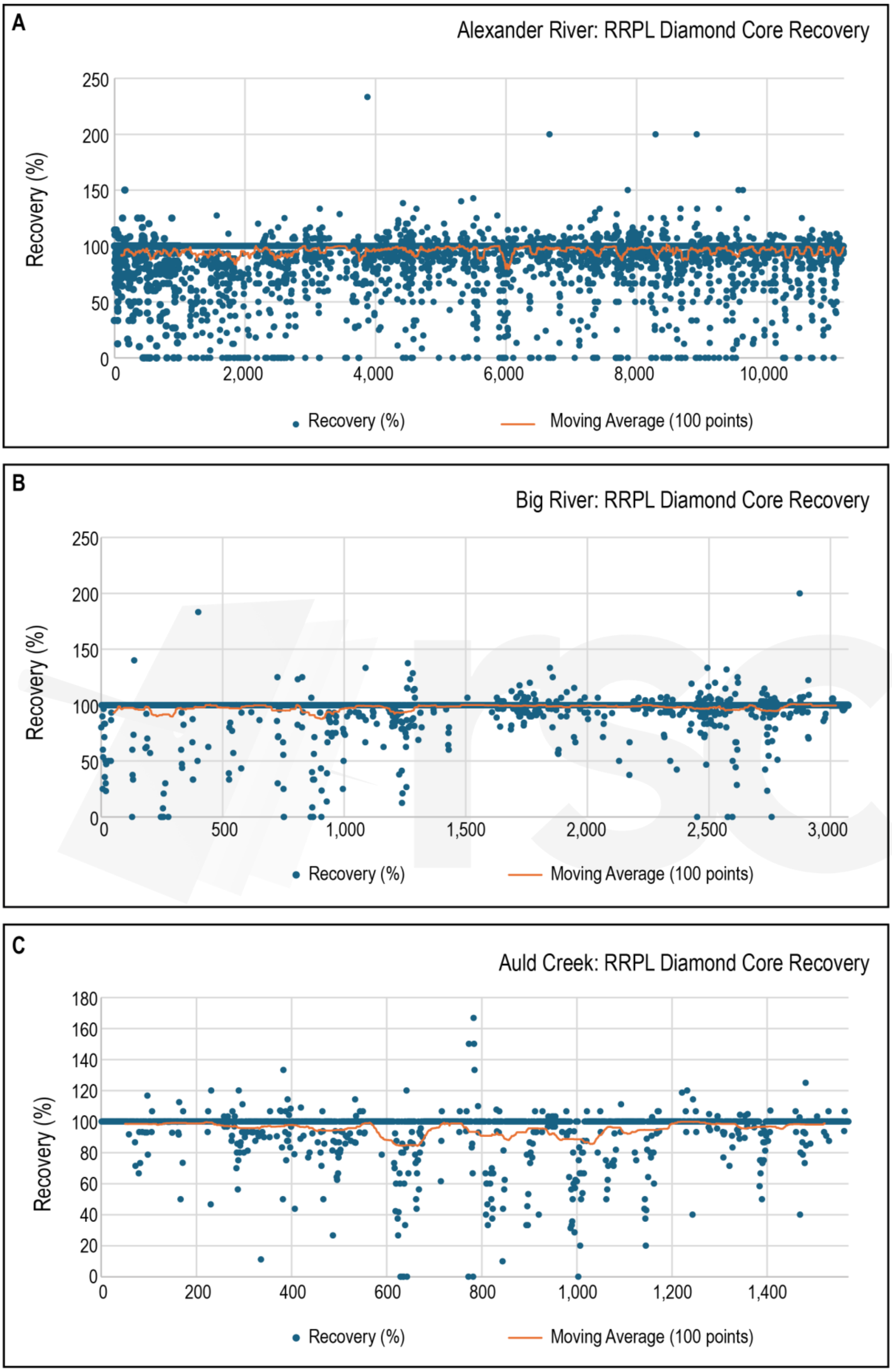


Figure 11-3: Sample recovery for A) Alexander River, B) Big River, and C) Auld Creek.

11.5.3.1.5 First Split

The quality of the first splitting process is typically monitored by the collection of duplicate or repeat samples. The consistency of the splitting process can be broadly assessed by tracking the RD of the duplicate or repeat pairs over time.

RRPL collected quarter-core 'duplicate' samples during its Alexander River, Big River, and Auld Creek drilling campaigns. Quarter-core 'duplicate' samples were submitted to SGS for the same preparation and analytical methods as the primary core samples. Due to the limited number of sample pairs for each deposit, the data are reviewed together here.

The RD between the half and quarter cores ranges from approximately -80% to +110%. No trends or step jumps are observed in the duplicate pairs (Figure 11-4), indicating the splitting process was in control; e.g. no evidence of preferential sampling of sides of the core were observed.

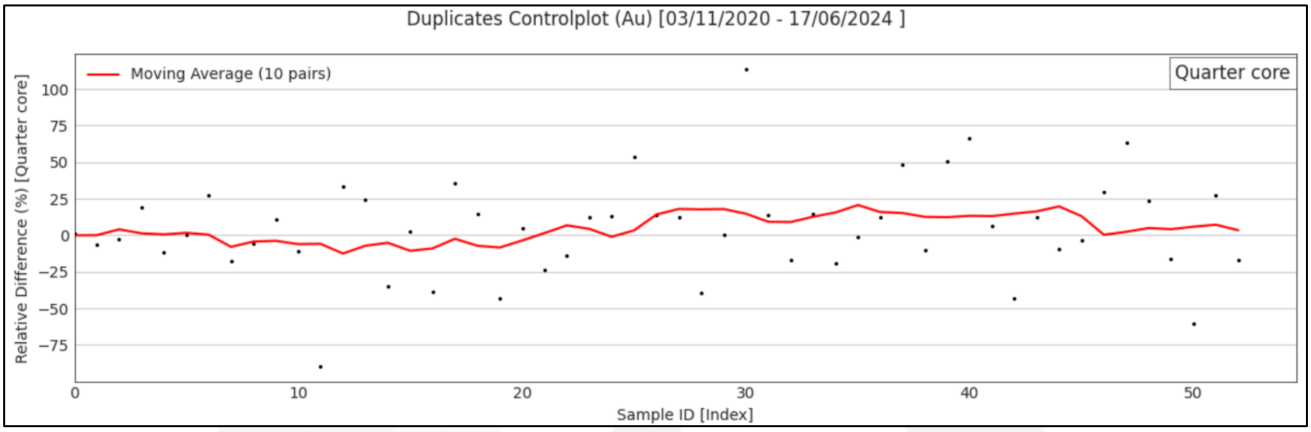


Figure 11-4: Relative difference in Au grades between quarter-core duplicate samples plotted against time. Gold was analysed by FA303 at SGS Waihi/Macraes Flat.

11.5.3.1.6 Second Split

No second-split duplicates of core samples were collected during the crushing stage; therefore, the QP (Sean Aldrich) cannot determine if the second-split process was in control. In the QP's (Sean Aldrich) opinion, this is acceptable for the purpose of delineating exploration targets and low-confidence MREs. The QP (Sean Aldrich) recommends collecting second-split repeat samples for any future resource-delineation drilling programmes from the same samples that have core-split duplicates.

11.5.3.1.7 Third Split

Further reduction of the drill-core sample (pulverisation) was carried out at the laboratory, after which another split was collected. SGS Westport collected a duplicate sample at a frequency of one per batch. The RD between sample pairs reporting above the Au LOQ (0.1 g/t Au), as a broad indication of splitting control, is depicted in Figure 11-5. The RD plot does not exhibit any trends or step jumps. The RD in Au grade between the third split repeat pairs is -42% to +19%.

Pulp-repeat samples collected from the pulp bag were also analysed by pXRF. No major trends or step changes are observed in the RD plots for As, which indicates the RD in As grade between the third-split repeat pairs is -27% to +28% (median 0%). In contrast, the RD plots for Sb exhibit a positive bias, with a median RD of +7% in analyses conducted by pXRF SN841694 (Figure 11-6). Analyses conducted by pXRF SN843701 do not have any trends or step jumps and yield a median RD of +1% Sb. A review of other elements (including Al, Ca, Fe, and Si) analysed by pXRF SN841694, conducted at the same time, indicates no trends. Antimony can be more difficult for a pXRF to accurately measure due to interference with Ca for the K_α peak and the location of the higher energy peaks in the area of high background in the spectra.

Based on the third-split repeat pairs, the QP (Sean Aldrich) considers the third-split process to have been in control.

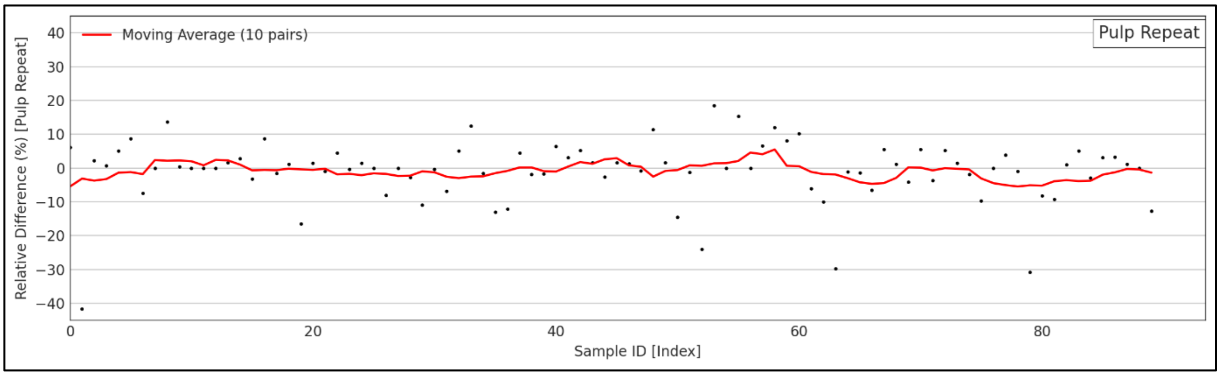


Figure 11-5: Relative difference in Au grades between the original and third-split repeat pairs against time (core samples only). Gold was analysed by FA303 at SGS Westport and Waihi.

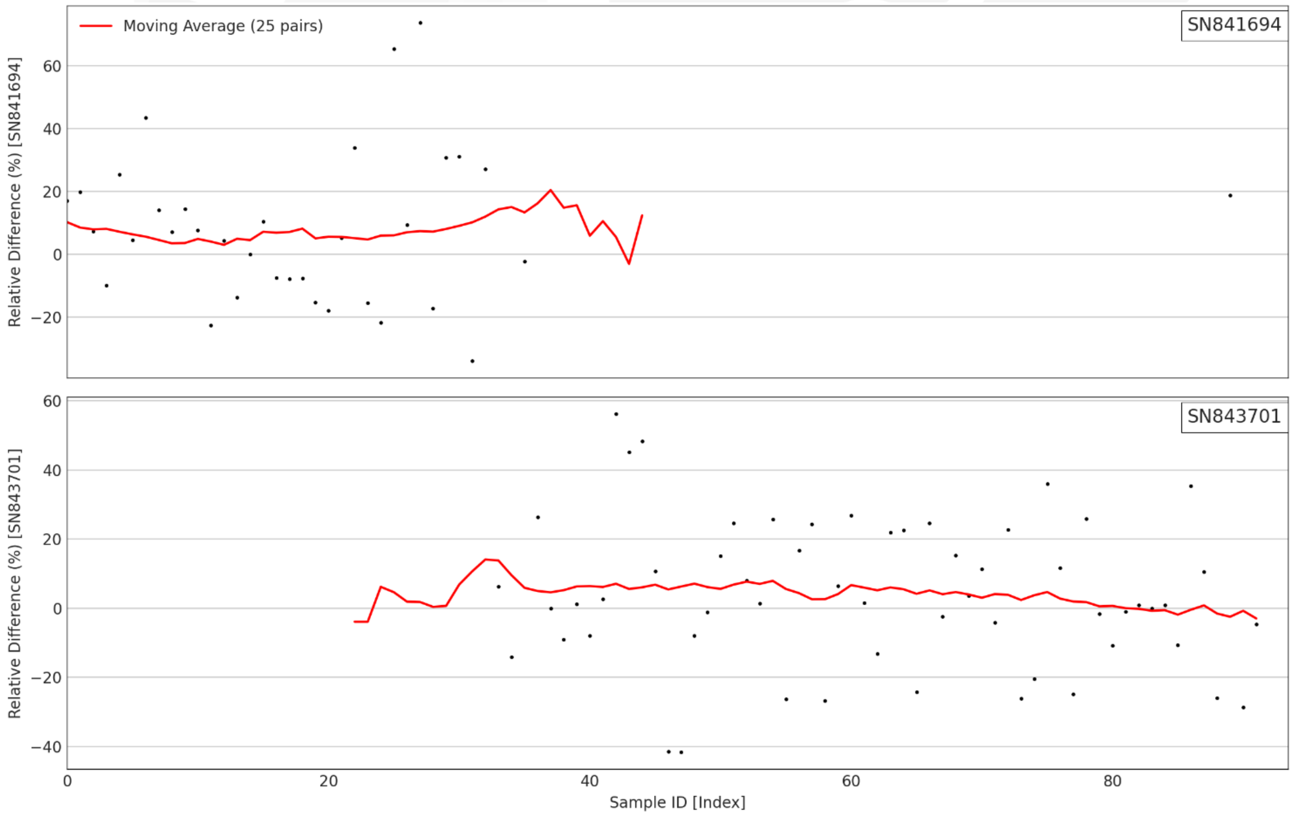


Figure 11-6: Relative difference in Sb grades between the original and third-split duplicate pairs against time (core samples only). Antimony was analysed by pXRF at the RGL office.

11.5.3.1.8 Analytical Process: SGS

QC of the analytical process involves the repeated and continuous evaluation of CRMs. As part of its requirements under ISO accreditation, the laboratory inserts such reference materials into the sample stream, evaluates these, and makes corrections to the system when errors occur. The QP (Sean Aldrich) notes that the analytical results of the IRM used by the laboratory were typically already corrected (e.g. QC had already taken place, the system stopped when transgressions were identified, and the values were replaced by new and correct values).

It is common in the minerals industry for companies to submit their own (disguised) CRMs. However, in the QP's (Sean Aldrich) experience, this only achieves its intended purpose when the data are immediately and properly analysed and correct decisions are drawn from the data. The timeframe between analysis and evaluation of the results means that correcting a system in real-time is not possible; therefore, QC cannot be effectively carried out.

At least one blank was submitted per drilling instruction/drillhole. Two blanks were typically included, one as the first sample and one placed between predicted higher-grade samples. If the submission included fewer than 15 samples, only one blank was typically submitted. Blank samples consisted of coarse basalt sourced from Blackhead Quarry, Dunedin. Quartz washes were inserted after any samples with visual Au. At the start of the programme, two CRMs were included per submission; later, after RRPL reviewed its QC procedures, RRPL inserted a CRM after every 20 samples. A lab repeat sample was requested every 25 samples. SGS undertook one lab repeat per submission.

RRPL inserted 10 certified Rocklabs CRMs (

Table 11-3) to monitor the quality of the analytical process. If a CRM was reported outside the limits accepted by RRPL (three times the standard deviation), the job was repeated by SGS. The QP (Sean Aldrich) conducted an a posteriori review of the CRM data to determine the consistency of the analytical process that delivered the data.

The control on the analytical process was assessed using RSC's in-house QC tool. Westgard rules 1x3s, 2x2s, 4x1s, 7x and 6t (Table 11-4) (Westgard et al., 1981) were used for the detection of special-cause variation.

Westgard rule violations, indicating the presence of special-cause variation, are reported in all CRMs, except for SH41 (Figure 11-7). The most common rule violation was 1x3s, where one or more analyses were reported outside three times the standard deviation.

All CRM analyses were plotted on a heat map to identify periods in which multiple CRMs exhibited special-cause variation. Heat maps were overlain on results for all CRMs alongside the average fail rate per CRM on a given date. This approach addresses the problem faced, where some CRMs exhibit special-cause variation while others for the same batch/period do not. The heat map approach is a more pragmatic and holistic approach; it enables the periods in which multiple transgressions occurred across various CRMs to be identified and provides a more practical way to evaluate whether there was an issue with consistency at the laboratory. The heat-map approach also illustrates the importance of having CRMs that span a representative portion of the grade range to assess whether issues at the laboratory were consistent across the grade range. A review of the heat map indicates that six analyses across three CRMs failed over a two-day period in January 2022.

Table 11-3: Certified reference materials inserted by RRPL during analysis.

CRM	Source	Certified Value Au (ppm)	Standard Deviation	Number of Analyses
SG66	Rocklabs Ltd	1.086	0.032	35
SL51	Rocklabs Ltd	5.909	0.136	52
SJ53	Rocklabs Ltd	2.637	0.048	60
SN50	Rocklabs Ltd	8.685	0.180	52
SK52	Rocklabs Ltd	4.107	0.088	5
SH41	Rocklabs Ltd	1.344	0.041	34
SL61	Rocklabs Ltd	5.931	0.177	48
Si54	Rocklabs Ltd	1.780	0.034	28
SE68	Rocklabs Ltd	0.599	0.013	30
SF57	Rocklabs Ltd	0.848	0.030	10

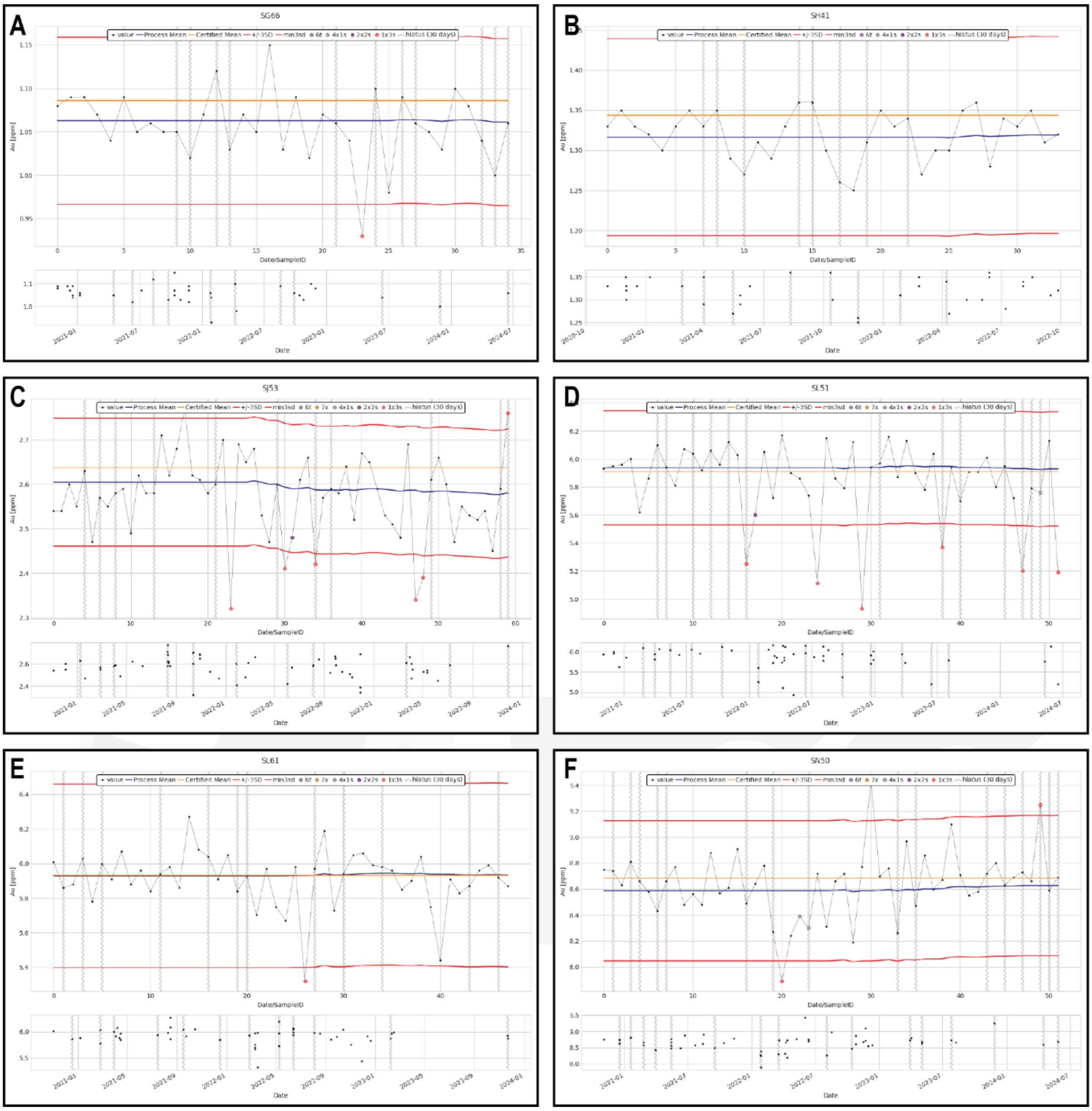


Figure 11-7: Control plots for A) SG66, B) SH41, C) SJ53, D) SL51, E) SL61, and F) SN50, analysed for Au.

RRPL inserted 291 coarse sample blanks across the various work orders for the Alexander River, Big River, and Auld Creek drilling programmes. Most samples returned an Au grade below the LOQ (0.1 g/t Au); however, four returned Au grades at or above the LOQ. These four samples were assayed within a short timeframe from one another (less than one month), all in different batches or workorders, with other blanks inserted at the same time performing well. RRPL monitors the QC samples as they are returned, and three of the four batches that included a blank reporting >0.1 g/t Au were re-assayed by SGS by fire assay. The fourth blank in question was analysed by screen fire assay, and the batch was not re-assayed.

In the opinion of the QP (Sean Aldrich), the practice of reviewing the CRM and blank data and re-assaying a batch if it does not meet certain thresholds is excellent; however, the QP (Sean Aldrich) recommends re-assaying original blanks that fail during a programme of re-analysis, rather than just the primary sample material. Overall, the QP (Sean Aldrich) considers the analytical process to have been largely in control, and any demonstrated special-cause variation was considered by the QP (Abraham Whaanga) in classifying the resource.

11.5.3.1.9 Analytical Process: pXRF

Soil, core and trench sample pulps were analysed by RRPL using pXRF. Procedures for QC varied among the projects; however, QC samples were inserted in the sample stream at a frequency of 1 in 25 to 1 in 40. Where no significant Sb (<5,000 ppm) was expected, CRMs OREAS 903, OREAS 245, and OREAS 277 were used. Where Sb concentrations were expected to be elevated, CRMs OREAS 292 (4.5% Sb) and OREAS 245 (0.34% Sb) were used. One blank and three CRMs were analysed prior to analysis.

CRMs were inserted into the sample stream to allow post-processing correction of the data and to monitor the consistency of the pXRF during analysis. Blanks were inserted to ensure that any contamination of the instrument was identified before analysis began. Replicates were used to test the precision of the instrument. Repeat samples were used to test the variability of the sample material. However, the pXRF data were not calibrated against the OREAS standards by RRPL. The QP (Sean Aldrich) recommends correcting all data using calibration plots after each upload into the database; the calibration plots should be based on the expected values for each element in the CRMs plotted against the analysed values of the CRMs. The gradient of the linear fit between the expected and analysed values defines the correction factor used to calibrate the collected geochemical data (Fisher et al., 2014; Gazley and Fisher, 2014).

RRPL used two different pXRF instruments (of the same model) to perform the multi-element analysis. The QP (Sean Aldrich) reviewed the QC data specific to each instrument to ensure that the analytical process of both instruments was in control.

The analytical process was assessed using RSC's in-house QC tool. Westgard rules 1x3s, 2x2s, 4x1s, 7x, and 6t (Table 11-4) (Westgard et al., 1981; Sterk, 2015) were used for the detection of special-cause variation. Control plots of the different OREAS CRMs analysed for Sb are presented in to Figure 11-8.

The control plots indicate that, for As, 7x is the most frequent Westgard rule violation and is predominantly recorded in analyses completed by pXRF SN841694. No trends are evident in the As data; however, a step jump was observed in OREAS277 in December 2022.

Several 7x, 1x3s, and 2x2s rule violations were observed across the different CRMs analysed for Sb. The data collected from OREAS 245 by pXRF SN841694 also exhibited a positive trend over time. This suggests the pXRF analysis was not always in control. No other CRMs exhibit a trend in either the Ab or Sb data.

Table 11-4: Explanation of the Westgard rules.

Rule	Explanation
1x3s	One result outside of three standard deviations from the mean
2x2s	Two consecutive results outside two standard deviations from the mean
4x1s	Four consecutive results outside one standard deviation from the mean
7x	Seven consecutive results on one side of the mean

6t	Six consecutive results trending in the same direction (e.g. six results where every result is higher than the previous)

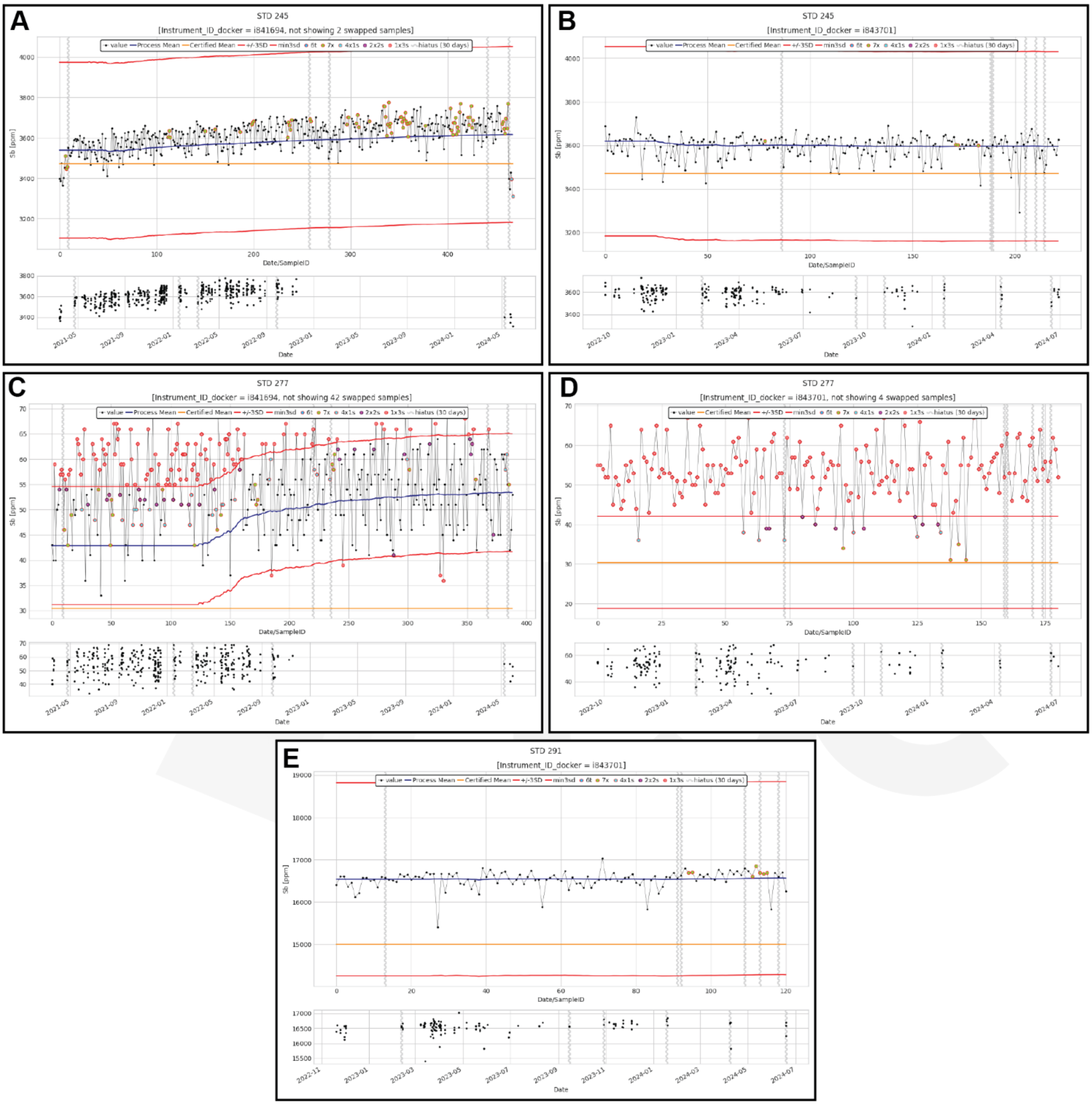


Figure 11-8: Control plots analysed for Sb. A) OREAS245 analysed by pXRF SN841694. B) OREAS245 analysed by pXRF SN843701. C) OREAS277 analysed by pXRF SN841694. D) OREAS277 analysed by pXRF SN843701. E) OREAS291 analysed by pXRF SN84370.

The consistency of the pXRF analytical process can also be assessed by proxy by reviewing the RD between the original and replicate measurements. A replicate measurement is obtained by taking a second pXRF without moving the sample. The relative difference varies from approximately -30 to +30 %, similar to the third-split (pulp) repeat sample. Several outliers (>±40%) are also present. No major trends are visible.

Following a review of the CRM and replicate data, the QP (Sean Aldrich) considers the laboratory analytical process to have been predominantly in control; however, the CRM data highlight that issues may arise when analysing Sb using pXRF. The location of the low-energy peak corresponds to Ca and K, whereas the high-energy peaks are measured at part of the spectra where the background is high; thus, the limit of quantification for Sb is likely to be relatively high.

The relative difference plot in Figure 11-4 indicates the analytical process was predominantly in control, with no trends or step changes observed in the data.

11.5.3.2 Trench Samples

11.5.3.2.1 Trench Location

Trench location data were validated against the collar coordinates and high-resolution LiDAR imagery. The QP (Sean Aldrich) recommends RRPL also collects and records repeat GPS measurements to allow quantitative assessment of the quality of the location data. Based on the LiDAR validation, the QP (Sean Aldrich) is of the opinion that the risk associated with the trench location data is low with respect to the DQO.

11.5.3.2.2 Primary Sample

Field repeat samples were collected at a rate of approximately one repeat sample per trench. The consistency of the primary sampling process can be broadly assessed by tracking the RD of the repeat pairs over time.

RRPL collected field repeat samples from trenches at Alexander River and Auld Creek. Due to the limited number of sample pairs for each deposit, the data were reviewed together.

The RD between the repeat pairs range from approximately -41% to +67% (Figure 11-9). No trends or step jumps are observed in the repeat pairs, indicating the sampling process was in control.

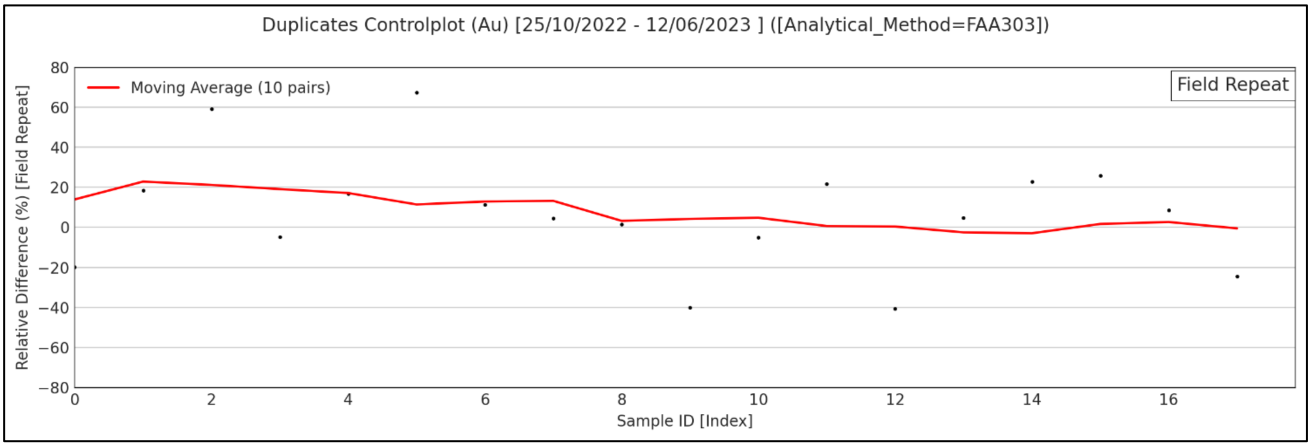


Figure 11-9: Relative difference in Au grades between trench field repeat samples. Gold was analysed by FAA303 at SGS Waihi. Data filtered above the LOQ (0.1 g/t Au).

11.5.3.2.3 First Split

No duplicate or repeat samples were collected following the coarse crush. Therefore, the QP (Sean Aldrich) could not establish whether the first-splitting stage was always in control. The QP (Sean Aldrich) recommends a duplicate sample is collected during the first split to monitor the performance of the splitting stage.

11.5.3.2.4 Second Split

The second splitting stage was monitored by the collection of a repeat sample of the pulverised trench sample by SGS Westport. The RD between sample pairs reporting above the Au LOQ (0.1 g/t Au) is depicted in Figure 11-10. The RD plot does not exhibit any trends or step jumps. The RD in Au grade between the second split repeat pairs is -94% to +67%. Based on the RD of pulp repeat samples, the QP (Sean Aldrich) considers the second splitting process to have been in control.

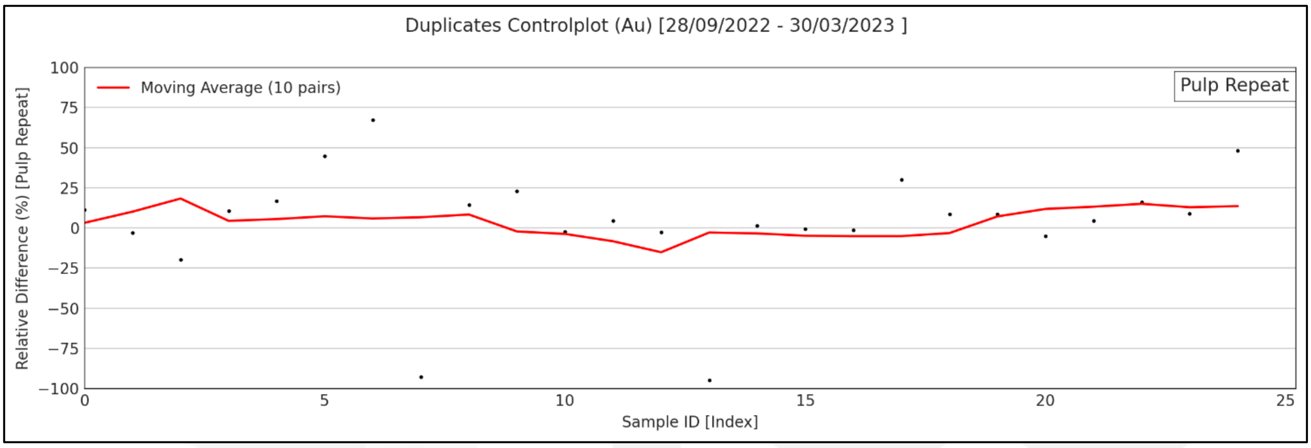


Figure 11-10: Relative difference in Au grades between trench pulp repeat samples. Gold was analysed by FAA303 at SGS. Data filtered above the LOQ (0.1 g/t Au).

11.5.3.2.5 Analytical Process: SGS

Sample blanks and CRMs were inserted into the sample stream along with the trench samples. All sample blanks returned Au below the LOQ (0.1 g/t).

The CRM results are reported in Section 11.5.3.1.8 and indicate the analytical process was in control.

11.5.4 Quality Acceptance Testing

Quality acceptance testing (QAT) is where a final judgement of the data is made by assessing the accuracy and precision of the data for those periods where the process was demonstrated to be in control, and separately for those periods where the process was demonstrated to be not in control. Accuracy and precision are evaluated, and a final pass/fail assessment is made based on the DQO.

11.5.4.1 Diamond Drilling Samples

11.5.4.1.1 Collar Location

No quantitative quality data were available for the collar location collection process; therefore, accepting the quality (accuracy and precision) of the collar location data based on statistically defined thresholds is not possible. Based on reviews of the processes, systems, and tools available to determine collar locations described above, the collar location data are considered by the QP (Sean Aldrich) to be fit for the purpose of defining exploration targets and low-confidence mineral resources.

11.5.4.1.2 Downhole Survey

No quantitative quality downhole survey data were collected; therefore, the quality of the analytical process, as determined by accuracy and precision, cannot be determined. Based on the adequacy of the operating procedures (Section 11.5.2.1.2), and a quantitative threshold review of dog-leg severity, the downhole survey data are considered by the QP (Sean Aldrich) to be fit for the purpose of defining exploration targets and low-confidence mineral resources.

11.5.4.1.3 Density

Samples were weighed using either WS201-10K Wedderburn scales (as instructed by the SOP, *RRL SG SOP*) or kitchen scales (not included in the SOP). The Wedderburn scales had a readability of 0.5 g, whereas the kitchen scales had a readability of 1 g. The QP (Sean Aldrich) considers the readability of both scales to be acceptable with respect to the DQO, but the Wedderburn scales should be preferred.

Water-temperature data were recorded by RRPL to ensure the correct density of water was used in the calculation of the sample density. The mass of reference core was not recorded digitally; therefore, no quantitative quality data were collected, and the quality of density data collection cannot be determined in terms of accuracy and precision.

Based on the adequacy of the operating procedures (Section 11.5.2.1.3), the QP (Sean Aldrich) is of the opinion that the risk associated with the density data is low with respect to the DQO. However, the SOP (*RRL SG SOP*) should be updated to include the collection of repeat samples, and procedures regarding digital record-keeping for all QC data should be implemented.

11.5.4.1.4 Primary Sample

A practical means of checking and verifying the quality of a sample is to validate it against or compare it with a sample with a known grade. In simple terms, the difference between the analysed value and the 'known' value is then defined as the bias, which is a measure of sample quality. Precision can be benchmarked by comparing the variance in the measurements of samples with the variance in check samples. This is the principle behind the utility of laboratory CRMs.

For the primary samples, i.e. the sample collected at the drill bit, such options are limited. The next practical way to determine the quality of the primary sample is to compare it with a sample of similar or better quality taken at the same location. This process is often called twinned drilling, but it can be used whenever a sample from drill/sample A is close enough to a sample from drill/sample B.

As of the effective date of this report, no twin drilling had been conducted at the Project. In the QP's (Sean Aldrich) opinion, this is acceptable for early-stage exploration programmes and low confidence mineral resources; however, twin drilling, particularly of significant intersections, is recommended as the project progresses to higher-confidence resource definition.

The quality of the primary sample can be assessed by proxy by assessing sample recovery rates. Sample recovery was actively monitored by RRPL during drilling (Section 11.5.2.1.4). Drill-core recovery at Alexander River, Big River, Auld Creek, and Supreme averaged 96–98% for intervals returning >1 g/t Au and was consistent across the different hole diameters. Lower than average recovery (as low as 74%) was recorded for three holes at Auld Creek.

The QP (Sean Aldrich) notes that an average recovery of 95% is a standard recovery target for DD under most conditions. The data are considered by the QP (Sean Aldrich) to be fit for the purpose of definition of low-confidence mineral resources.

As a back-door check for primary sample quality, sample recovery can be used as a proxy to investigate the impact of grade distribution. No trend is observed between sample recovery and Au or Sb grades (Figure 11-11).

Table 11-5: Summary of drill recovery for intervals returning >1 g/t Au.

	Alexander River (%)	Auld Creek (%)	Big River (%)	Supreme (%)
CRAE	-	-	-	-
Kent	99.7	-	-	
OGC/MMCL	93.4	-	-	88.7
OGL	-	-	95.6	94.1
RRPL	96.1	95.6	98.6	-
RRPL PQ	98.4	94.3	-	-
RRPL HQ	94.5	99.4	98.7	-
RRPL NQ	85.2	-	96.9	-
All holes	96.4	95.6	97.2	93.2

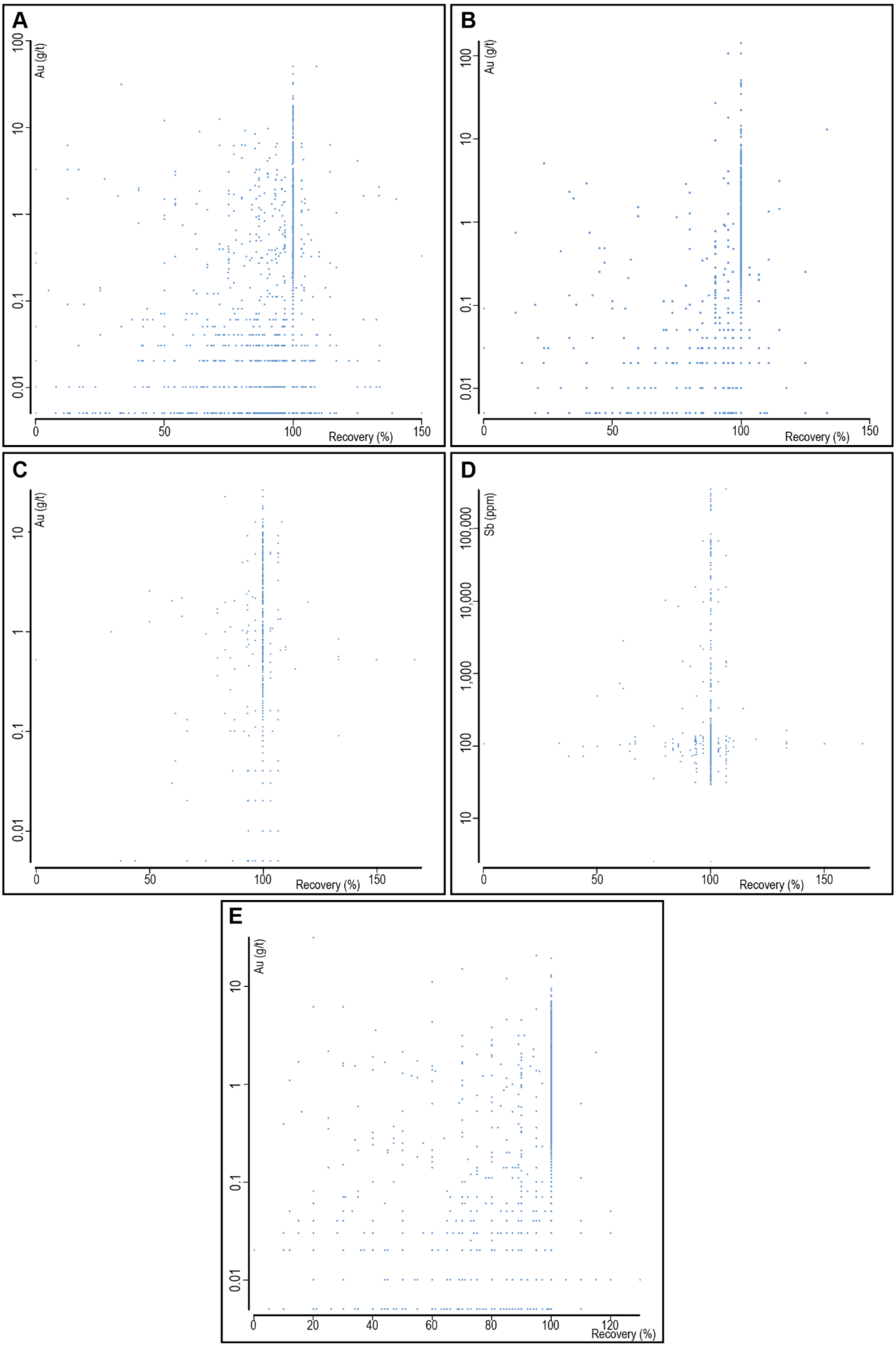


Figure 11-11: Sample recovery vs Au grade. A) Alexander River, Au. B) Big River, Au. C) Auld Creek, Au. D) Auld Creek, Sb. E) Supreme, Au.

11.5.4.1.5 First Split

RRPL collected 110 quarter-core duplicate samples at a rate of approximately one duplicate per drillhole or one in every 50 primary samples. A total of 58 quarter-core duplicate samples have an Au grade above the LOQ (0.1 g/t). Figure 11-12 presents scatter and QQ plots for Au. A Wilcoxon signed-rank test indicates no statistically significant bias was introduced during the first split (Table 11-6).

On the basis of the quarter-core sampling, in the opinion of the QP (Sean Aldrich), the data produced by the first split is of an acceptable quality with respect to the DQO.

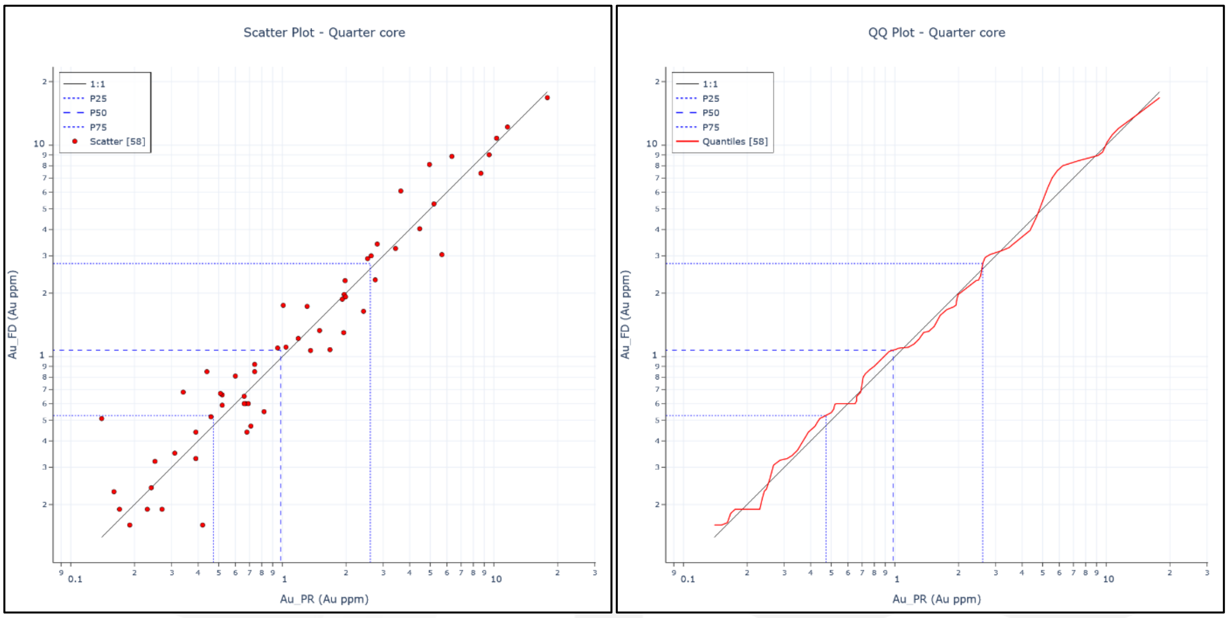


Figure 11-12: Scatter and QQ plots of quarter-core sample pairs.

Table 11-6: Precision summary for quarter-core sample pairs.

Analyte	Split	N pairs	LOQ	Wilcoxon p-Value	Wilcoxon Verdict	RMSCV (%)
Au	Quarter Core	58	0.1 g/t	0.648	Accept H_0	29

11.5.4.1.6 Second Split

No second-split duplicate samples were collected; therefore, it is not possible to determine the accuracy and precision of the second split based on statistically defined thresholds. Based on the adequacy of the operating procedures (Section 11.5.2.1.6), the QP (Sean Aldrich) considers the sub-sampling methodology appropriate for the style of mineralisation, and the quality of the data are acceptable with respect to the DQO. The QP (Sean Aldrich) recommends the laboratory routinely conduct duplicate sampling to understand any quality issues at this stage of splitting.

11.5.4.1.7 Third Split

The quality of the third split could be determined following the determination that the third-splitting process was in control (Section 11.5.3.1.7).

A Wilcoxon signed-rank test was performed for Au (fire assay) and As and Sb pXRF repeat pairs and demonstrates no statistically significant biases (P_{95}; Table 11-7). The QP (Sean Aldrich) also visually reviewed the scatter and QQ plots and did not observe a bias (Figure 11-13). The RMSCV value for the third split is 8% for Au, which is in line with expectations for this mineralisation style and this comminution stage, thereby indicating good precision.

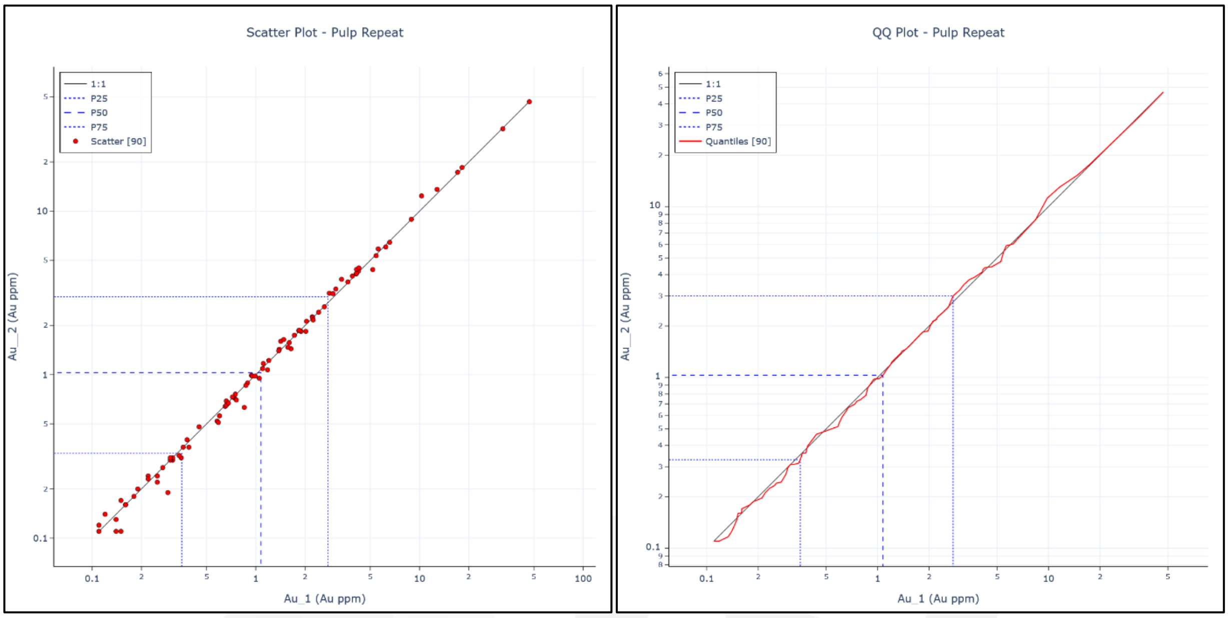


Figure 11-13: Scatter and QQ plots of third-split (pulp) repeat pairs from diamond drilling samples collected by SGS Westport.

Table 11-7: Precision summary for third-split (pulp) sample pairs.

Analyte	Analytical Method	pXRF Serial No.	Split	N Pairs	LOQ	Wilcoxon p-Value	Wilcoxon Verdict	RMSCV (%)
Au	Fire assay	NA	Third (pulp)	90	0.1 g/t	0.508	Accept H_0	8
As	pXRF	841694	Third (pulp)	164	10 ppm	0.772	Accept H_0	7
As	pXRF	843701	Third (pulp)	87	10 ppm	0.702	Accept H_0	5
Sb	pXRF	841694	Third (pulp)	35	10 ppm	0.171	Accept H_0	22
Sb	pXRF	843701	Third (pulp)	57	10 ppm	0.243	Accept H_0	19

11.5.4.1.8 Analytical Process: SGS

RRPL inserted 10 different CRMs (

Table 11-3). The QP (Sean Aldrich) performed an *a posteriori* review on data from six of the CRMs that met RSC's minimum insertion threshold of 30 analyses. The CRMs suggest the analytical results were mostly precise and accurate, with all but one CRM (SJ53) receiving a passing mark (marginal to excellent) for the precision and accuracy z-score tests. A negative bias was recorded for all CRMs (-0.3 to -2.6%). The CRMs inserted by RRPL were synthetic and not matrix matched; Sb-rich mineralisation can cause issues with fusion during fire assaying. While the bias is consistent across the different CRMs and follows the same trend (biased low), the QP (Sean Aldrich) considers the analytical data acceptable with respect to the DQO for the definition of low-confidence mineral resources. The QP (Sean Aldrich) strongly recommends changing the source of reference material to be matrix-matched to the style of mineralisation at the Project.

The blank data returned elevated Au results in three batches. The samples in these batches were re-assayed by SGS; however, the original blanks were not included as part of this re-assay programme. The QP (Sean Aldrich) recommends re-assaying original blanks that fail, rather than just the primary sample material during a programme of re-analysis, and not just the primary sample material. The QP (Sean Aldrich) also recommends including blank samples after suspected high-grade intervals.

11.5.4.1.9 Analytical Process: pXRF

Quantitative acceptance criteria for the performance of CRMs, based on statistical thresholds, are set in RSC's QC WebApp and match the expectations of the DQO. Precision acceptance is assessed by comparing the total variance of the analysis of CRMs, as determined by the laboratory, with the certified variance for each CRM. This is carried out using a Fisher test, which determines whether the variance in the laboratory assay data of the CRMs is statistically different from the certified variance at 95% confidence. Accuracy was assessed by comparing the process mean grade of the analysis of CRMs, as determined by the laboratory with the certified mean value of the CRM, using t-tests or absolute average z-score tests. The t-tests determine whether the difference between the two grades is statistically significant at a 95% confidence limit.

A review of the CRM data (four CRMs analysed by two pXRF instruments) indicates all CRMs except OREAS 277 (Sb) meet the precision thresholds determined by the DQO (Table 11-9). However, only one CRM meets the accuracy thresholds enforced with respect to the DQO (OREAS 903 for As, measured by pXRF SN841694). Most CRMs report a high bias (-3 to 9% As and 3–79% Sb). This is not unexpected, as the pXRF data were not calibrated.

In some instances, RRPL had both laboratory and pXRF Sb data for samples from Auld Creek (Golden Point). A review of these data by the QP (Sean Aldrich) indicates that the pXRF under-reports Sb at low to moderate grades (<5,000 ppm; Figure 11-14).

Antimony is a difficult element to quantify using a pXRF due to interference with Ca on the K_α beam. Antimony can be measured using different beams with a higher beam energy; however, this decreases the performance of the pXRF when analysing samples with a low Sb grade. This is observed in the CRM data, where OREAS 291, which has the highest certified value for Sb, performs the best.

Table 11-8: Performance summary of CRMs submitted by RRPL for the Reefton Project.

Analyte	Duration	CRM ID	CRM Certified Value	CRM SD	N	Process Mean	Process Variance	Av. Z Score	Av. Abs Z Score	Process Std	Bias (%)	F-Test (p)	F-Test Result (a=95.0)	Precision	Precision Z Result	Student-t (p)	Student-t Result (a=95.0)	Accuracy	Accuracy Z Result
Au	1323	SG66	1.086	0.032	35	1.057	0.002	-0.893	1.154	0.04	-2.631	0.124	Accept H_0	Pass	**Marginal**	0.002	Reject H_0	Fail	**Marginal**
Au	1323	SH41	1.344	0.041	34	1.319	0.001	-0.607	0.727	0.03	-1.851	0.065	Accept H_0	Pass	**Good**	0.005	Reject H_0	Fail	**Acceptable**
Au	1323	SJ53	2.637	0.048	60	2.572	0.009	-1.351	1.831	0.093	-2.459	0	Reject H_0	Fail	**Not Acceptable**	0	Reject H_0	Fail	**Not Acceptable**
Au	1323	SL51	5.909	0.136	52	5.842	0.080	-0.492	1.399	0.283	-1.132	0	Reject H_0	Fail	**Marginal**	0.083	Accept H_0	Pass	**Acceptable**
Au	1323	SL61	5.931	0.177	48	5.911	0.026	-0.115	0.625	0.162	-0.343	0.327	Accept H_0	Pass	**Good**	0.312	Accept H_0	Pass	**Excellent**
Au	1323	SN50	8.685	0.18	52	8.641	0.066	-0.247	0.996	0.256	-0.511	0.031	Reject H_0	Fail	**Good**	0.192	Accept H_0	Pass	**Good**

Table 11-9: Precision summary table of CRMs analysed by RRPL using pXRF.

Analyte	Duration	pXRF Serial No.	CRM ID	Certified Value	CRM SD	N	Process Mean	Process Variance	Process Std	Bias (%)	F-Test (p)	F-Test Result (a=95.0)	Precision	Student-t (p)	Student-t Result (a=95.0)	Accuracy
As	647	843701	OREAS 245	3778	212	222	4016.176	754.842	27.474	6.304	0	Reject H_0	Pass	0	Reject H_0	Fail
As	647	843701	OREAS 277	467	23	187	508.005	17.855	4.225	8.781	0	Reject H_0	Pass	0	Reject H_0	Fail
As	647	843701	OREAS 291	477	36	121	461.595	102.226	10.111	-3.23	0	Reject H_0	Pass	0.022	Reject H_0	Fail
As	1173	841694	OREAS 245	3778	212	468	3978.44	1137.026	33.72	5.305	0	Reject H_0	Pass	0	Reject H_0	Fail
As	1173	841694	OREAS 277	467	23	429	500.406	28.424	5.331	7.153	0	Reject H_0	Pass	0	Reject H_0	Fail
As	1173	841694	OREAS 903	49.7	3.77	394	50.383	2.456	1.567	1.375	0	Reject H_0	Pass	0.188	Accept H_0	Pass
Sb	647	843701	OREAS 245	3471	145	222	3590.748	3114.189	55.805	3.45	0	Reject H_0	Pass	0	Reject H_0	Fail
Sb	647	843701	OREAS 277	30.4	3.9	181	52.552	61.015	7.811	72.87	0	Reject H_0	Fail	0	Reject H_0	Fail

Sb	647	843701	OREAS 291	15000	760	121	16540.157	44338.333	210.567	10.268	0	Reject H_0	Pass	0	Reject H_0	Fail
Sb	1173	841694	OREAS 245	3471	145	468	3613.019	5492.396	74.111	4.092	0	Reject H_0	Pass	0	Reject H_0	Fail
Sb	1173	841694	OREAS 277	30.4	3.9	389	54.635	55.325	7.438	79.72	0	Reject H_0	Fail	0	Reject H_0	Fail

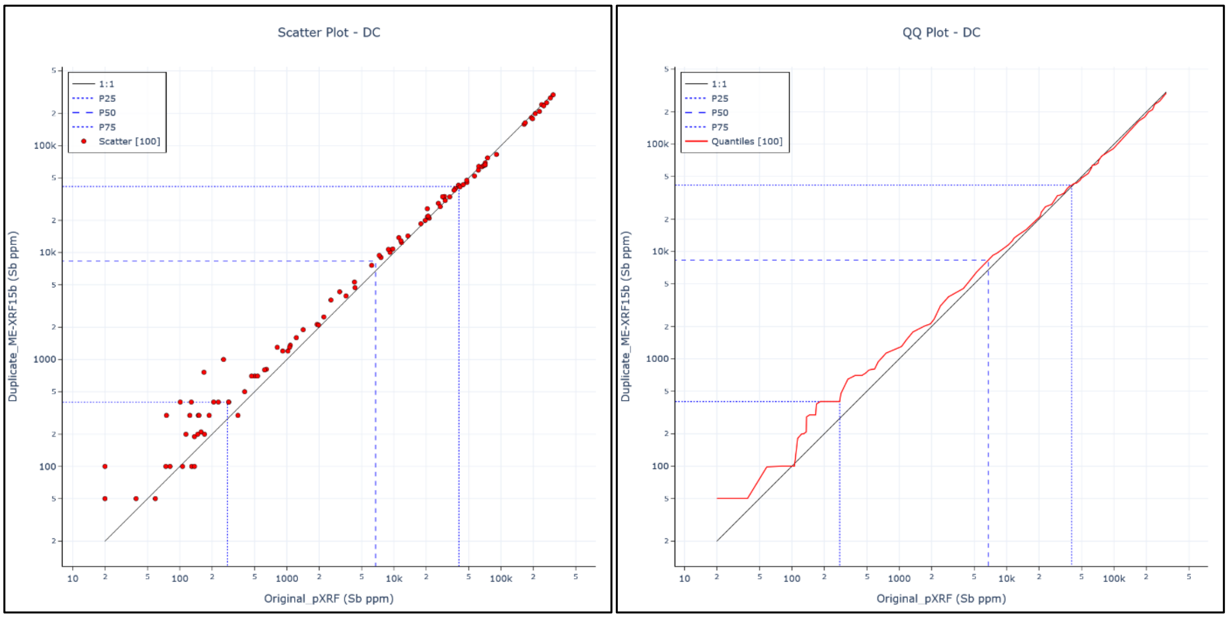


Figure 11-14: Scatter and QQ plots comparing pXRF and laboratory Sb analysis on pulp samples from Auld Creek core samples.

Another way to determine the accuracy and precision of the pXRF data is by proxy of repeat measurements. The QP (Sean Aldrich) assessed repeat measurements collected at a rate of approximately 1 in 20. A review of the pXRF repeat data for As indicates a good correlation (RMSCV of 3–8%) (Table 11-10). Likewise, the Sb data indicates a low RMSCV of 17–20% (Figure 11-15; Table 11-10).

While there are issues surrounding the Sb pXRF data, as indicated by the CRM review, the QP (Sean Aldrich) considers the pXRF analytical data fit for the purpose of defining exploration results and low-confidence mineral resources. The QP (Sean Aldrich) strongly recommends re-assaying Sb-bearing samples using laboratory methods (e.g. ME-XRF15b or ME-XRF15c at ALS Brisbane) and implementing a programme of calibrating the pXRF data to compensate for longer-term trends in pXRF analytical results related to the instrument.

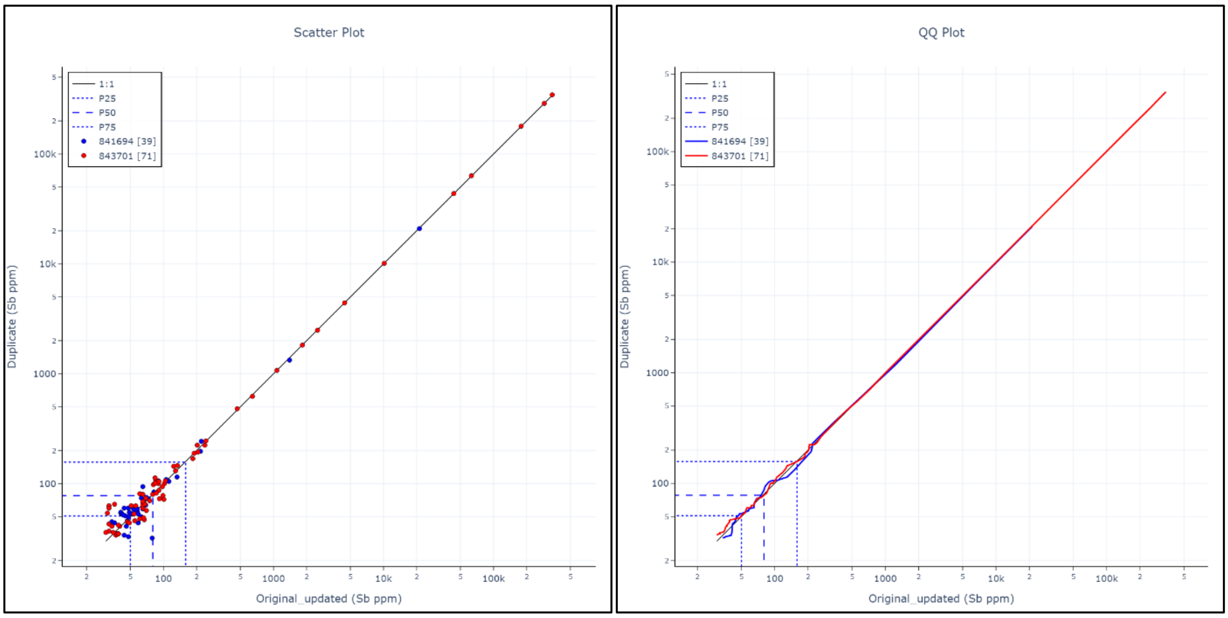


Figure 11-15: Scatter and QQ plots for diamond core and trench repeat analyses, analysed for Sb by pXRF.

Table 11-10: Precision summary for repeat analyses (diamond core and trench samples only).

Analyte	pXRF Serial No.	Split	N pairs	LOQ	Wilcoxon p-Value	Wilcoxon Verdict	RMSCV (%)
As	841694	Third (pulp)	165	20 ppm	0.310	Accept H_0	8
As	843701	Third (pulp)	102	20 ppm	0.092	Accept H_0	3
Sb	841694	Third (pulp)	39	20 ppm	0.772	Accept H_0	20
Sb	843701	Third (pulp)	71	20 ppm	0.386	Accept H_0	17

11.5.4.2 Trench Samples

11.5.4.2.1 Trench Location

No quantitative quality data were available for the trench location collection process; therefore, accepting the quality (accuracy and precision) of the trench location data based on statistically defined thresholds is not possible. Based on reviews of the processes, systems, and tools available to determine trench locations described in Section 11.5.2.2, the trench location data are considered by the QP (Sean Aldrich) to be fit for the purpose of delineating low-confidence mineral resources.

11.5.4.2.2 Primary Sample

RRPL collected 38 field repeat trench samples at a rate of approximately one field repeat per trench. Additionally, Kent collected nine field repeat trench samples. In total, 28 repeat samples report an Au grade above the LOQ (0.1 g/t Au). Figure 11-16 presents scatter and QQ plots for Au analysed by SGS (FAA303). A Wilcoxon signed-rank test indicates no statistically significant bias was introduced during the repeat sampling (Table 11-11). The sample population for the Kent field repeat samples and RRPL samples analysed by SGS (GO_FAP30V10) are low; therefore, statistically meaningful conclusions regarding the data's accuracy and precision cannot be made.

On the basis of the RRPL field repeat sample pairs (analysed by fire assay), in the opinion of the QP (Sean Aldrich), the data produced by the field repeat sampling is of an acceptable quality with respect to the DQO.

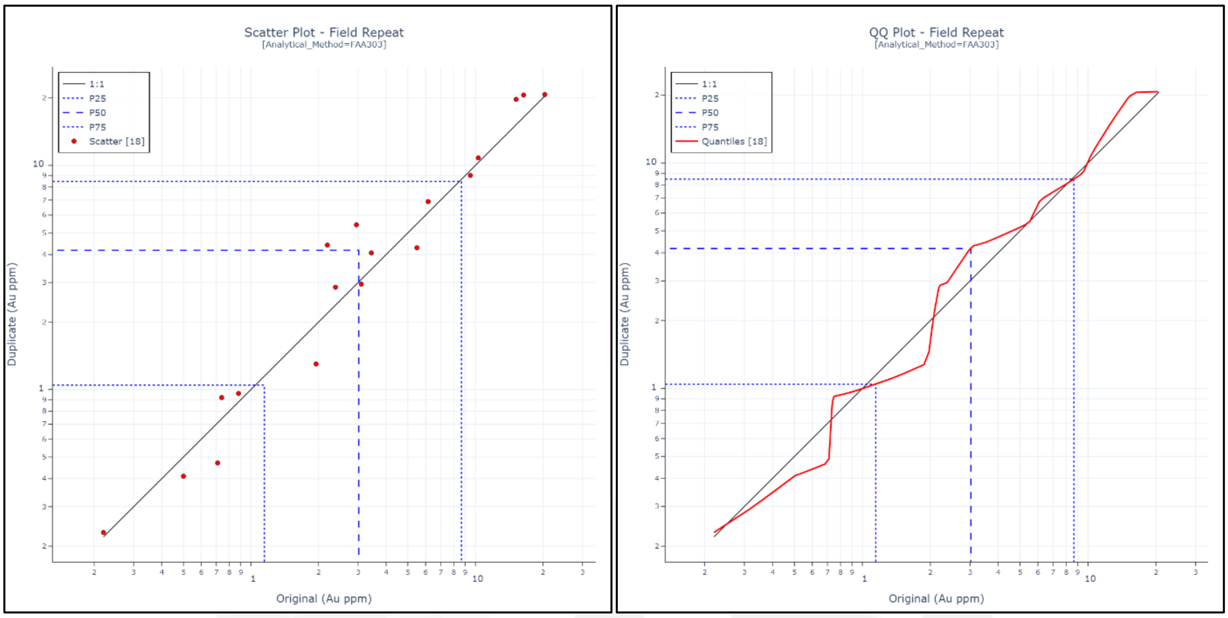


Figure 11-16: Scatter and QQ plots of field repeat pairs from trench samples collected by RRPL and analysed by FAA303 for Au by SGS.

Table 11-11: Precision summary for trench field repeat sample pairs.

Analyte	Analytical Method	Company	Split	N pairs	LOQ	Wilcoxon p-Value	Wilcoxon Verdict	RMSCV (%)
Au	FAA303	RRPL	Field Repeat	18	0.1 g/t	1.08	Accept H_0	26
Au	GO_FAP30V10	RRPL	Field Repeat	4	0.1 g/t	0.875	Accept H_0	75
Au	FAA515	Kent	Field Repeat	6	0.1 g/t	0.312	Accept H_0	28

11.5.4.2.3 First Split

No first-split duplicate samples were collected; therefore, it is not possible to determine the accuracy and precision of the second split based on statistically defined thresholds. Based on the adequacy of the operating procedures (Section 11.5.2.2.3), the QP (Sean Aldrich) considers the sub-sampling methodology appropriate for the style of mineralisation, and the quality of the data are acceptable with respect to the DQO. The QP (Sean Aldrich) recommends the laboratory routinely conducts duplicate sampling to understand any quality issues at this stage of splitting.

11.5.4.2.4 Second Split

The quality of the second split could be determined following the determination that the second-splitting process was in control (Section 11.5.3.2.4).

A Wilcoxon signed-rank test was performed for Au (fire assay) duplicate pairs and demonstrates no statistically significant biases (Table 11-12). The QP (Sean Aldrich) also visually reviewed the scatter and QQ plots and did not observe a bias (Figure 11-17). The RMSCV value for the third split is 31% for Au.

Based on the second-split (pulp) repeat samples, the QP (Sean Aldrich) considers the second-split data fit for purpose with respect to the DQO.

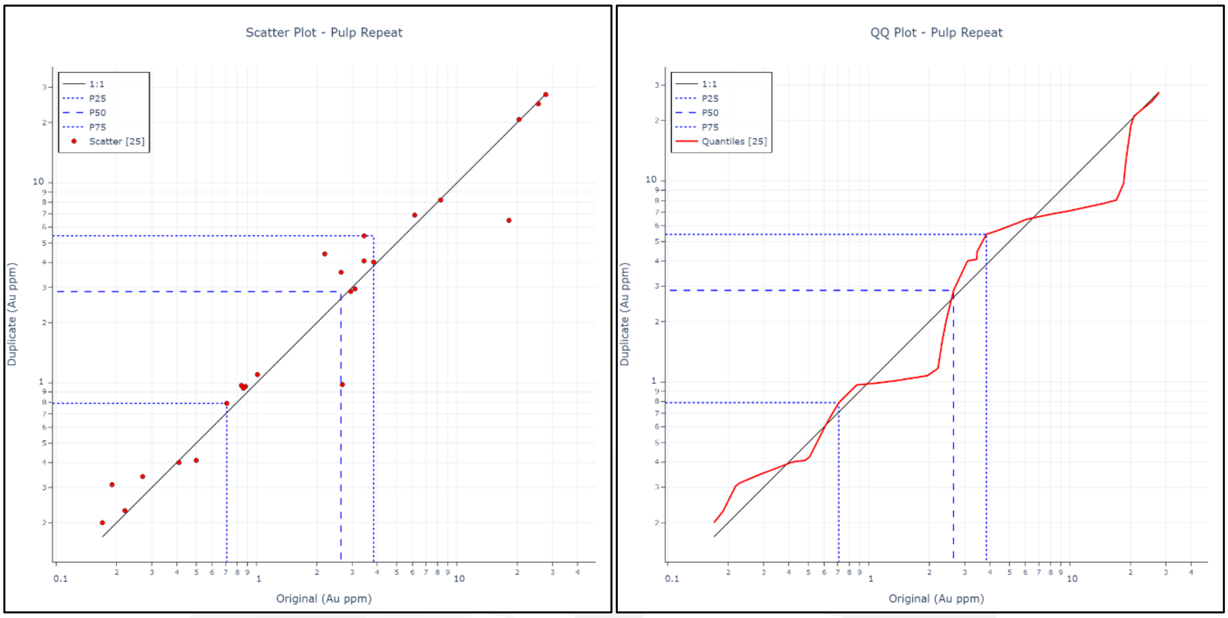


Figure 11-17: Scatter and QQ plots of second-split duplicate pairs from trench samples collected by RRPL and analysed by FAA303 for Au by SGS.

Table 11-12: Precision summary for trench field repeat sample pairs.

Analyte	Analytical Method	Company	Split	N pairs	LOQ	Wilcoxon p-Value	Wilcoxon Verdict	RMSCV (%)
Au	FAA303	RRPL	Second	25	0.1 g/t	0.339	Accept H_0	31

11.5.4.2.5 Analytical Process

A review of the CRM data inserted in order to determine the accuracy and precision on the analytical process is reported in Section 11.5.4.1.8.

11.6 Summary

Following a review of the available data quality and SOPs, the QP (Sean Aldrich) considers the location, density, sampling, preparation, and analytical data to be fit for the purpose of defining low-confidence mineral resources. A summary of the data quality is presented in

Table 11-13, where the process has been divided into the various sampling and preparation stages.

Table 11-13: Summary of data quality review for the Project. NA = not available.

Sample Type	Data Type	QA	QC	Accuracy	Precision	Fit for Purpose	Comment
Drill Sample	Collar Location	NA	Pass	Unknown	Unknown	Yes	No SOP. Collar locations professionally surveyed and compared to LiDAR. Data fit for purpose.
	Downhole Survey	NA	NA	Unknown	Unknown	Yes	No SOPs or quantitative control data were available. Process was standard; data fit for purpose.
	Density	Pass	NA	Unknown	Unknown	Yes	SOP available for review. No quantitative data recorded. Process was standard; data fit for purpose.
	Primary Sample	Pass	Pass	Pass	Pass	Yes	SOP available to review but did not include a minimum recovery threshold or guidance on dealing with low recoveries. Good drill recovery; data fit for purpose.
	First Split	Pass	Pass	Pass	Pass	Yes	SOP available for review. No bias observed between quarter-core pairs. Data fit for purpose.
	Second Split	NA	NA	Unknown	Unknown	Yes	No SOPs or quantitative control data were available. The QP (Sean Aldrich) strongly recommends the collection of coarse-crush duplicates. Process was standard; data fit for purpose.
	Third Split	NA	Pass	Pass	Pass	Yes	No SOP for review. No bias observed between pulp repeat samples. Data fit for purpose.
	Analytical Process: Au SGS	NA	Pass	Pass	Pass	Yes	No SOP for review. Minor low bias observed. The QP (Sean Aldrich) recommends using matrix-matched CRMs. Data fit for purpose.
	Analytical Process: pXRF	Pass with issues	Pass with issues	Fail	Pass	Yes	CRMs report high compared to their certified values. Positive trend exhibited in OREAS 245 for Sb but not replicated for other elements Due to the interference with Ca, it can be difficult to analyse Sb by pXRF. Data fit for purpose (low-confidence mineral resources). SOP fails to provide procedures regarding the use of CRM data. The QP (Sean Aldrich) recommends conducting laboratory analysis on Sb-rich samples.
Trench Sample	Trench Location	NA	Pass	Unknown	Unknown	Yes	No SOP. Some trench locations were professionally surveyed. All data were compared to LiDAR. Data fit for purpose, but the QP (Sean Aldrich) recommends professionally surveying remaining trench locations.
	Primary Sample	NA	Pass	Pass	Pass	Yes	No SOP. No bias observed between primary and repeat sample pairs. Data fit for purpose.
	First Split	NA	NA	Unknown	Unknown	Yes	No SOPs or quantitative control data were available. The QP (Sean Aldrich) strongly recommends the collection of coarse-crush duplicates. Process was standard; data fit for purpose
	Second Split	NA	Pass	Pass	Pass	Yes	No SOP for review. No bias observed between pulp repeat samples. Data fit for purpose.
	Analytical Process:	NA	Pass	Pass	Pass	Yes	No SOP for review. Minor low bias observed. The QP (Sean Aldrich) recommends using matrix-

	Au SGS						matched CRMs. Data fit for purpose.

12. Data Verification

12.1 Drillhole Database

As the Project does not have a centralised database, data were collated by RRPL geologists from digital drillhole logging files into various Excel workbooks for Alexander River, Auld Creek, Big River, and Supreme. The QP (Sean Aldrich) notes that Excel is not an appropriate software for storing geospatial and analytical data.

The workbooks contain both trenches and drilling undertaken by RRPL, MMCL, OGL, Kent and Auzex. Each workbook was split into the following tabs.

- Collar: Hole_ID, location, depth planned orientation, operator, drilling company, etc.
- Survey: downhole depth and orientation, survey tool, quality comments.
- Geology: depth by lithology, validated lithology codes, weathering, orientate core measurements, structure field, alteration etc.
- Recovery: run interval, total core recovered, recovery.
- Assay: lab_ID, date, Sample_ID, sample type, depth, QC note, analytical data including Au by fire assay, screen fire assay, and multielement pXRF.

The QP (Sean Aldrich) independently reviewed the RRPL drilling workbooks and supporting records, logs, and photos. Each RRPL drillhole was logged in an Excel workbook via a laptop. The drill log had the required data fields to provide the information necessary to support an MRE.

The QP (Sean Aldrich), verified a representative number of collars, sampling, lithology logs, and assay data (Au, As, and Sb) against the digital database. An appropriate number of datapoints were checked, including selected zones of significant mineralisation. Some errors like data swaps and incorrect Au values were noted for the Alexander River data (Table 12-1). A small number of transcription errors, missing data, and incorrect values in the recovery data were identified during the verification process and quickly fixed by RRPL.

Table 12-1: Database errors identified during the verification process.

Database	DH	Sample	Field	Comment	Fixed
Alexander River	AXDDH009	RA0032, 52-112	As_ICP40Q	As values are Zn values	Yes
Alexander River	AXDDH010	RA0130	Au_FAA303	Lab report 5.14 v 5.21 in database	Yes

12.2 Collar Locations

During the site visit, the QP (Sean Aldrich) visited drill pads at Alexander River, Auld Creek, and Big River. The QP (Sean Aldrich) did not visit the Supreme drill sites, as RRPL had not undertaken any work in the area and the collars would be buried by ~20 years of vegetation regrowth. Due to consent restrictions, numerous drillholes had been drilled from one pad at the sites. Old drill pads were often reused, resulting in older drill collars becoming buried and lost under regrowth. This was noted by the QP (Sean Aldrich) with respect to older OGL drillholes at Alexander River and Big River. Due to the size of the drill pad and GPS error (likely to be higher due to steep slopes and bush cover), only one GPS check point was collected on each pad.

During the visit, the QP (Sean Aldrich) also recorded trench locations at Alexander River and Auld Creek and observed exposed veins.

Due to difficulty in obtaining accurate surveyed GPS z values for trenches (due to steep slopes and bush cover) trench Z values were adjusted by RRPL by draping them onto the LiDAR surface.

The QP (Sean Aldrich) visited 13 drill pads and checked 22 drillhole collars at Alexander River, 15 collars at Big River, and 16 collars at Auld Creek. The largest error was noted at Auld Creek, where there was ~20 m difference between the GPS check and the coordinates in the database. The QP (Sean Aldrich) recommends that the drillholes on this pad are rechecked, and if the 20 m error persists then the drillholes should be resurveyed using DGPS.

Table 12-2: Collar location checks

Project	Drill Pad	Drillhole	Difference	Comment
Alexander River	7	AXDDH022 AXDDH023	<5 m	
	6	AXDDH 013 AXDDH014 AXDDH015	~9–11 m	
	18	AXDDH066 AXDDH067 AXDDH069 AXDDH070	<5 m	
	16	AXDDH057 AXDDH059 AXDDH062 AXDDH064	<5 m	
	32	AXDDH032 AXDDH033	~15 m	
	35	AXDDH079 AXDDH081 AXDDH083 AXDDH086 AXDDH088 AXDDH092a AXDDH093	~11–14 m	AXDDH090 – not seen. AXDDH081 depth recorded on cap as 310 m, logged depth 269.9 m. AXDDH092a 80.7 m not in database.
Big River	1	BRDDH025 BRDDH026 BRDDH027 BRDDH028 BRDDH029	~5 m	BR006 and BR012 not seen.
	2	BRDHH032 BRDHH033 BRDHH036 BRDHH037 BRDHH038	~4–6 m	BR002 not seen. BRDDH038 depth recorded on cap as 240 m, logged depth 248.8 m. BRDDH041 15 m not in database.

		BRDHH039 BRDHH040 BRDHH041 BRDHH041a BRDHH042		
Auld Creek	16	ACDHH007 ACDHH008 ACDHH009	<5 m	
	19	ACDHH004 ACDHH005 ACDHH006	~6 m	
	14	ACDHH010 ACDHH011 ACDHH012	~20 m	
	12	ACDHH013 ACDHH014 ACDHH015 ACDHH016	~10-12 m	
	8	ACDHH017 ACDHH018 ACDHH019	~7 m	

Figure 12-1: Selection of collars checked by the QP (Sean Aldrich). A – Big River, pad 2; B – Alexander River, pad 18; C – Alexander River, pad 35; D – Auld Creek, pad 19; E – Big River, pad 1; F – Auld Creek, pad 8

12.3 Sampling & Core Logging Verification

During the site visit, the QP (Sean Aldrich) checked a representative number of database entries against the core retained on site (Table 12-3). In general, diamond core collected by RRPL was well-organised and stored in a secure core shed. Associated pulp and coarse rejects were stored next to the core. The core shed also contained significant amounts of OGL drill core. OGL core from the 1990s was well sorted; however, core from 2006–2013 was less well sorted, and during the short site visit, the QP (Sean Aldrich) could not locate all core of interest. Pulp and coarse rejects from the 2006–2013 period were also not immediately available for verification sampling. There was no core storage catalogue to help locate drill core, pulps, or coarse rejects. The QP (Sean Aldrich) recommends that a full core shed inventory is undertaken.

The QP (Sean Aldrich) was able to inspect RRPL drill core for Alexandrer River, Auld Creek, and Big River. The QP (Sean Aldrich) visually inspected the core and noted the lithologies. Only minor variations were noted, and no issues were raised (Figure 12-2, Table 12-3). The QP recommends updating the core logging SOP (*RRL_SWP Core logging_draft*) to include regular check logging to ensure consistency of logging between geologists.

Only one drillhole from Supreme could be readily located. The QP (Sean Aldrich) noted a number of logging intervals where the Sum_Log was logged as greywacke (GWK) or argillite (ARG), whereas a mineralised field would be more appropriate (e.g. mineralised greywacke (MGK)). It is likely that these drillholes have never been re-logged, and the QP (Sean Aldrich) recommends that the Supreme drill core is located and relogged where possible.

Figure 12-2: Core logging verification conducted by the QP (Sean Aldrich).

Table 12-3: Diamond core logging verification.

Project	DH	Geology Intervals	Comment
Alexander River	AXDDH016	3	Checked no issues
	AXDDH018	8	Checked minor Sum_Log variation noted
	AXDDH019	3	Checked no issues
	AXDDH032	2	Checked no issues
	AXDDH033	3	Checked no issues
	AXDDH035	15	Checked minor Sum_Log variation noted
	AXDDH055	7	Checked minor Sum_Log variation noted
	AXDDH059	5	Checked minor Sum_Log variation noted
Auld Creek	ACDDH004	19	Checked several Sum_Log variation noted
	ACDDH005	14	Checked minor Sum_Log variation noted
	ACDDH006	2	Checked no issues
Big River	BRDDH027	5	Checked no issues
	BRDHH031	7	Checked no issues
	BRDHH034	9	Checked minor Sum_Log variation noted
	BRDHH035	4	Checked no issues
	BRDHH037	7	Checked no issues
Supreme	97RDD020	26	Checked minor Sum_Log variation noted

12.4 Core & Pulp Check Sample Analysis

During the site visit, the QP (Sean Aldrich) collected a representative number of check samples from Alexander River; Big River; Auld Creek, and Supreme to verify mineralisation and grade tenure (Figure 12-3). The check samples consisted of quarter-core samples and pulp repeat samples.

The verification samples for check analysis were selected based on geology. A selection of drillholes was pre-selected prior to the site visit to ensure they could be located and placed on the racks before the QP (Sean Aldrich) arrived on site.

The QP (Sean Aldrich) reviewed the lithological logging and sampled intervals logged as quartz veins, mineralised greywacke, mineralised argillite, and breccia, as these are associated with the mineralisation. A total of 30 quarter-core samples were selected for each of the prospects.

While half-core is preferred, RRPL preferred not to lose entire intervals of the core. This is understandable given the development stage of the Project and the limited amount of mineralised core available. Quarter-core sampling (regardless of the volume-variance effect) allows for check sampling to be conducted while also retaining core for archive purposes.

Where possible, corresponding pulp samples were also selected. However, where pulps could not be located or were too small, additional mineralised pulps were selected based on geological logging to ensure a representative number of pulp check samples were analysed. No pulps were available for Supreme.

A total of 25 CRMs were included in the submission. Samples were prepped at SGS Westport and then sent to ALS Brisbane for analysis (fire assay (Au-AA26), screen fire assay (Au_SCR24), and Sb (ME-XRF15c).

Figure 12-3: Quarter core verification sampling conducted by the QP (Sean Aldrich). A) Quarter-core sample and corresponding pulp collected from AXDDH055. B) Quarter-core sample and corresponding pulp collected from BRDDH027. C) Quarter-core samples and corresponding pulps collected from ACDDH005. D) Quarter-core samples collected from 97RDD020. E) Close up of the check sample labelling.

Based on a Wilcoxon signed-rank test, the quarter core samples do not exhibit a statistically significant bias at each of the prospects, Alexander River, Big River, Auld Creek or Supreme for Au of or at Auld Creek for Sb (Table 12-4). A review of the data (scatter and QQ plots) for the Reefton Project (i.e. check sample data for all the prospects) indicates there is a statistically significant bias towards the original sample in the order of 3% (Figure 12-4).

The pulp samples analysed for Au also exhibit a statistically significant but small bias, as indicated by the Wilcoxon signed-rank test, towards the original sample in the order of 4% (Table 12-5Figure 12-4).No statistically significant bias at a 95% confidence level is observed in the Sb pulp samples collected from Auld Creek, as indicated by a Wilcoxon signed-rank test (Table 12-5, Figure 12-5).

Following a review of the CRM inserted alongside the check samples and as part of RRPL's QC procedures, it was determined that the analytical process was in control and the bias was not analytical in nature. It is possible the bias was introduced during the subsampling steps; however, this is inconclusive, and the QP (Sean Aldrich) recommends that RUA undertake further investigations to identify the source of the bias.

The QP (Sean Aldrich) notes that pulp samples that were selected by the QP (Sean Aldrich) for verification had been in storage for more than two years. Over time, dense Au particles settle, thereby introducing heterogeneity in the pulp sample (Dominy et al., 2000), which can be exacerbated by vibrations and motion during sample transport. Once at the laboratory, lab technicians may have incorrectly taken a scoop from the top of the bag for analysis; thus, with the Au settling at the bottom of the bag, the verification sample may be biased toward anomalously low values. Oxidation of sulphides over time may also create biases. The QP (Sean Aldrich) recommends further pulp resubmissions to further understand investigate any likely analytical and preparation bias.

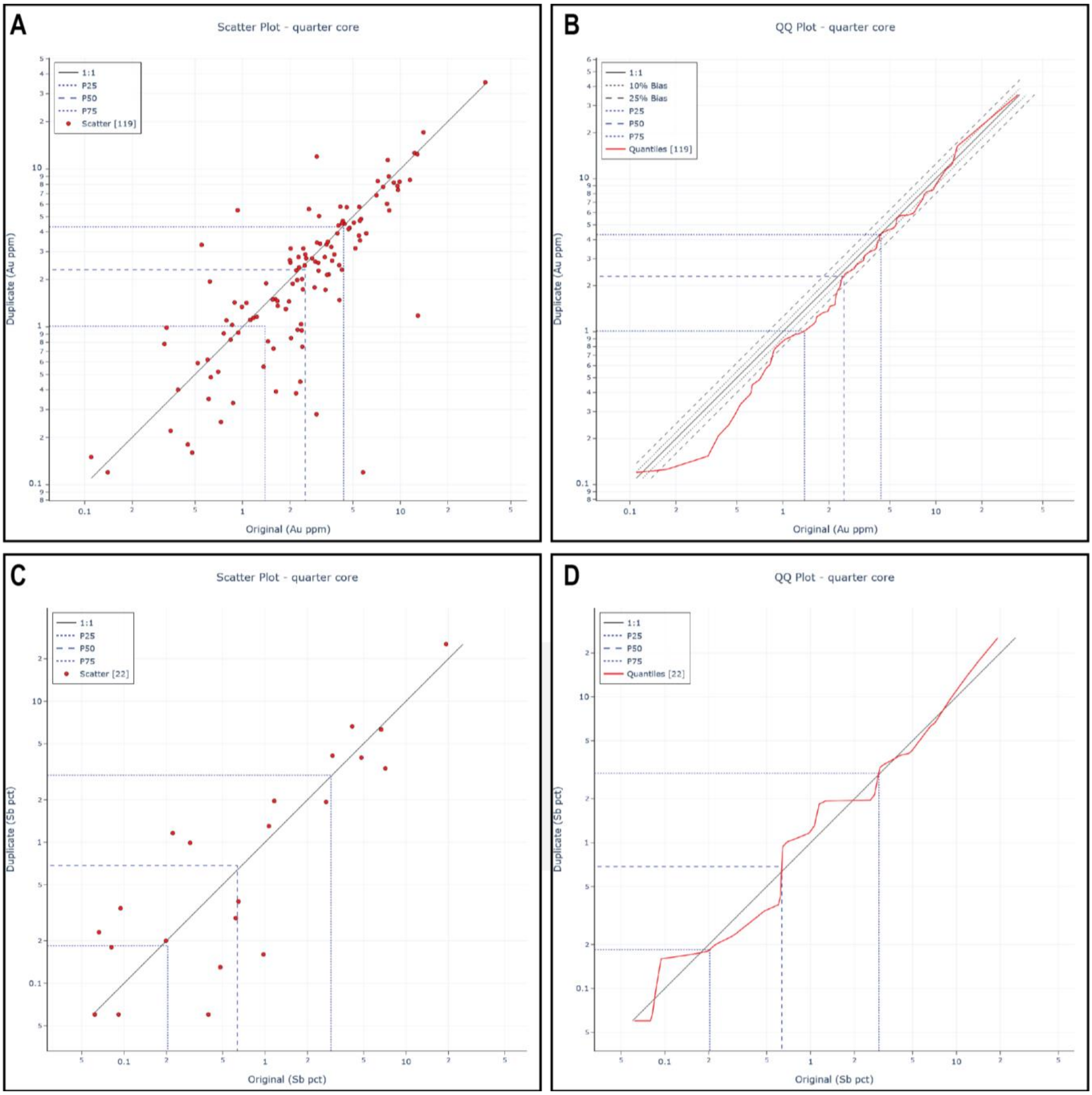


Figure 12-4: Scatter and QQ plots comparing the quarter-core check sample pairs for A–B) Au and C–D) Sb.

Table 12-4: Precision summary table for half-core check samples.

Split Type	Prospect	Analyte	No. pairs	LOQ	Wilcoxon p-Value	Wilcoxon (p95)
Quarter Core	Alexander River	Au	33	0.1 ppm	0.113	Accept H_0
Quarter Core	Big River	Au	30	0.1 ppm	0.23	Accept H_0
Quarter Core	Supreme	Au	26	0.1 ppm	0.063	Accept H_0
Quarter Core	Auld Creek	Au	30	0.1 ppm	0.109	Accept H_0
Quarter Core	Auld Creek	Sb	18	0.05%	0.799	Accept H_0
Quarter Core	Reefton Project	Au	119	0.1 ppm	0.003	Reject H_0

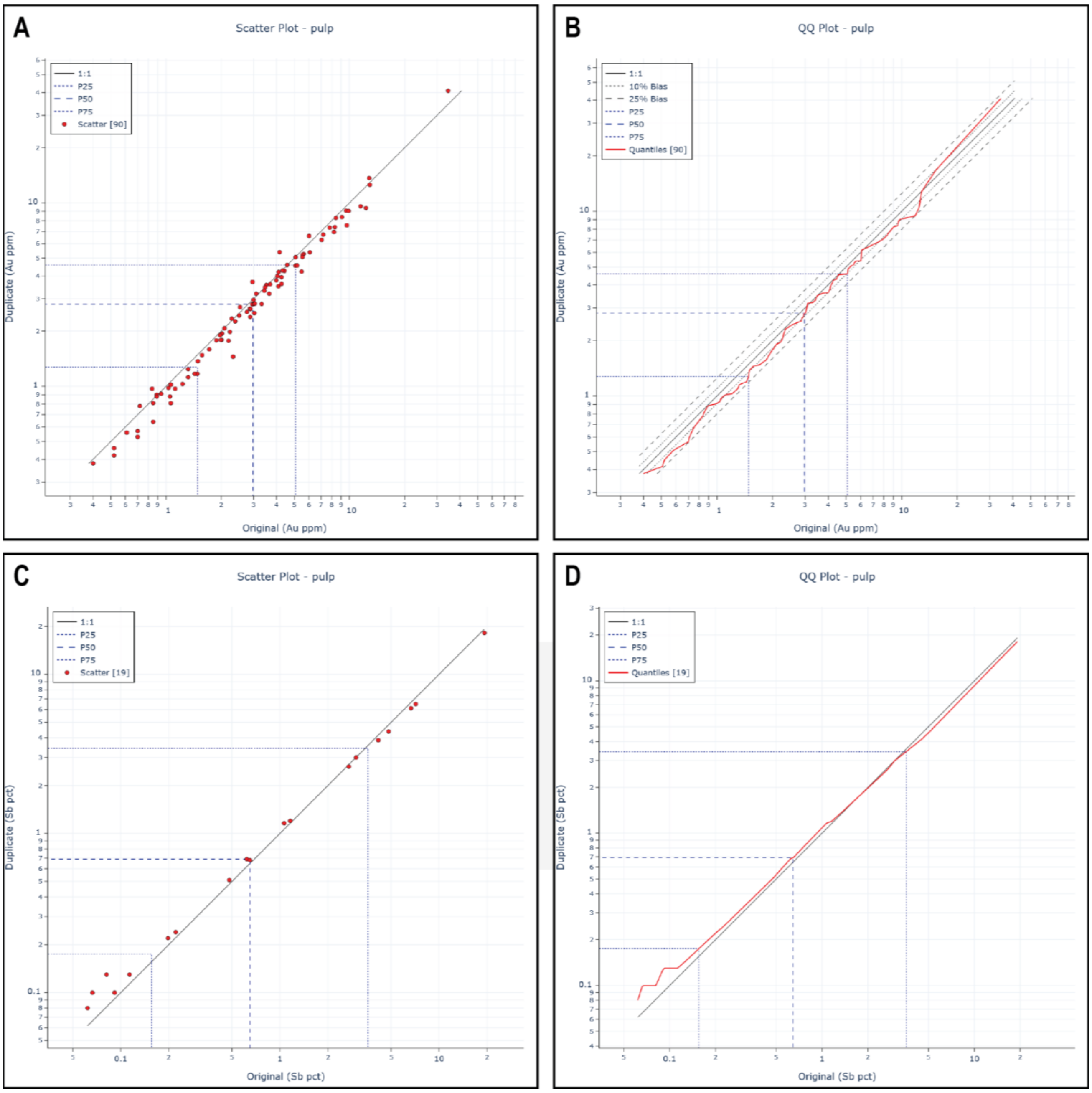


Figure 12-5: Scatter and QQ plots comparing the pulp check sample pairs for A–B) Au, and C–D) Sb.

Table 12-5: Precision summary table for pulp check samples.

Split Type	Prospect	Analyte	No. pairs	LOQ	Wilcoxon p-Value	Wilcoxon (p95)
Pulp	Alexander River	Au	30	0.1 ppm	0.000	Reject H_0
Pulp	Big River	Au	30	0.1 ppm	0.017	Reject H_0
Pulp	Auld Creek	Au	30	0.1 ppm	0.000	Reject H_0
Pulp	Auld Creek	Sb	19	0.05%	0.891	Accept H_0
Pulp	Reefton Project	Au	90	0.1 ppm	0.000	Reject H_0

12.5 Summary

The drillhole data collected by RRPL were comprehensive and semi-validated at the point of collection through a process of quality assurance and continual quality control. Verification checks completed by the QP (Sean Aldrich), or under the direct supervision of the QP (Sean Aldrich), uncovered a number of minor errors in the Excel workbooks provided by RRPL, which were corrected. The QP (Sean Aldrich) recommends that all data for the Project are moved from the Excel workbooks into a modern and secure database before any further drilling is undertaken.

The QP (Sean Aldrich) collected a total of 216 check samples (mix of half-core and pulp samples). The Au samples demonstrate a bias towards the original sample that is likely to be in the order of 4%, which is immaterial with respect to the objectives.

Overall, in the QP's (Sean Aldrich) opinion, the data on which the mineral resources are based are verified and fit for the purpose of an Inferred MRE. The QP (Sean Aldrich) considers the current data-management process to pose a moderate risk with respect to the DQO, and improvements to the data-management system and further investigations into the check sample bias are required for higher-confidence classifications.

The QP (Sean Aldrich) confirms that no material work has been conducted on the Project since the August 2024 site visit.

13. Mineral Processing & Metallurgical Testing

In January 2023, RRPL announced the results of metallurgical test work undertaken on samples from Alexandra River (6) and Big River (1) (Siren Gold Limited, 2023b). Analyses were undertaken at Bureau Veritas, Perth, in 2022. The test work programme included:

- bulk sample leach extractable gold (BLEG) tests;
- flotation;
- gravity testing;
- cyanidation;
- ultra-fine grinding (UFG) followed by cyanidation; and
- POX followed by cyanidation.

The samples from Alexander River and Big River indicated positive recovery (Table 13-1), and gravity test work indicated that 24–49% of the Au was free. RRPL noted that the preliminary results indicated total recoveries of 90–93% if processed using POX. This result is similar to the average 94% recovery achieved from the Globe Progress open pit by OGL. The nearby Snowy River Mine, operated by Federation Mining (Figure 5-1), is also predicted to have Au recovery of 85–95%, as indicated by a combination of gravity, flotation, and cyanide leach processes.

STEINERT Australia, Perth, scanned three samples from Alexander River. Ore sorting tests the combination sensor sorter separately, taking measurements from all four sensors (i.e. colour camera, 3D laser, induction, and X-ray transmission (XRT)). The data obtained were used to develop a bespoke separation algorithm for each of the material types. Both algorithms used laser diffraction and the XRT 3D laser sensor combination (Monteiro, 2023). Assuming the samples are representative, they indicate that Alexander River may be amenable to ore sorting.

Table 13-1: Initial metallurgical results from Alexander and Big River (Monteiro, 2023).

Composite	Head Grade (g/t Au)	Gravity Recovery (%)	Flotation Recovery (g/t Au)	Gravity + Flotation Recovery (%)	POX Recovery (%)	Gravity + Flotation + POX + Cyanidation Recovery (%)
Alexander River	5.0	40	90	94	98	93
Big River	4.0	30	94	94	92	91

In 2023, RRPL engaged GR Engineering Services Limited (GRES) to undertake a study to examine the possibility of establishing a processing facility at RRPL's Reefton Gold Project (Siren Gold Limited, 2023b). Based on the test work, GRES reviewed the process design criteria and proposed the following for a conceptual processing plant.

1. A nominal processing capacity of 1.25 million tonnes per annum, using a design head grade of up to 10 g/t Au to cater for surges of high-grade ore.
2. Three-stage crushing, with fine ore-bin storage and emergency reclaim.
3. A single-stage ball mill, with a flash-flotation cell treating cyclone underflow.

4. Separate gravity concentrators to treat ball-mill discharge and flash-flotation concentrate to produce Doré output of up to 80% of the Au in the feed to handle grade surges.
5. Gravity plus flotation of ~93%, with an overall recovery estimated at ~90% with POX.
6. Concentrate dewatering using a thickener and a filter to produce a transportable concentrate.
7. Appropriate tailings-handling facilities depending on plant location and underground paste fill requirements.
8. STEINERT ore sorters to reduce waste from the mining cycle and increase the mill-feed head grade.

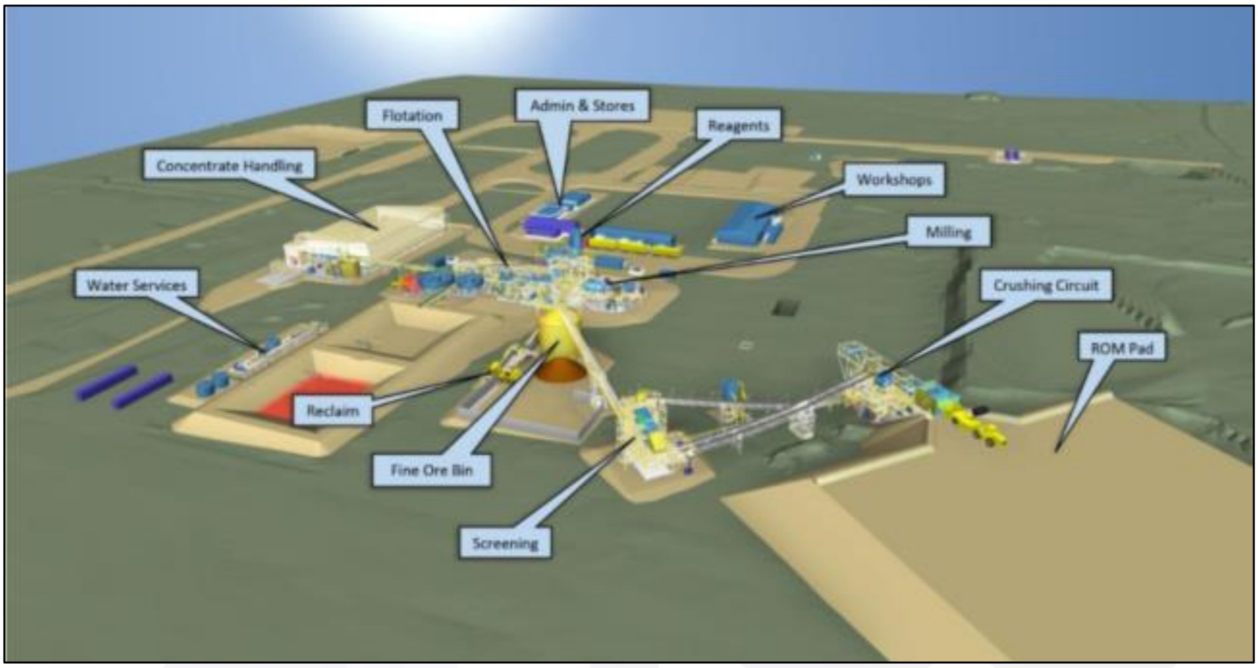


Figure 13-1: Conceptual layout of the RRPL processing plant facility (Siren Gold Limited, 2023b).

In September 2024, RRPL announced that three metallurgical samples selected from the Fraternal shoot at Auld Creek (Golden Point) yielded recoveries of >95% Au and Sb (Siren Gold Limited, 2024a). The samples were analysed for Au and Sb recoveries at ALS Perth, under the supervision of Leo Consulting Ltd. Changing the activator from $CuSO_4$ to $Pb(NO_3)_2$. improved the Sb recovery from 71% to 97%. A summary of the metallurgical sample test work is given in Table 13-2. Gold recoveries range from 95.8–98.3%, and Sb recovery is 71.3–89.7% when $CuSO_4$ is used as an activator. However, when $Pb(NO_3)_2$ was used as an activator on sample AC003, the Sb recovery improved from 71.3% to 97.6%.

Table 13-2: Auld Creek metallurgical test work (Siren Gold Limited, 2024a).

Sample No.	Au (g/t)	Au Flotation Recovery (%)	Sb (%)	SB Flotation Recovery (%) ($CuSO_4$)	Sb Flotation Recovery (%) ($Pb(NO_3)_2$)
AC001	3.0	95.8	0.08	89.7	Not completed
AC002	5.9	98.3	5.80	64.6	Not completed
AC003	4.1	97.8	1.35	71.3	97.6

14. Mineral Resource Estimates

14.1 Alexander River

14.1.1 Informing Data

The data were provided by RRPL in the form of Excel workbooks containing drillhole and trench information (Table 14-1). The drillhole database *Alexander Database August 2024* contains collar, geology, recovery, survey, and assay information. Information on assay methods was compiled and provided for each element, and an Au_Best_ppm field was created by RRPL using a priority system in which the highest priority took precedence. Density information was provided in a separate *RRL_Density_Master* Excel spreadsheet containing raw density data. The spreadsheet includes a calculation for bulk density and is sorted by mineralised domain. The trench database *AR_TR_MASTER* contains collar, survey, lithology, and assay information. Trench z values were adjusted by RRPL by draping them onto the LiDAR surface due to difficulties in obtaining accurate surveyed GPS z values for trenches. Both z values (original and draped to the LiDAR surface) are stored in the Leapfrog trench database.

Table 14-1: Data used for the Alexander River MRE.

Type	Holes	Metres
Diamond Drilling (DD)	66	11,021
Trench	16	142.7

14.1.2 Interpretation & Model Definition

14.1.2.1 Geological Domains

The interpretation of geological domains is crucial for providing a first-order constraint on grade populations and ensuring the geological controls on mineralisation guide the modelling of estimation domains.

Gold mineralisation is hosted in quartz reefs within tightly folded sandstone and siltstone units of the Greenland Group. Disseminated mineralisation comprises silicified acicular arsenopyrite within adjacent siltstone and sandstone and forms halos surrounding mineralised quartz reefs. Full descriptions of the Project geology and controls on mineralisation can be found in Section 0.

Geological modelling was conducted by the QP (Abraham Whaanga) in Leapfrog Geo, using interval selection and the vein system tools to create a geological model consisting of an oxide model and a lithology model. The oxide model compiled by the QP (Abraham Whaanga) consists of two categories: oxidised, including weathering selections of slightly weathered (sw), moderately weathered (md), and extremely weathered (ew); and fresh, i.e. unweathered (uw). The base of the weathering profile was taken as an offset surface from the topography using interval-selection weathering codes to define the offset (Figure 14-1), as drillhole coverage was not sufficient to model a surface directly. Selections for individual drillholes were adjusted to fit the surrounding data.

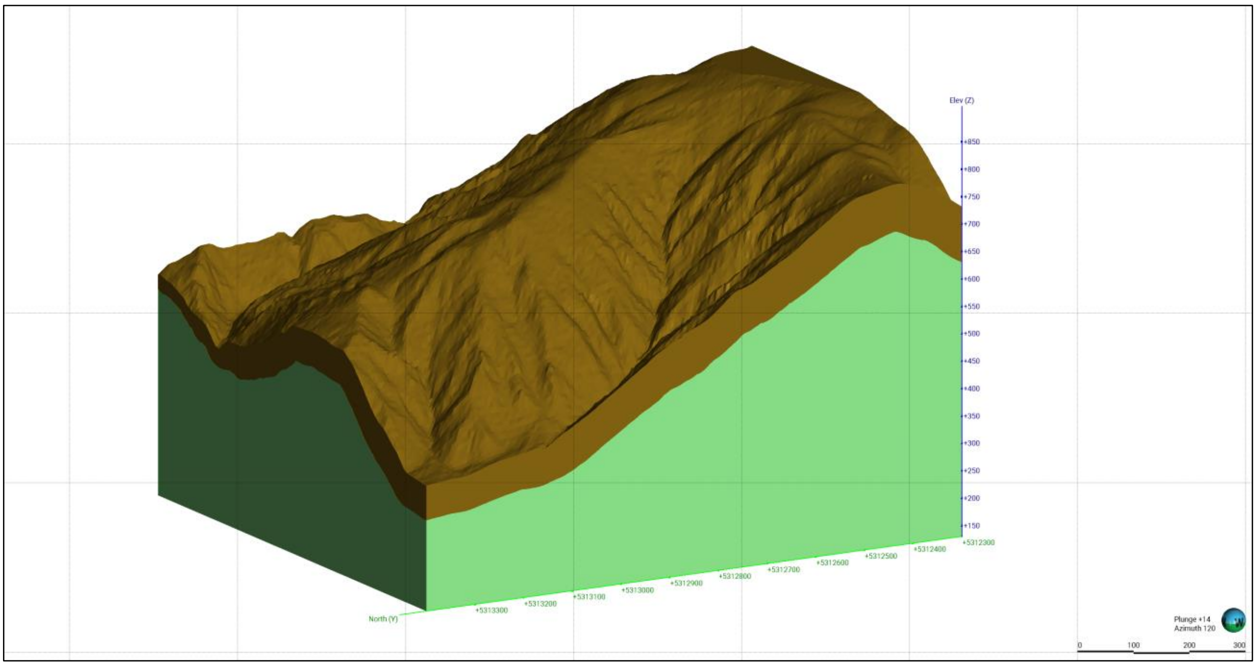


Figure 14-1: Alexander River oxide model. Brown = oxidised; green = fresh.

The geological model was based largely on the 2023 RRPL geological model interpretation and cross-section interpretations. The geological interpretation was validated by the QP (Abraham Whaanga) using surface trench data. The geological model interpretation supplied by RRPL was considered a reasonable interpretation of the reef trends and orientations at Alexander River. The QP (Abraham Whaanga) notes that RRPL used a nominal 0.5 g/t Au cut-off for top and bottom intercepts. In the geological model created by the QP (Abraham Whaanga), the reef surfaces were guided by lithological codes. The QP (Abraham Whaanga) created a merged drillhole and trench table with full lithology and assay information, with summary statistics reviewed and grouping lithology (Sum Log) and assay data. The logged lithologies with the highest Au grades (mean of 1.87–9.01 g/t) are described in Table 14-2.

Table 14-2: Alexander River Au grades for mineralised Sum Logs.

Lithology Code	Length (m)	Mean Au (g/t)	Description
QTZ	105.5	9.01	Quartz vein
QBX	10.9	3.69	Quartz breccia
MAR	106.5	3.32	Mineralised argillite
HBX	11.9	2.83	Host breccia
QGWK	48.4	2.75	Quartz greywacke
MGK	341.1	1.87	Mineralised greywacke

Note:

QGWK was originally logged by Kent as QSST (quartz sandstone) and changed to QGWK by RRPL.

RRPL supplied paper cross-sections as the basis of the geological interpretation. Mineralisation was categorised into either a quartz reef with a low-grade disseminated halo or a high-grade core. Two interpretations were constructed.

1. The entire reef was selected, using the cross-sections as a guide, and mineralised lithologies were selected exclusive of Au grade.
2. The interpretation isolated the high-grade vein section of the reef in the Bull East and McVicar West lodes, where a higher-grade core could be sub-domained separately (see Section 14.1.2.2).

A long section for the Loftus McKay domain is presented in Figure 14-2. Drilling defined a split in the vein and closed off the vein down-dip (Figure 14-3).

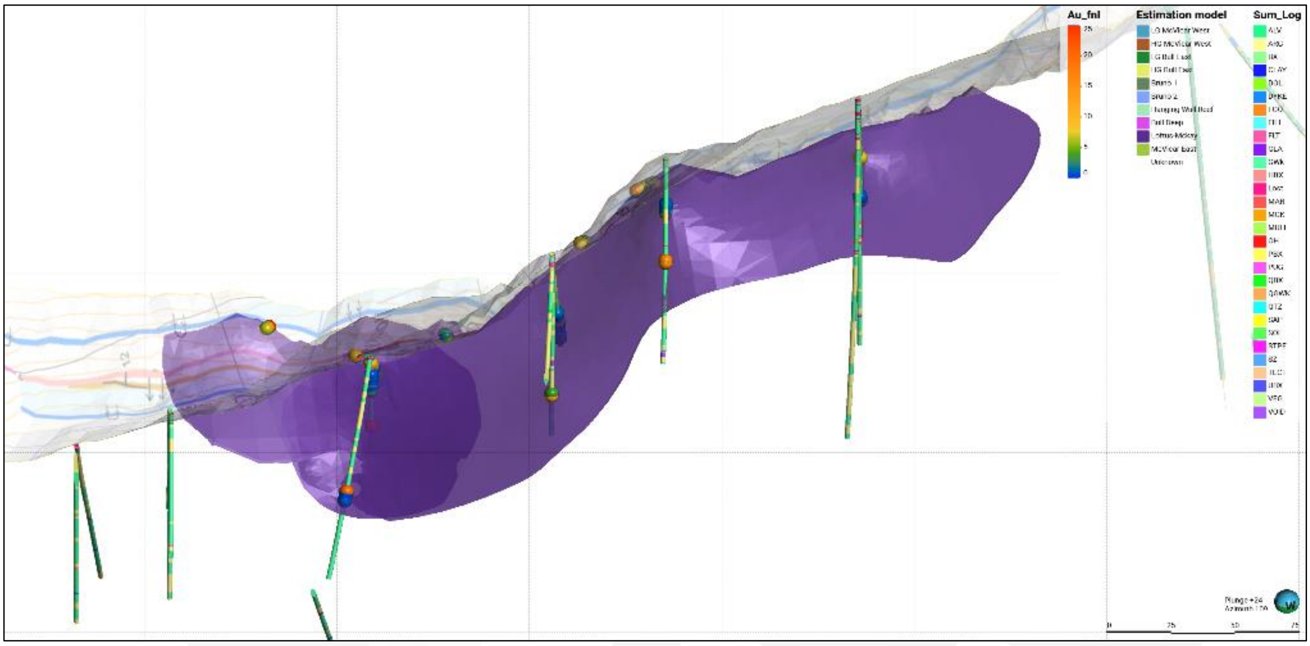


Figure 14-2: Long-section of Loftus McKay.

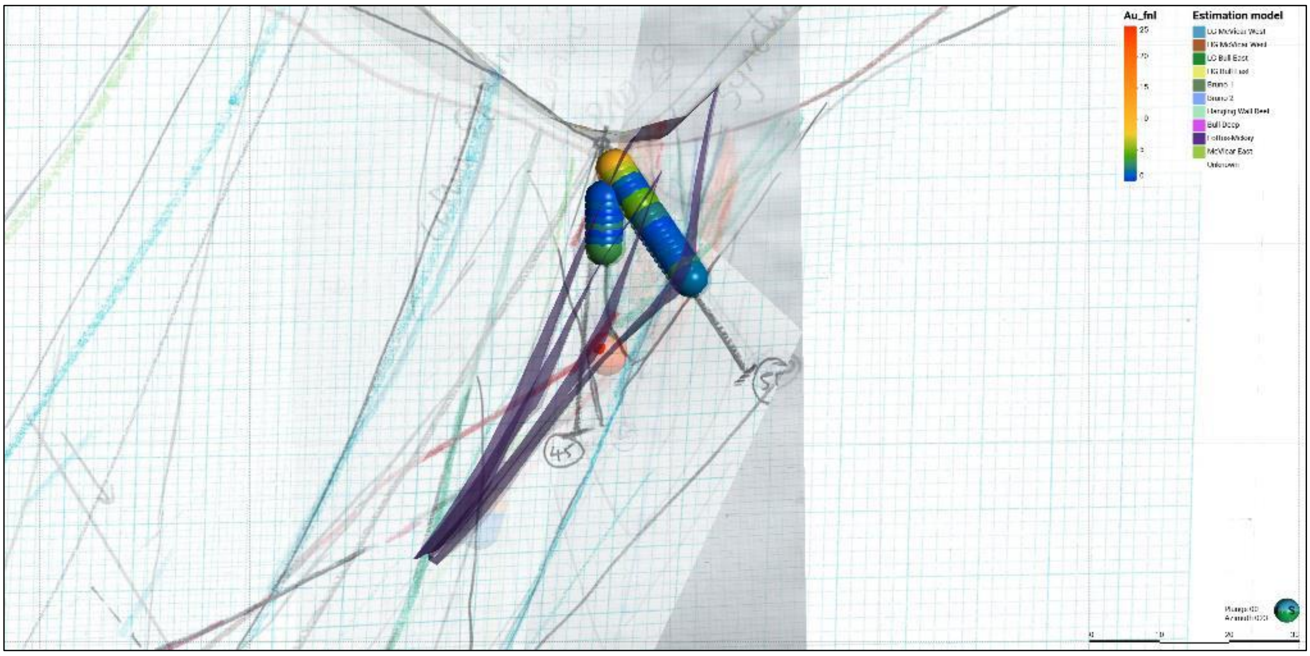


Figure 14-3: Cross-section of Loftus McKay, illustrating the split in the vein.

The Bruno 1 vein (Figure 14-4) crosscuts the Bruno 2 vein (Figure 14-5); however, there are insufficient data to determine the extent of the fault that separates the two. The mineralisation overlap on Bruno 2 is minimal; therefore, the QP (Abraham Whaanga) modelled this as a crosscutting relationship.

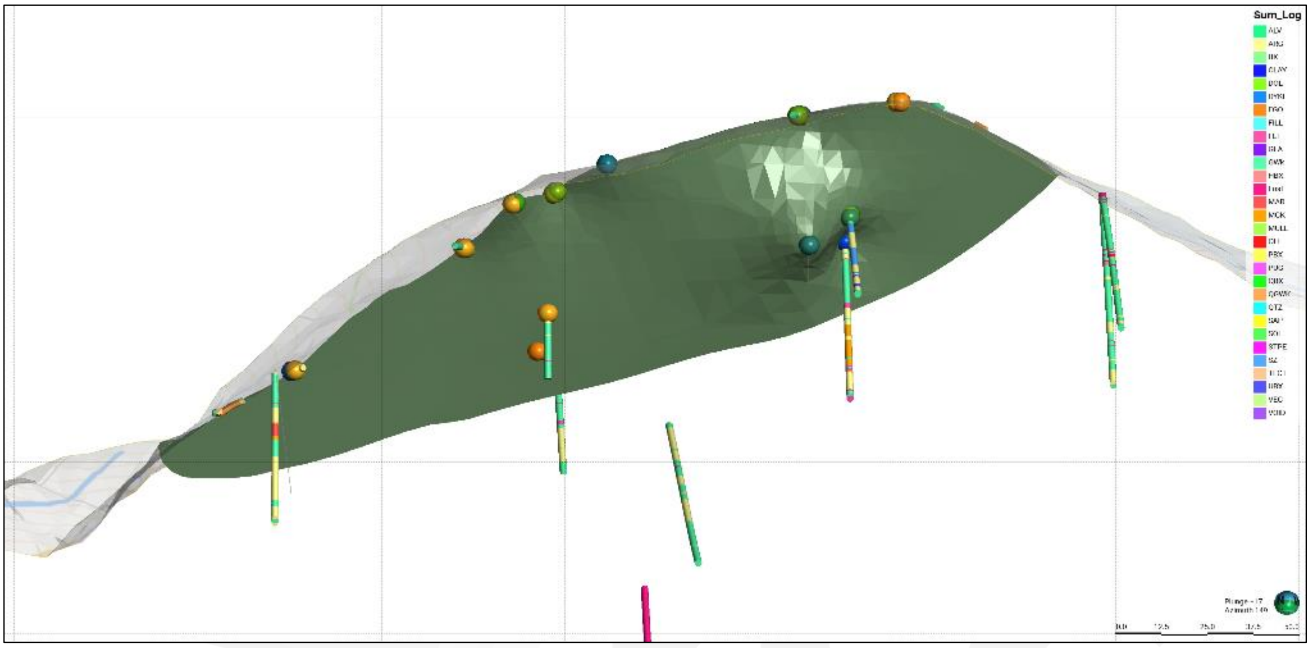


Figure 14-4: Long-section of the Bruno 1 vein.

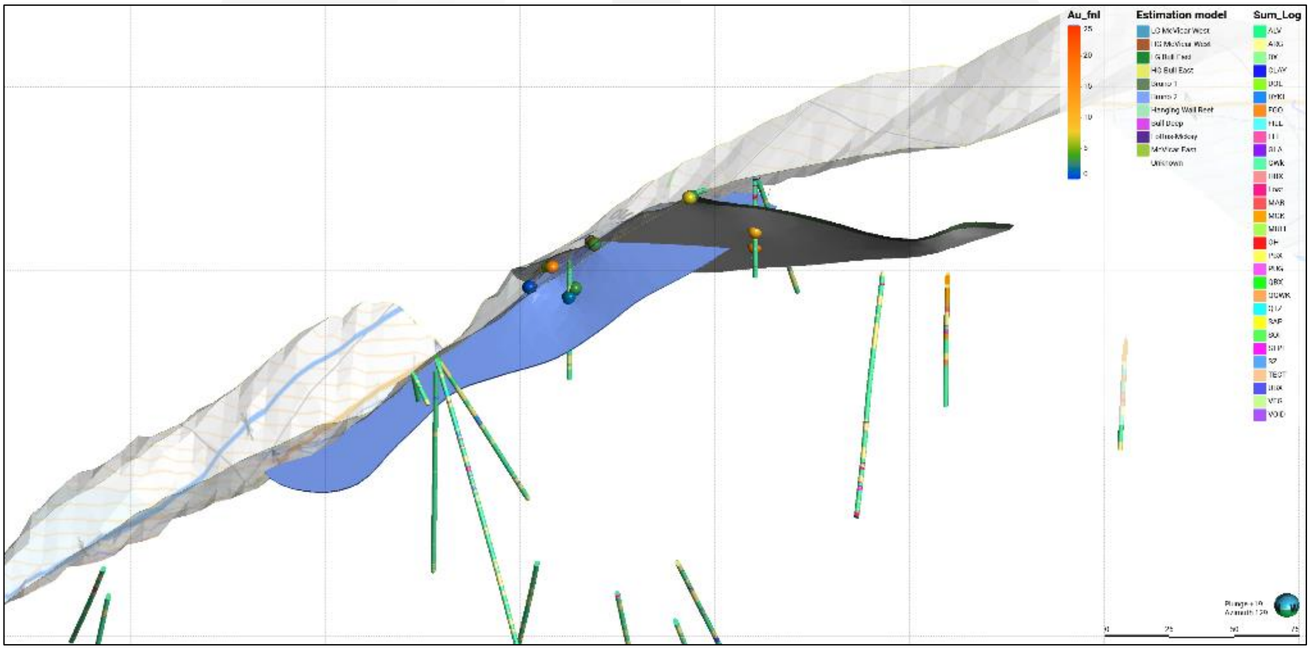


Figure 14-5: Long-section of Bruno 1 (green) cross-cutting Bruno 2 (blue).

The Hanging Wall Reef has a low number of widely spaced drillhole intercepts (Figure 14-6). The sample density is insufficient to categorise this domain as Inferred.

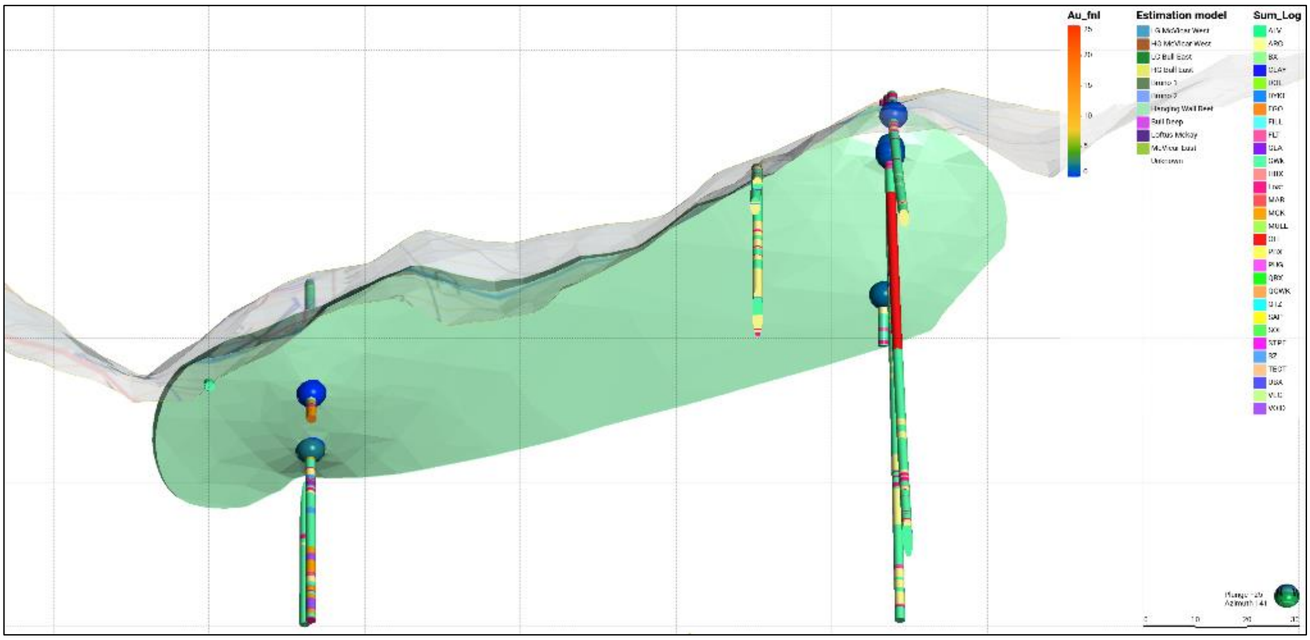


Figure 14-6: Long-section of the Hanging Wall Reef, illustrating the low drillhole density.

The Bull Deep vein has only three drillhole intercepts (Figure 14-7). The geological model for this vein follows the cross-sectional geological interpretation (Figure 14-8). Bull Deep is a low-grade potential target and may be the down-dip extension of McVicar West; however, more data are needed to confirm this, and the domain remains unclassified.

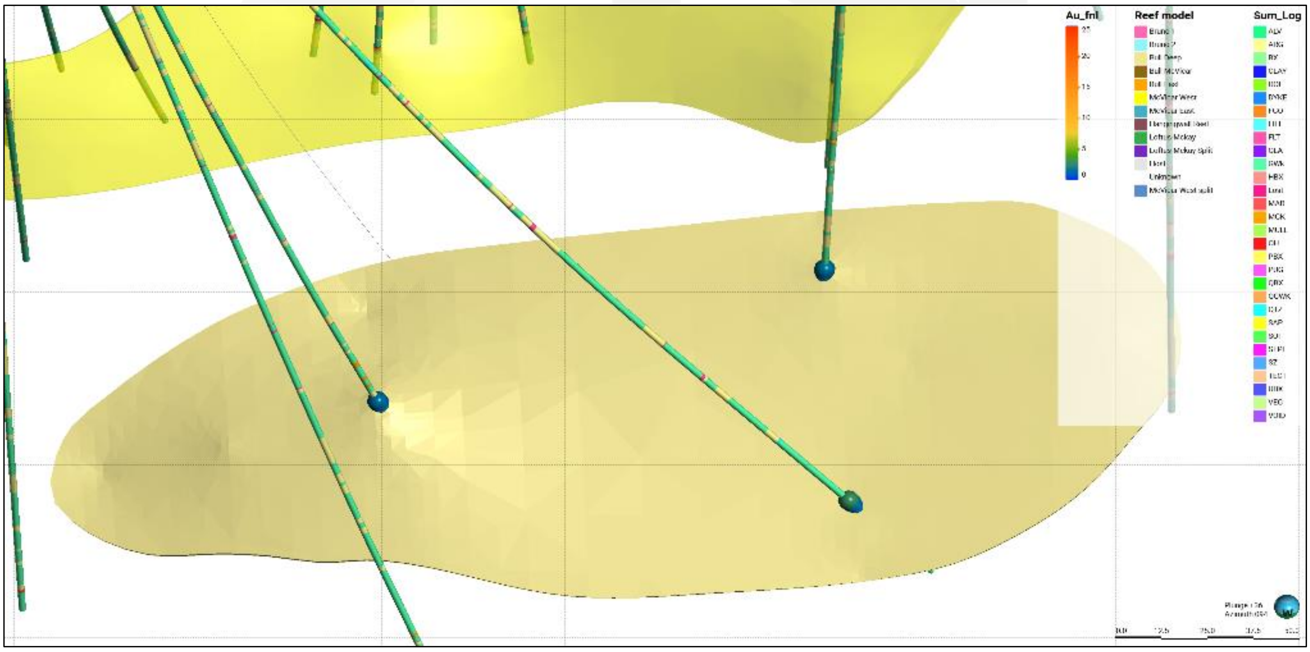


Figure 14-7: Long-section of Bull Deep.

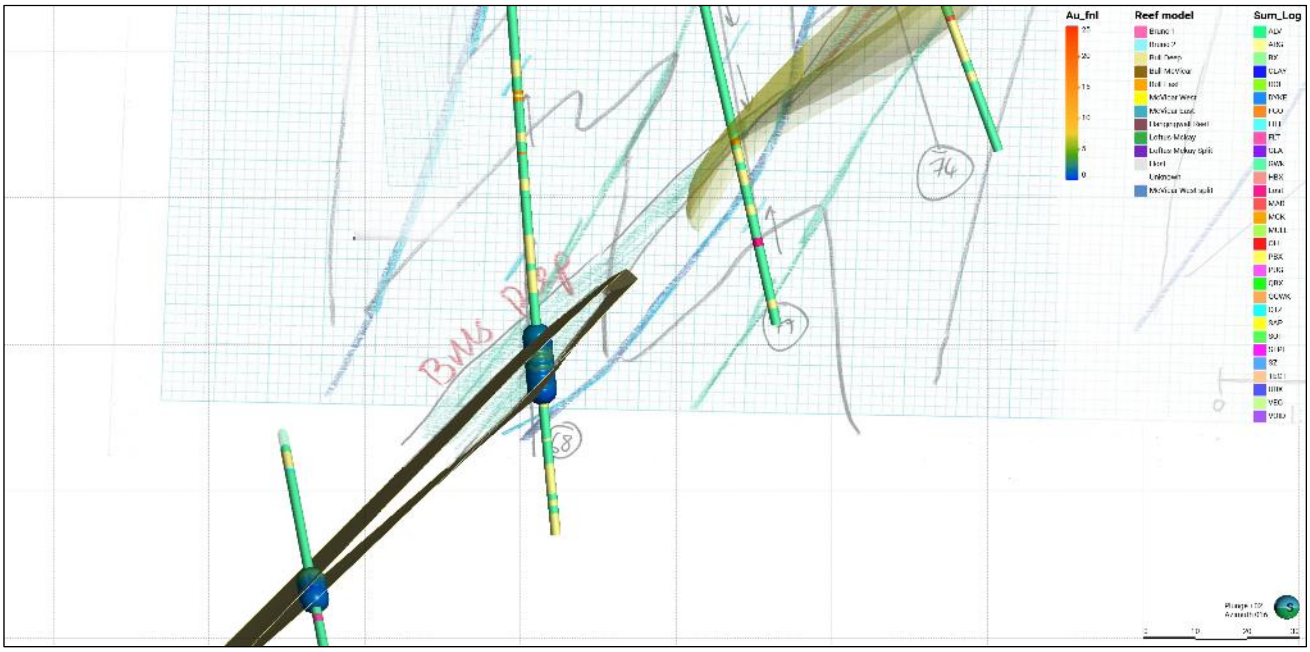


Figure 14-8: Cross-section of Bull Deep.

14.1.2.2 Estimation Domains

The estimation domains were derived from geological and weathering models. Sub-domaining was undertaken on the Bull East and McVicar West domains to help constrain high Au grades. The other domains displayed monomodal distributions with low coefficients of variation (CVs), expected grade contact behaviour, and reasonable adherence to intrinsic stationarity assumptions.

For McVicar West, the QP (Abraham Whaanga) created a wider low-grade halo to capture the disseminated mineralisation and an internal high-grade core to restrict the spread of higher grades, particularly down-dip to the north where the estimated grade of the deposit is highest (Figure 14-9 and Figure 14-10). The geological model contains a split, which is evident in the drilling data.

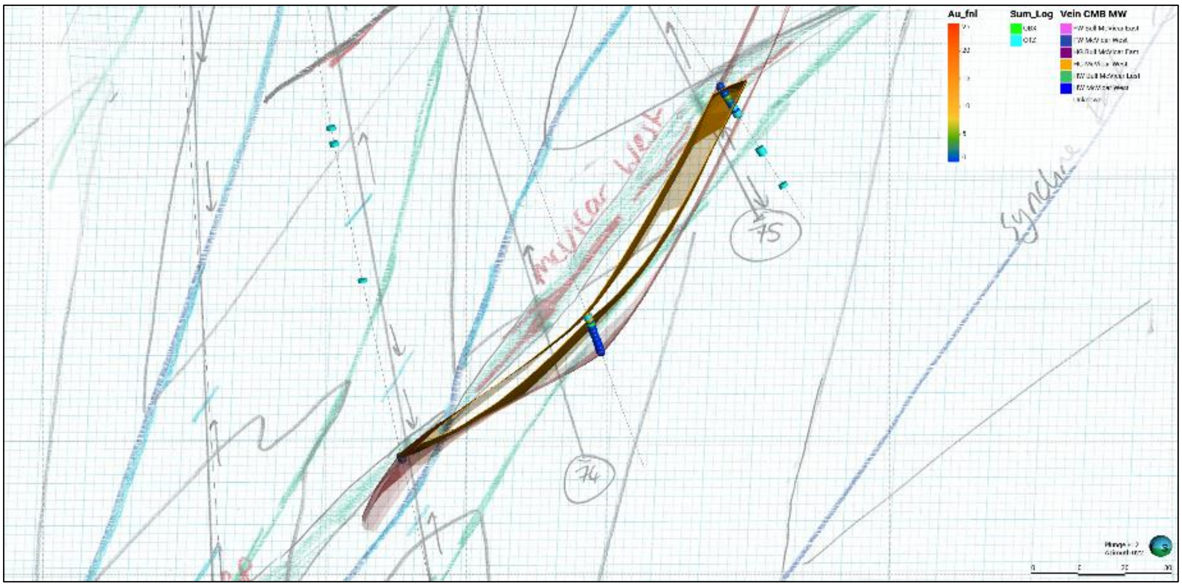


Figure 14-9: Cross-section of McVicar West.

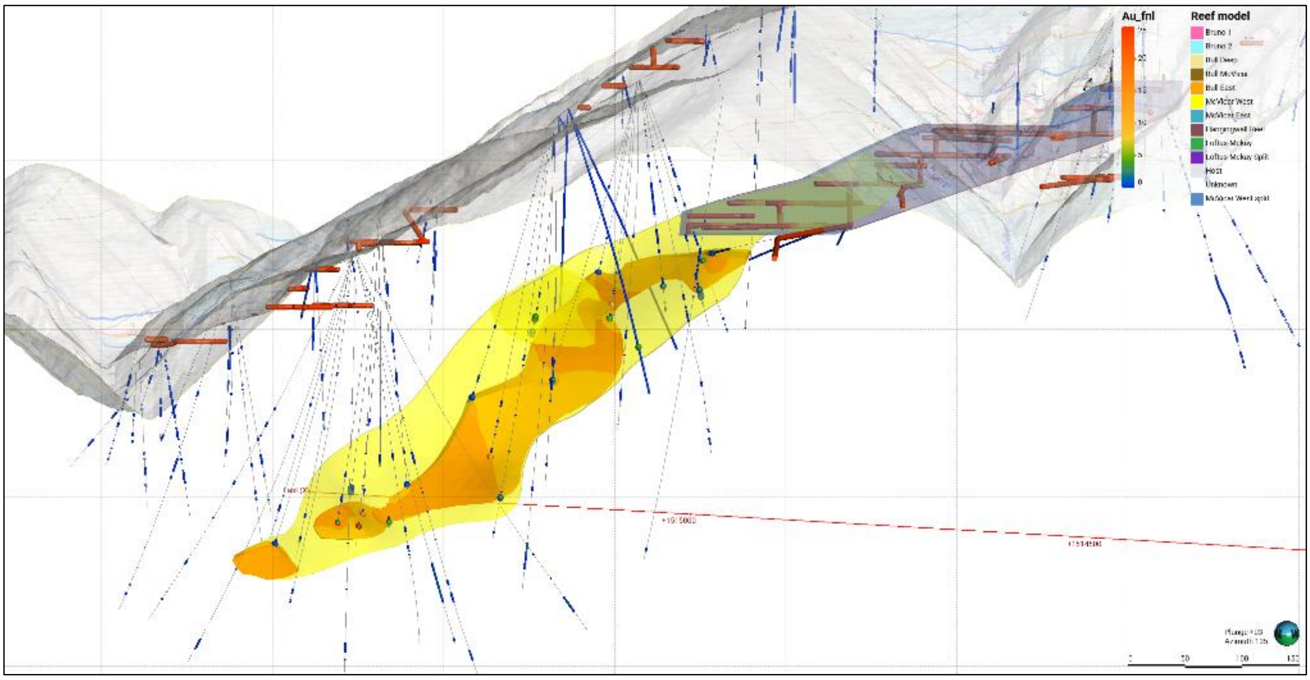


Figure 14-10: Long-section of the HG McVicar West sub-domain.

The Bull East domain consists of a low-grade and a high-grade reef. A cross section of the low-grade reef is presented in Figure 14-11. A long section of both reefs is presented in Figure 14-12.

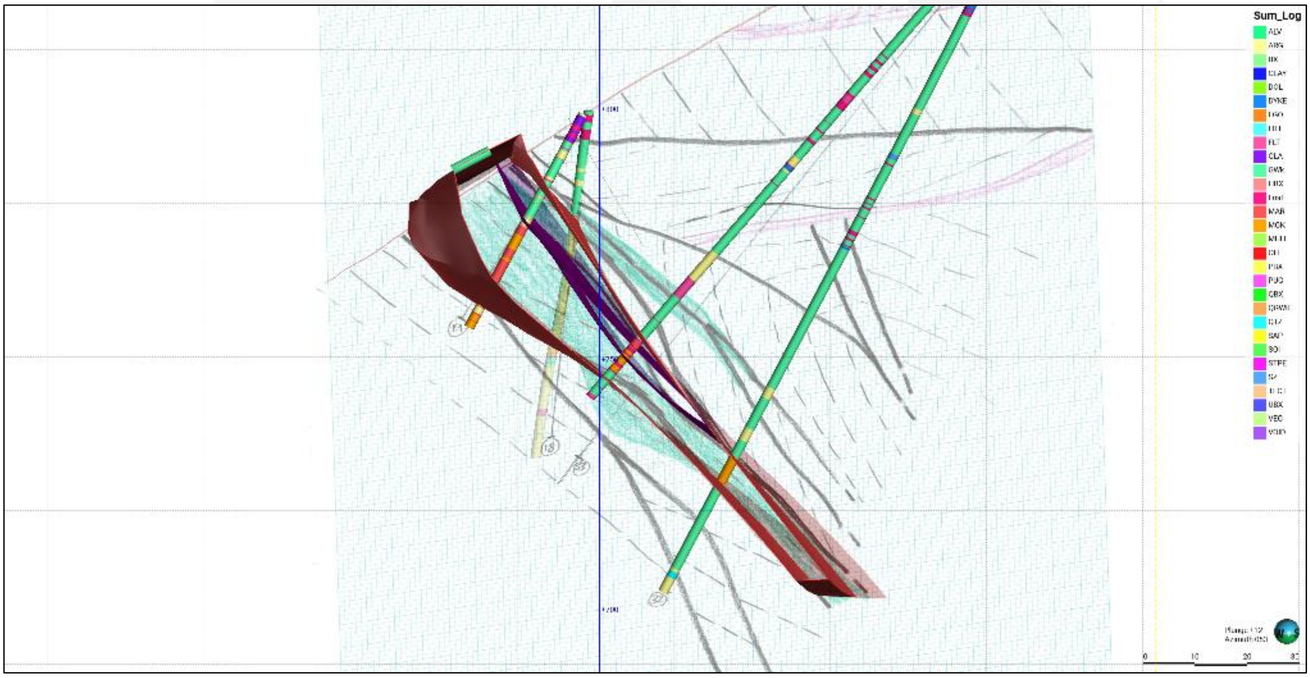


Figure 14-11: Cross-section of a low-grade reef at Bull East, including the disseminated mineralisation and halo. The higher-grade vein core is sub-domained.

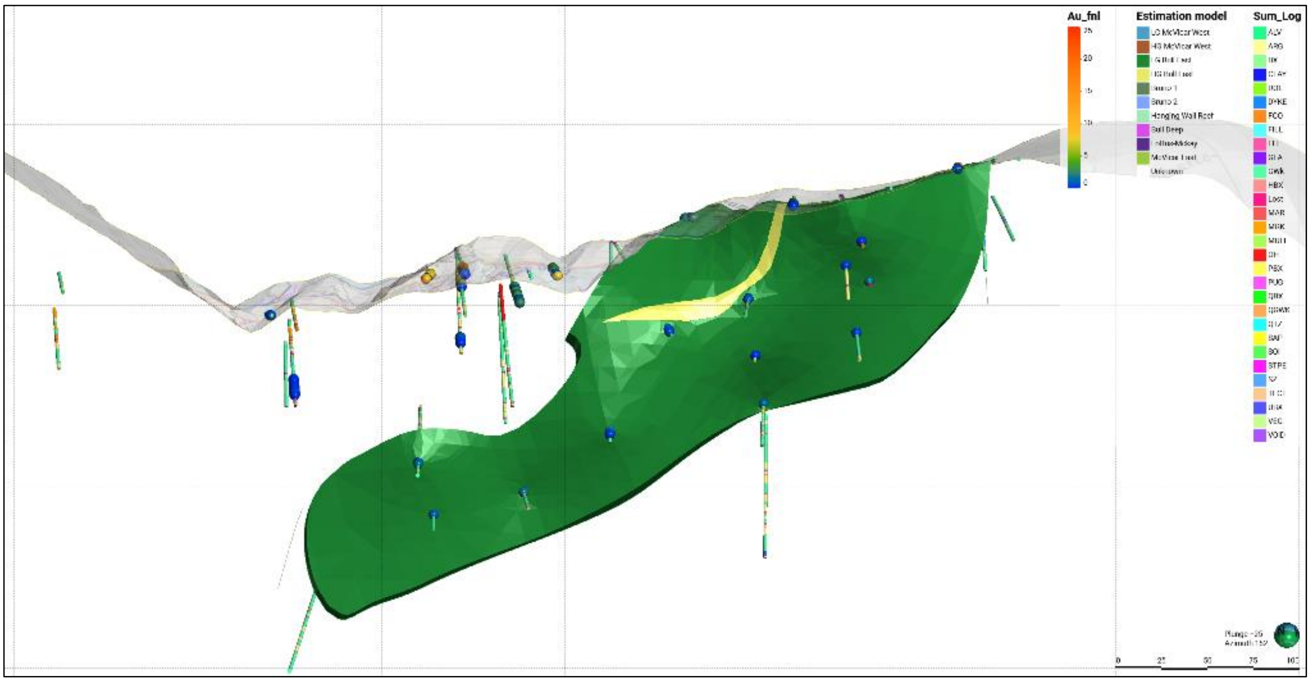


Figure 14-12: Long-section of high- and low-grade reefs at Bull East.

Contact analysis was completed to investigate the boundary conditions of each domain. Example contact analysis plots are presented in Figure 14-13 and Figure 14-14. The mean grade was reviewed inside the domains, around the boundaries, and outside the domains. There are clear transitions between the mineralisation hosted in quartz reefs and disseminated mineralisation occurring in halos surrounding the quartz reefs. This is consistent with the geological interpretation and logging of mineralisation from drill core. Hard boundaries were used for most domains during estimation to protect the distinct boundaries between estimation domains. A soft boundary was used for the HG McVicar West domain (with a range of 20 m) to make use of data filtered to be contained within the LG McVicar West domain. The LG Bull East and McVicar East share soft boundaries (Table 14-3).

Table 14-3: Soft-boundary parameters for the McVicar and Bull East domains.

Domain	Boundary Type	Range (m)
Estimation Model: HG McVicar West	Soft	20
Estimation Model: LG Bull East	Soft	100
Estimation Model: LG McVicar West	Soft	20
Estimation Model: McVicar East	Soft	100

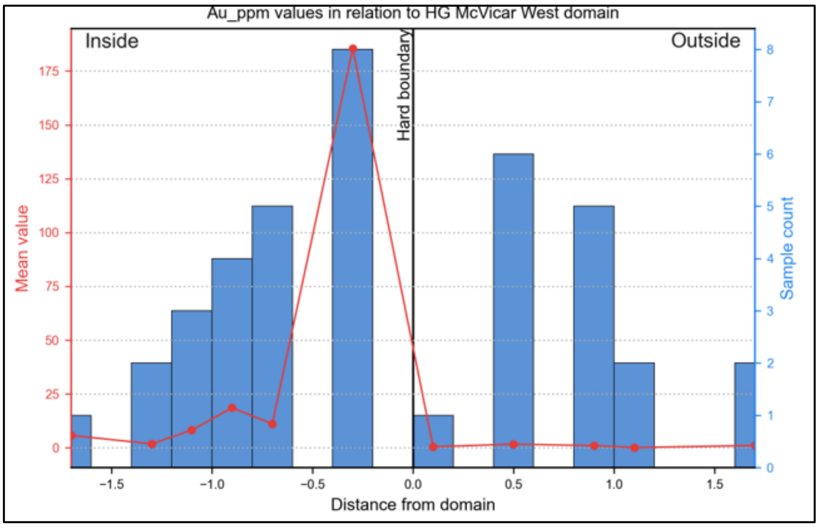


Figure 14-13: Contact analysis plot for the HG McVicar West domain.

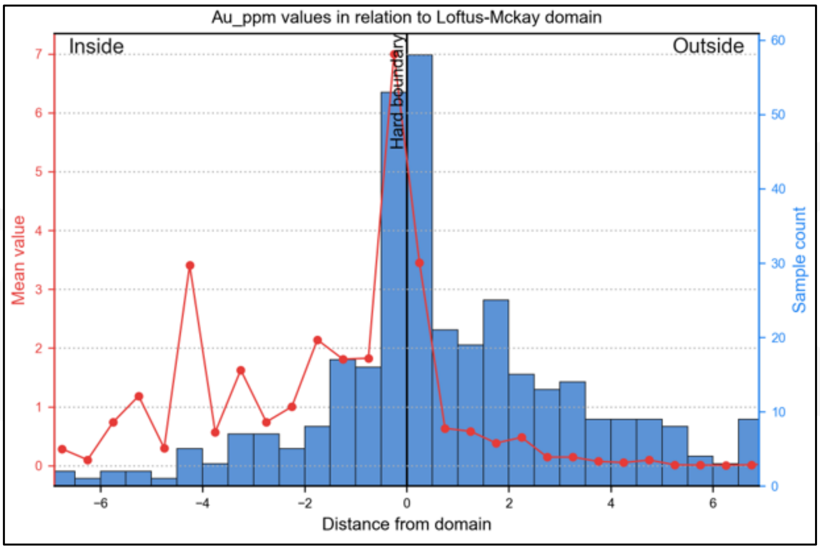


Figure 14-14: Contact analysis plot for the Loftus McKay domain.

14.1.2.3 Extrapolation

Extrapolation of the mineralised intersections varies from ~30–100 m. The extrapolation distances typically relate to the localised drillhole spacing. The most extreme distances occur in Bull Deep, where a small number of widely spaced drillholes define a 100–300 m long reef. This is considered a reasonable interpretation based on limited data and the potential km-scale reefs present at Alexander River.

14.1.2.4 Alternative Interpretations

At a large scale, the controls on mineralisation are typically well understood and supported by the data, geology, and historical mine workings. However, the geological domains may vary considerably between known locations, and additional sampling may provide alternative interpretations locally.

The QP (Abraham Whaanga) considers that, at this stage in the Project and at this level of data resolution, alternative interpretations of the geology and mineralisation are possible; however, they are not likely to generate models or estimates that are significantly different from those presented in this Report.

14.1.3 Summary Statistics & Data Preparation

Assay data were composited to 2-m intervals. Sensitivity to the compositing scheme was tested as part of the sensitivity analysis, comparing 1-m and 2-m composites.

All grade variables are characterised by skewed distributions and moderately high CVs (Table 14-4). For the high-grade domains, declustered CVs range from 0.7–3.4 before top-cutting. For the background domains, declustered CVs range from 0.7–1.5. Log histograms of Au for LG Bull East and McVicar East are illustrated in Figure 14-15 and Figure 14-16.

Table 14-4: Alexander River domain statistics: declustered 2-m composites.

Assay	Domain	Count	Length	Mean	SD	CV	Variance	Min	Q1	Q2	Q3	Max
Au	LG McVicar West	47	86.7	1.02	1.48	1.5	2.18	0.0	0.1	0.3	1.5	7.7
	HG McVicar West	23	46.0	23.5	80.8	3.4	6,531.7	0.31	0.8	2.9	8.6	389.8
	LG Bull East	323	204.4	2.6	5.1	2.0	26.1	0	0.3	0.9	2.5	36.9
	HG Bull East	14	22.3	3.6	2.5	0.7	6.1	0.9	2.3	3	3.8	13.1
	Bruno 1	19	31.6	6.1	4.9	0.8	24.4	0.2	1.5	6	10.7	13.6
	Bruno 2	6	10.7	6.2	5.1	0.8	25.8	1.2	2.5	4.6	9.7	13.8
	Hanging Wall Reef	14	25.6	0.8	0.9	1.1	0.8	0	0.1	0.7	1.4	2.6
	Bull Deep	15	28.5	1.4	0.9	0.7	0.9	0.4	0.9	1.2	1.7	4.1
	Loftus-Mckay	47	87.3	4.1	6	1.5	36.5	0.2	0.6	1.2	5.8	31.1
	McVicar East	81	146	2	2.1	1.1	4.6	0	0.3	1.2	3	9

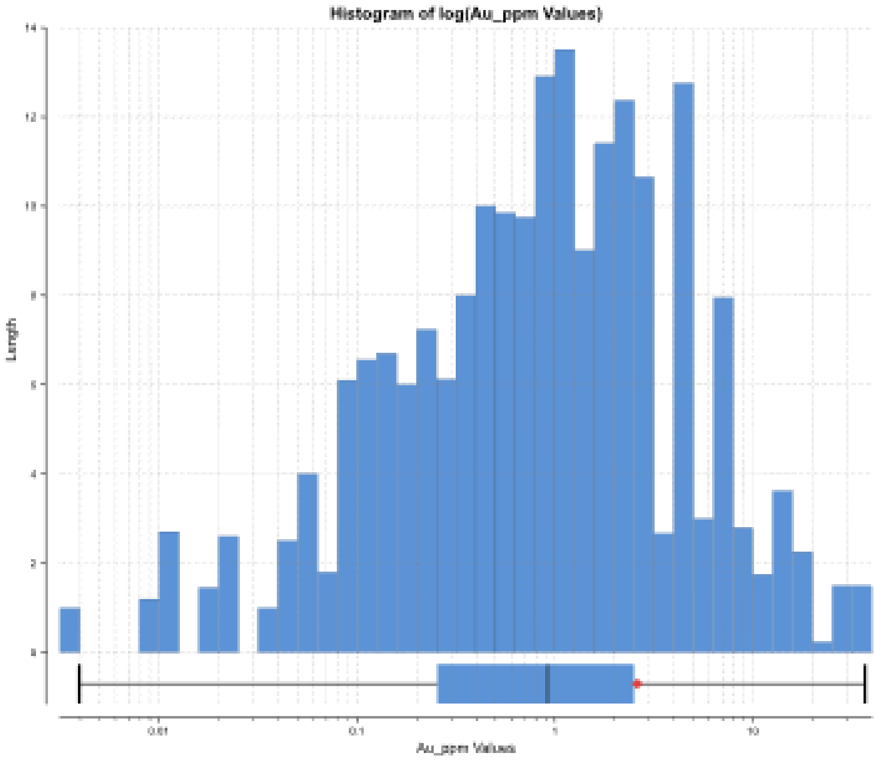


Figure 14-15: LG Bull East log histogram of the Au grade variable (declustered 2-m composites).

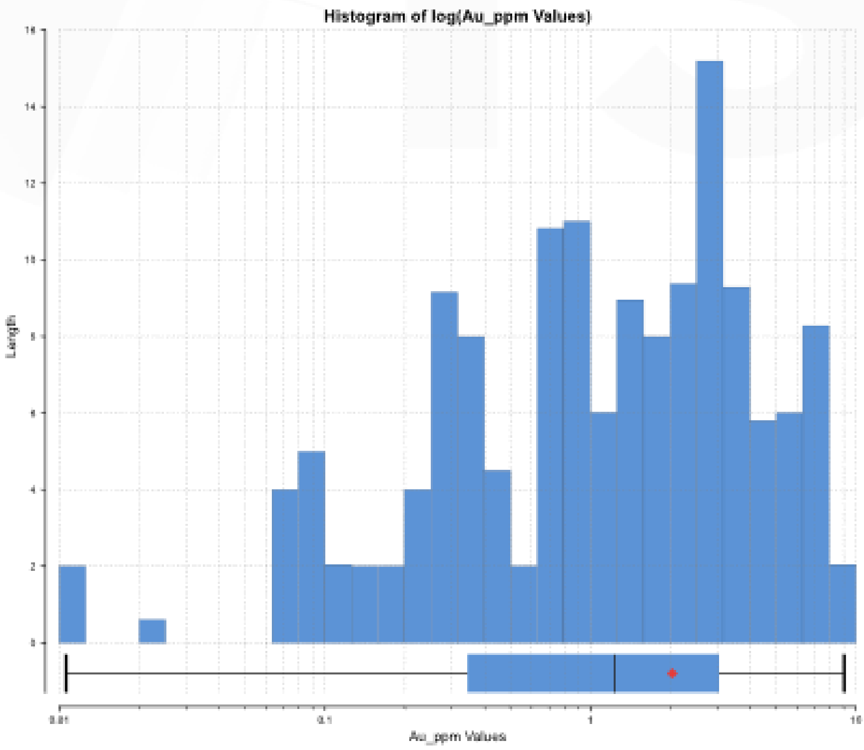


Figure 14-16: McVicar East log histogram of the Au grade variable (declustered 2-m composites).

14.1.4 Spatial Analysis & Variography

14.1.4.1 Gold

Experimental variography was completed on the normal-scores transform of the composited Au grades within each estimation domain. Variogram models were fitted using two spherical structures. Variogram models were fitted with a relatively low γ_0 ratio, with practical ranges (at which 90% of the variance is reached) of 55–130 m and 25–90 m in the major and semi-major directions, respectively. An example semi-variogram and associated model is presented in Figure 14-17. Variogram model parameters are presented in Table 14-5. The back-transformed continuity models were then used to assign weights in estimation. The variogram model fits the experimental data well for all the major domains and supports the level of confidence required for the estimation. Directions of continuity and ranges for minor domains with sparse data were correlated with major domains where geological continuity is similar and show poor data fit due to the narrow high-grade veins and disseminated halo defined by low and clustered drilling density. Bull Deep, the Hanging Wall Reef, and the 2nd estimation passes (with low sample support) in the major domains are excluded from the resource.

Table 14-5: Modelled variogram parameters for estimation domains.

Domain	Normalised Nugget	S1 Normalised Sill	S1 Major	S1 Semi-Major	S1 Minor	S1 Dip	S1 Dip Azi	S1 Pitch	S2 Normalised Sill	S2 Major	S2 Semi-Major	S2 Minor	S2 Dip	S2 Dip Azi.	S2 Pitch
HG Bull East	0.16	0.32	85.0	40.0	5.0	54.5	134.3	26.6	0.51	100.0	70.0	10.4	54.5	134.3	26.6
HG McVicar West	0.34	0.56	85.0	41.0	5.0	48.8	315.4	131.5	0.10	107.1	60.8	8.0	48.8	315.4	131.5
Bruno 1	0.18	0.25	39.0	25.0	4.0	55.0	143.6	20.2	0.56	106.5	62.8	6.0	55.0	143.6	20.2
Bruno 2	0.18	0.23	37.0	25.0	4.0	57.2	323.8	133.5	0.55	62.0	30.0	6.0	57.2	323.8	133.5
Bull Deep	0.14	0.03	55.0	80.0	7.0	49.7	283.4	167.3	0.81	130.0	100.0	8.0	49.7	283.4	167.3
Hanging Wall Reef	0.18	0.33	85.0	35.8	7.1	59.0	129.3	23.7	0.47	140.6	95.9	10.2	59.0	129.3	23.7
LG Bull East	0.10	0.49	68.8	47.4	3.1	66.4	145.6	28.6	0.41	166.1	90.5	6.0	66.4	145.6	28.6
LG McVicar West	0.34	0.54	75.0	50.7	6.4	48.8	315.4	131.5	0.12	141.2	95.9	12.9	48.8	315.4	131.5
Loftus-Mckay	0.21	0.40	65.1	43.0	6.5	53.7	310.2	135.1	0.38	145.6	89.3	12.0	53.7	310.2	135.1
McVicar East	0.16	0.40	69.4	42.	7.0	70.9	152.1	20.9	0.44	95.4	70.2	13.7	70.9	152.1	20.9

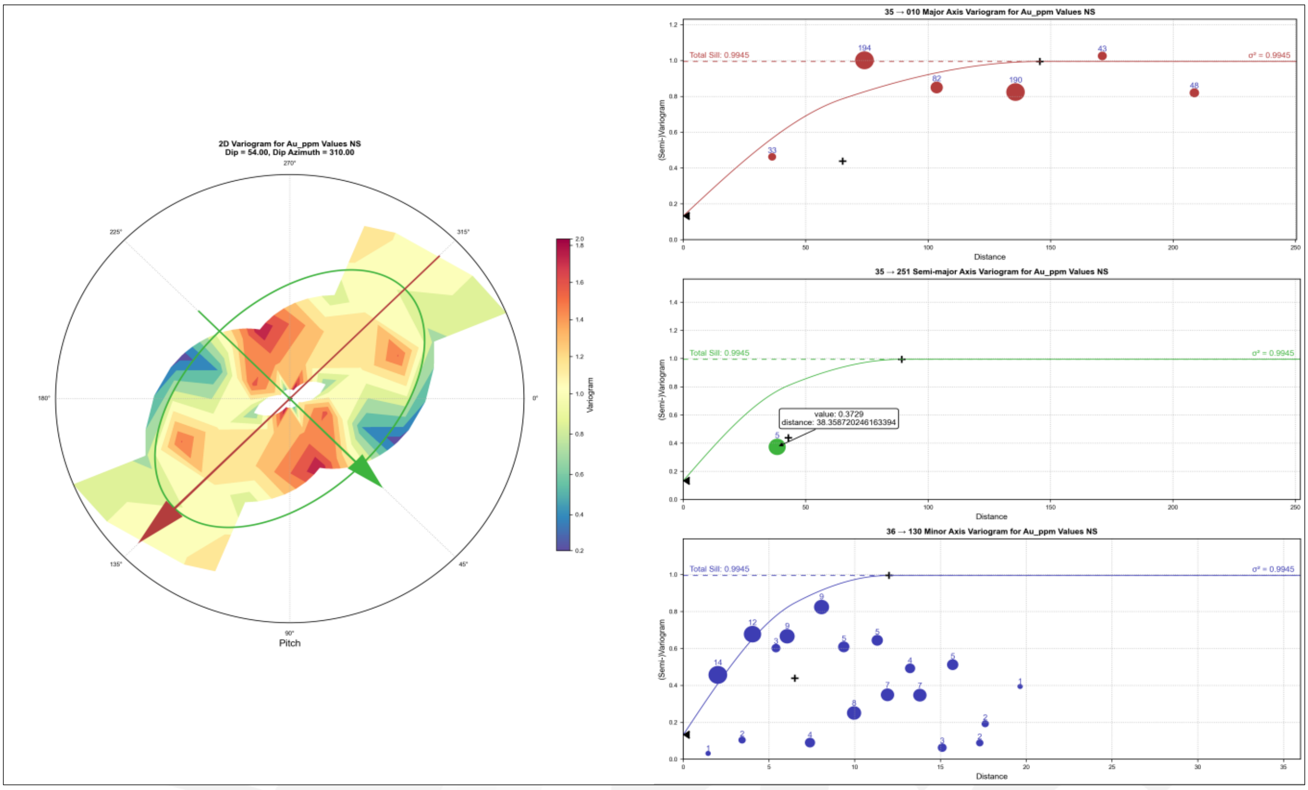


Figure 14-17: Loftus-Mckay semi-variogram.

14.1.4.2 Bulk Density

Density data were composited to 10 m and estimated using radial basis function (RBF) interpolants inside the two oxide domains, fresh and weathered (Figure 14-18). The mean density for estimation domains correlates well with average hard-coded density values used in historical estimates (Table 14-6).

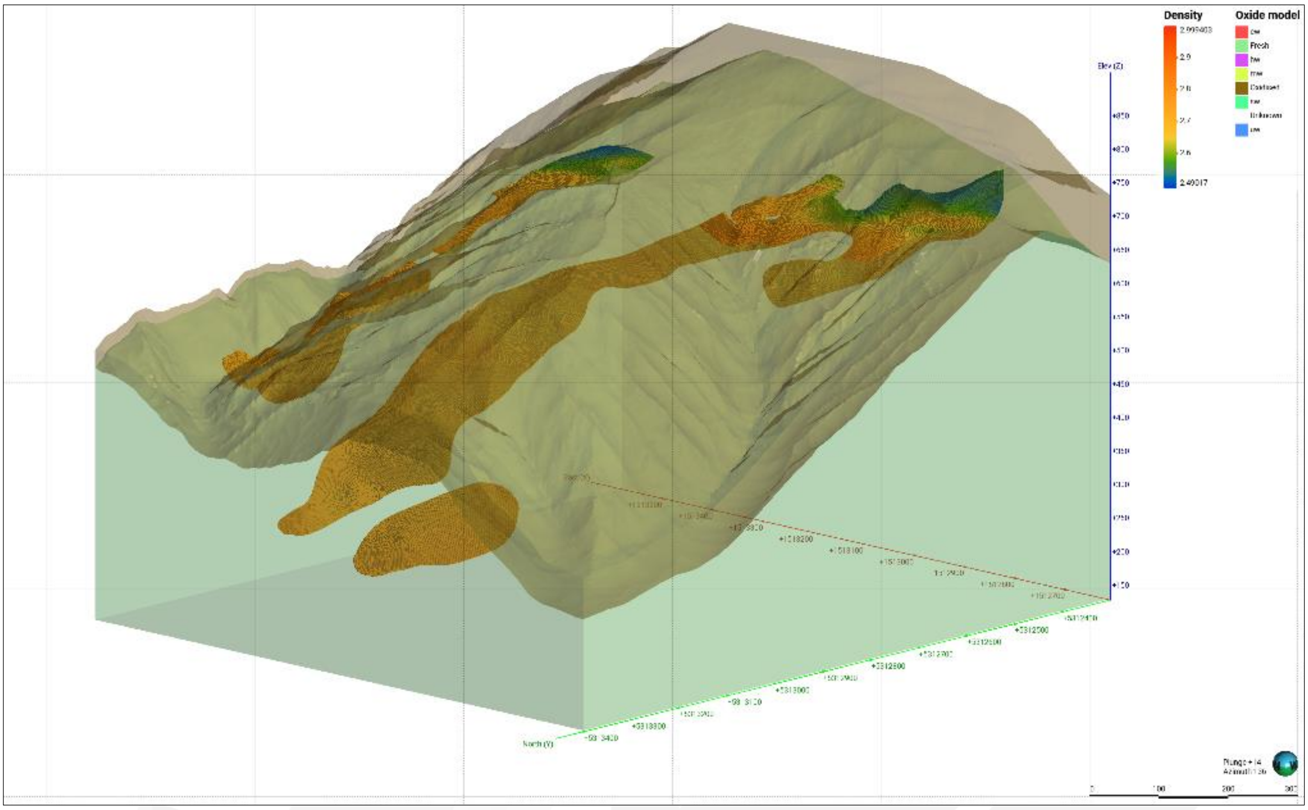


Figure 14-18: Alexander River density by domain within the oxide model

Table 14-6: Alexander River mean density by domain and oxide model.

Oxide Model	Domain	Mean
Fresh	Total	2.77
	LG McVicar West	2.75
	HG McVicar West	2.74
	LG Bull East	2.72
	HG Bull East	2.68
	Bruno 1	2.65
	Bruno 2	2.73
	Hanging Wall Reef	2.73
	Bull Deep	2.75
	Loftus-Mckay	2.75
	McVicar East	2.76
Oxidised	Total	2.65
	LG Bull East	2.63
	HG Bull East	2.64
	Bruno 1	2.60
	Bruno 2	2.72
	Hanging Wall Reef	2.71
	Loftus-Mckay	2.74
	McVicar East	2.72

14.1.5 Block Model

The block-model parameters are detailed in Table 14-7. The block model was left un-rotated, as the mineralisation strikes in two directions (north-northeast and northeast), with the block volume fill factor validated against the wireframe volumes. Block dimensions were chosen to represent half the drill spacing along strike x (20 m) and across strike y (20 m) and sufficiently represent the changes in orebody dip along z (10 m). The estimate was calculated using sub-blocks of 1.25 m × 1.25 m × 1.25 m (x, y, and z) to sufficiently represent changes in strike and dip that are typical for the narrow, high-grade shoot geometry.

Discretisation points of 5 × 5 × 5 along the x, y, and z directions were selected to match the compositing length and block size.

Table 14-7: Alexander River block-model parameters.

Number of Parent Blocks	49 × 56 × 74 = 203,056
Sub-Blocks per Parent	16 × 16 × 8 = 2,048
Sub-Block Mode	Octree
Base Point: x, y, z (m)	1512610, 5312300, 860
Parent Block Size: x, y, z (m)	20, 20, 10
Minimum Sub-Block Size: x, y, z (m)	1.25, 1.25, 1.25
Boundary Size (m)	980, 1120, 740
Leapfrog Rotation	None
Azimuth	0°
Dip	0°
Pitch	0°

14.1.6 Estimation

The variables were estimated in the block model in one or two passes, with variable orientation based on the vein reference surface to guide the ellipsoid direction.

Search distances and minimum samples, maximum samples, and samples per drillhole search neighbourhood are presented in Table 14-8 and

Table 14-9.

Table 14-8: Alexander River search-neighbourhood parameters.

Estimation Name	Ellipsoid Range Maximum	Ellipsoid Range Intermediate	Ellipsoid Range Minimum
Kr, Au_ppm in Estimation Model: HG Bull East	80	55	55
Kr, Au_ppm in Estimation Model: HG McVicar West pass 1	85	50	50
Kr, Au_ppm in Estimation Model: HG McVicar West pass 2	90	40	40
Kr, Au_ppm in Estimation Model: Bruno 1	85	50	50
Kr, Au_ppm in Estimation Model: Bruno 2	50	25	25

Estimation Name	Ellipsoid Range Maximum	Ellipsoid Range Intermediate	Ellipsoid Range Minimum
Kr, Au_ppm in Estimation Model: Bull Deep	130	100	50
Kr, Au_ppm in Estimation Model: Hanging Wall Reef	120	80	40
Kr, Au_ppm in Estimation Model: LG Bull East	105	65	65
Kr, Au_ppm in Estimation Model: LG McVicar West pass 1	115	75	75
Kr, Au_ppm in Estimation Model: LG McVicar West pass 2	90	40	40
Kr, Au_ppm in Estimation Model: Loftus-Mckay	115	70	70
Kr, Au_ppm in Estimation Model: McVicar East	80	40	40

Table 14-9: Alexander River number of samples per pass.

Estimation Name	Minimum Number of Samples	Maximum Number of Samples	Maximum Number of Samples per Drillhole
Kr, Au_ppm in Estimation Model: HG Bull East	4	25	3
Kr, Au_ppm in Estimation Model: HG McVicar West pass 1	4	25	3
Kr, Au_ppm in Estimation Model: HG McVicar West pass 2	2	25	
Kr, Au_ppm in Estimation Model: Bruno 1	2	25	
Kr, Au_ppm in Estimation Model: Bruno 2	2	25	
Kr, Au_ppm in Estimation Model: Bull Deep	2	25	
Kr, Au_ppm in Estimation Model: Hanging Wall Reef	2	25	
Kr, Au_ppm in Estimation Model: LG Bull East	4	25	3
Kr, Au_ppm in Estimation Model: LG McVicar West pass 1	4	25	3
Kr, Au_ppm in Estimation Model: LG McVicar West pass 2	2	25	
Kr, Au_ppm in Estimation Model: Loftus-Mckay	4	25	3
Kr, Au_ppm in Estimation Model: McVicar East	3	25	3

14.1.6.1 Gold

Grades were interpolated using OK. Search neighbourhoods were optimised for global accuracy to yield sufficient samples for estimation and create an acceptable level of smoothing while minimising conditional bias. Search neighbourhoods were 50–130 m in the major direction (x), 25–100 m in the semi-major direction (y), and set to semi-major for the minor direction (z). The variable orientation tool was used to account for strike and dip changes in the wireframes; sufficient samples fell within the maximum value and were weighted by the variogram model. A minimum of four and a maximum of 25 samples were used to inform the estimate in most domains. A maximum number of three samples per drillhole was used to ensure a minimum of two drillholes were included per estimate. Minor domains and second-estimate passes had a minimum of two samples, and the maximum number of samples per drillhole limit was removed to fill the blocks within the domain.

Top-cuts were applied for the McVicar West and Loftus-Mckay domains to limit the influence of extreme values on the estimate (Table 14-10). Drillhole AXDDH084 had one sample within the HG McVicar West domain of 1.05 m at 1,460 g/t, with visible Au logged in the core (Figure 14-19).

Table 14-10: Alexander River top-cuts applied.

Domained Estimation Name	Lower Bound	Upper Bound
Au_ppm in Estimation Model: HG McVicar West	0.005	30
Au_ppm in Estimation Model: HG McVicar West	0.005	30
Au_ppm in Estimation Model: LG McVicar West	0.005	30
Au_ppm in Estimation Model: LG McVicar West	0.005	30
Au_ppm in Estimation Model: Loftus-Mckay	0.039	25

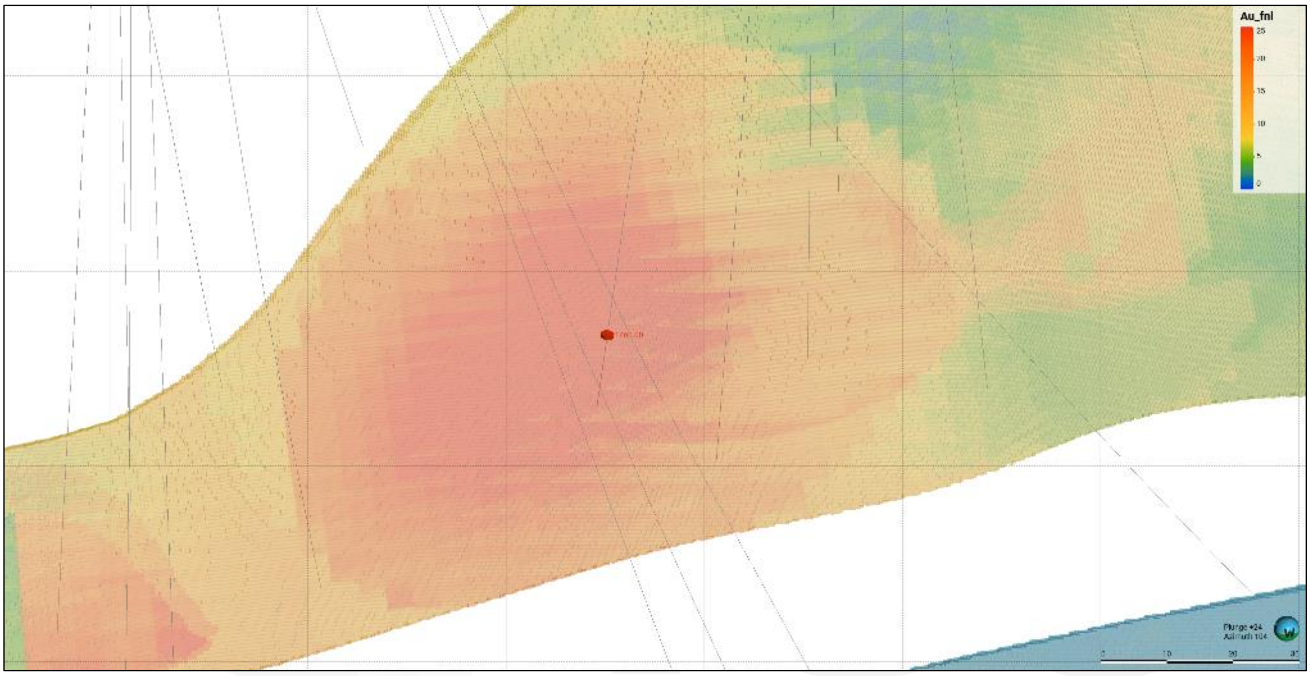


Figure 14-19: Drillhole AXDDH084, 1.05 m at 1,460 g/t

14.1.7 Validation

Block model grades were validated by comparing the input mean grades with the block model mean grade using swath plots and visually using cross-sections. The QP (Abraham Whaanga) considers the block model to be robustly estimated.

14.1.7.1 Global Mean Validation

For the purposes of a global mean comparison, the Mc Vicar West and Bull East domains that use sub-domains and soft boundaries have been combined, and these domains show higher mean composite grades than the block mean grade (Table 14-11). This is due to the smoothing of extreme grades and inclusion of samples outside the domain estimated within the soft boundary limits. The high variance between the block grade and the declustered composite grade for most domains is due to the widely spaced and clustered drill data and variable nature of the narrow high-grade veins that occur within a disseminated halo. The variability is reflected in the inferred classification. Blocks with low sample support estimated in the 2nd pass are excluded from the resource.

Table 14-11: Alexander River mean-grade block-model and composite comparisons.

Domain	Block Mean Grade (g/t)	Composite Mean Grade (g/t)	Declustered Composite Mean Grade (g/t)	Relative Difference between Block Grade & Declustered Composite Grade (%)
McVicar West	4.23	2.78	4.13	3%
Bull East	1.43	1.54	1.82	-22%
Bruno 1	5.34	5.55	6.08	-12%
Bruno 2	5.16	6.11	5.24	-2%
Bull Deep	1.55	1.42	1.57	-1%
Hanging wall reef	0.80	0.75	0.89	-10%
Loftus-Mckay	5.73	4.44	6.57	-13%
McVicar East	2.41	4.04	2.79	-14%

14.1.7.2 Swath Plot Validation

Block model Au grades were validated by comparing the declustered input mean composite grades with the block model mean grade from OK, nearest neighbour, and inverse distance estimates using swath plots supported by visual cross-section validation. These swath plots were generated for Au in the x and z directions and across strike in all estimation domains. An example for the McVicar West y direction is illustrated in Figure 14-20. The plots indicate the estimation results are unbiased and appropriately smoothed, and that outliers did not lead to bias in areas of low sample support.

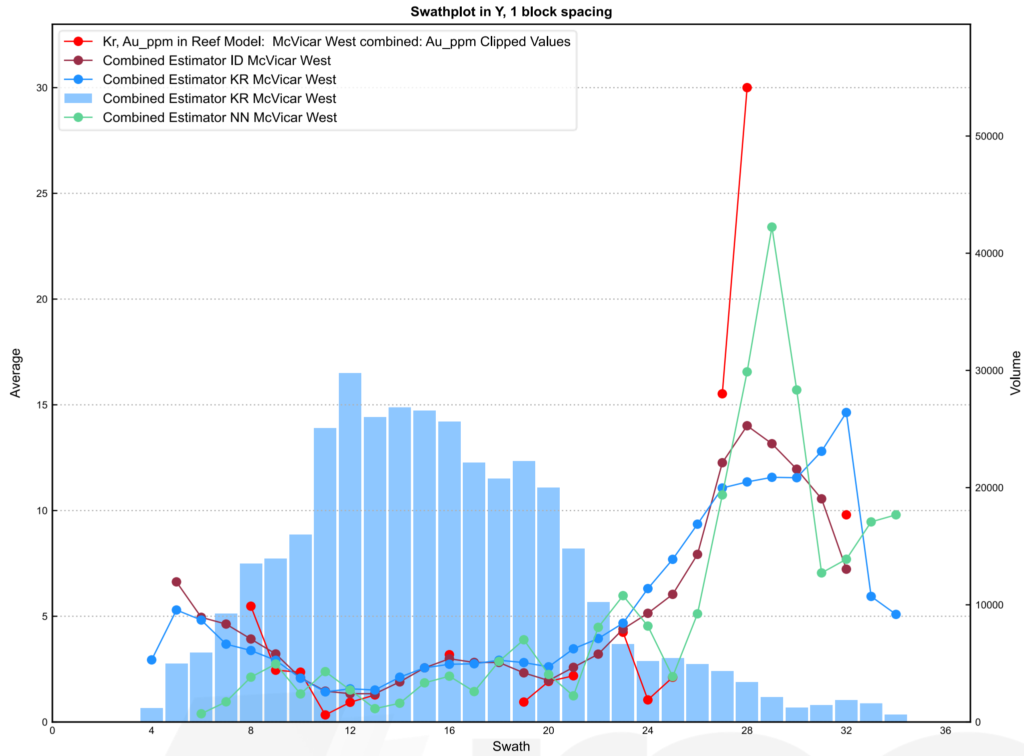


Figure 14-20: McVicar West swath plot (y direction).

14.1.7.3 *Visual Validation*

Visual validation along cross-sections demonstrated good correlation between the input grade and OK-estimated block grades (Figure 14-21 and Figure 14-22). As expected from the smoothing effect of OK estimation, fluctuations between zones of internal dilution and zones of higher-grade mineralisation are attenuated in the smoothed block grade profiles. Some drillholes presented in the visual validations are off-plane due to deviation and may not spatially align with block grades.

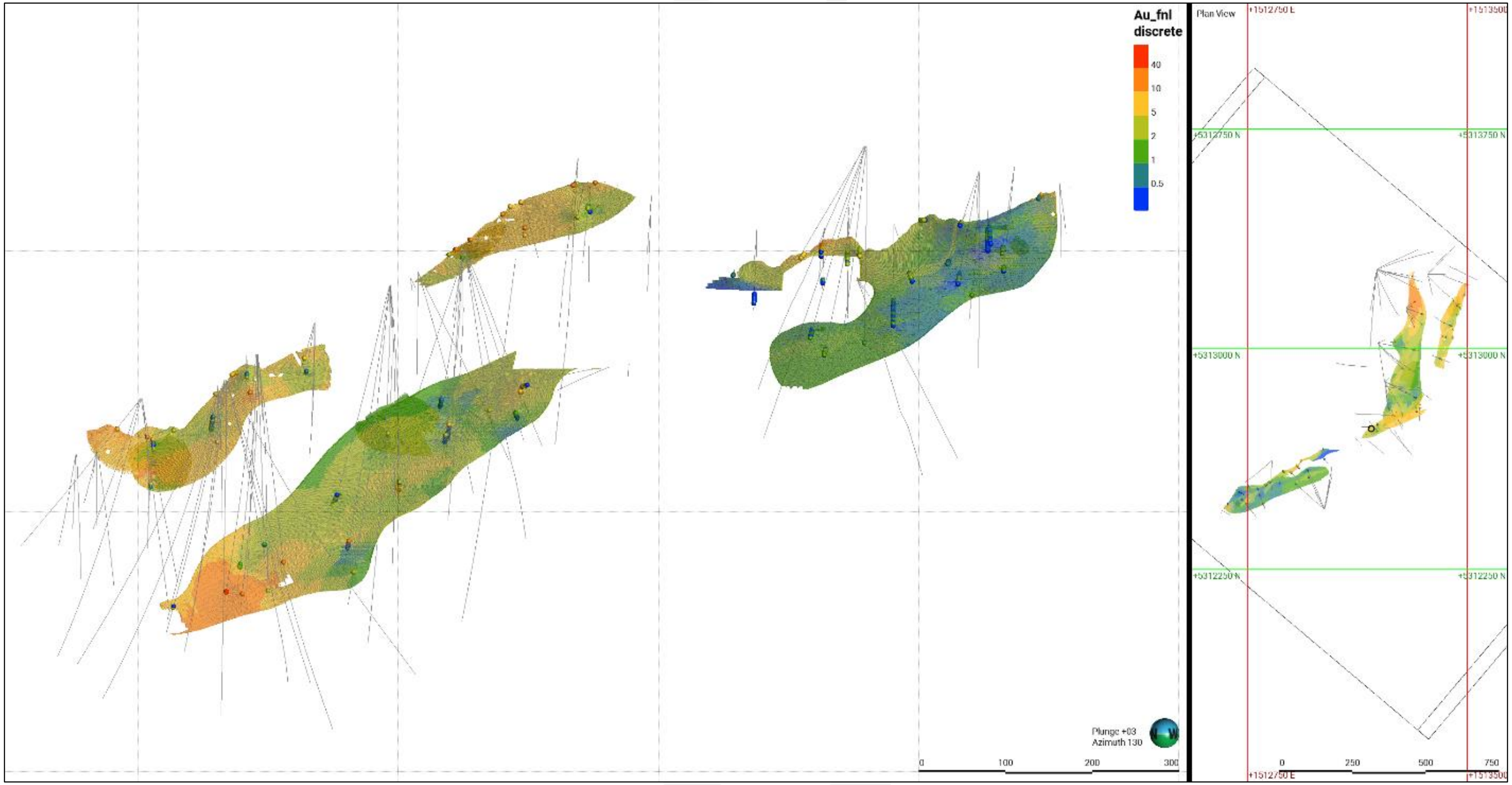


Figure 14-21: Alexander River long-section (left) and plan view (right) illustrating the estimated block-model Au and 2-m Au composites (looking southeast).

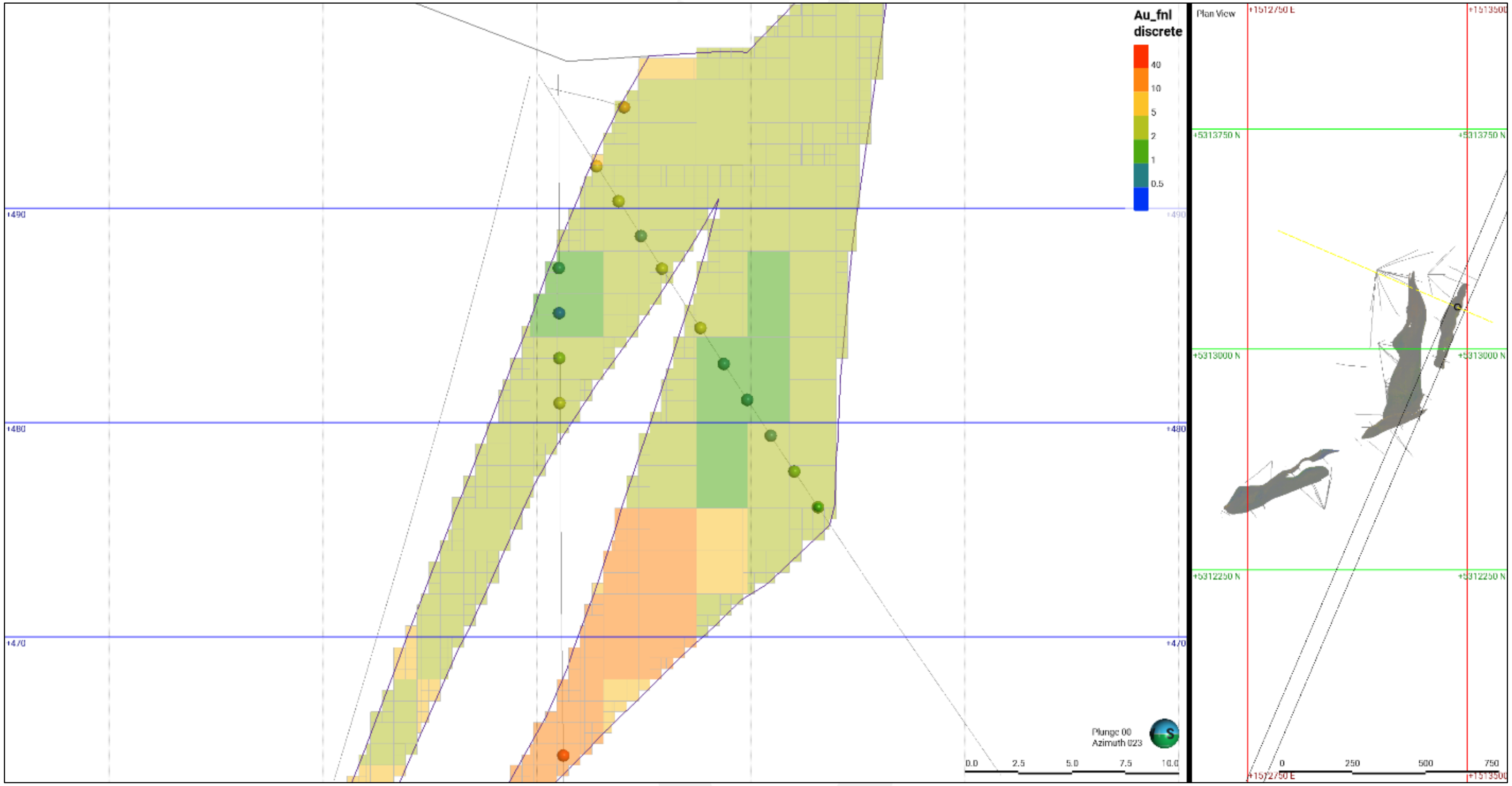


Figure 14-22: Loftus-McKay section and plan view illustrating the estimated block-model Au and 2-m Au composites (looking northeast).

14.1.8 Sensitivity Testing

The following four methods were used to assess the sensitivity of the OK estimate to the input parameters:

1. adjusting the maximum number of samples in the estimation parameters;
2. adjusting the search parameters to a percentage of the variogram range;
3. adjusting the maximum number of samples allowed per drillhole in the estimation parameters; and
4. estimating with 1-m composites using the same estimation parameters with updated variograms and top cuts.

14.1.8.1 Estimating with Different Numbers of Samples

Kriging neighbourhood analysis (KNA) was conducted to determine the maximum number of samples per estimate, maximising the slope of regression (SoR) and kriging efficiency (KE) while reducing the sum of negative weights (SumN) (Figure 14-23).

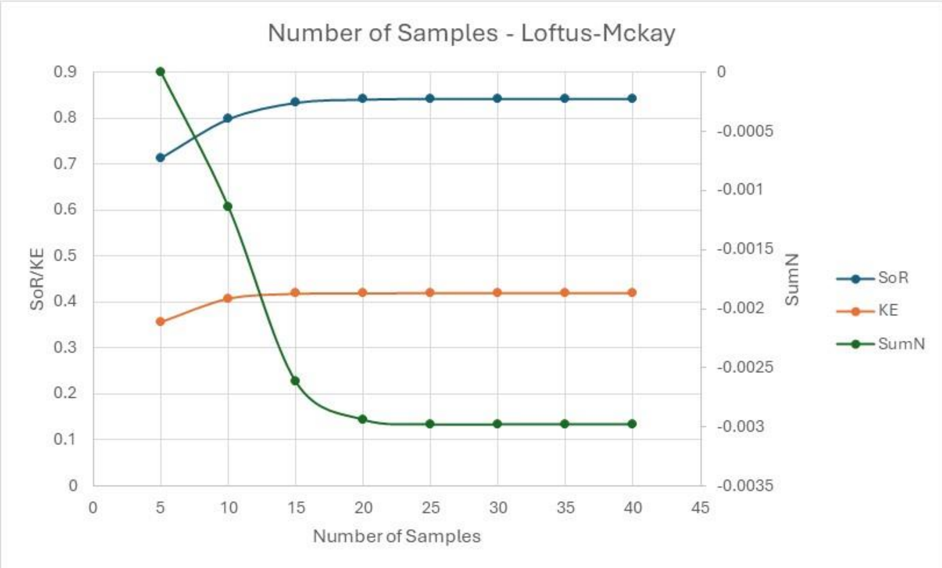


Figure 14-23: Loftus-McKay: maximum number of samples per estimate.

14.1.8.2 Estimating with Different Ellipsoid Search Ranges

KNA was conducted to help determine the optimum search range, maximising the SoR and KE while reducing the SumN (Loftus McKay, Table 14-12 and Figure 14-24; HG McVicar West, Table 14-13).

Table 14-12: Loftus-McKay search ranges.

Percentage	Major Search Range (m)	Semi-Major Search Range (m)
100	145	90
80	115	70
60	90	55
40	60	35

Table 14-13: HG McVicar West search ranges

Percentage	Major Search Range (m)	Semi-Major Search range (m)
100	110	60
80	85	50
60	65	40
40	45	25

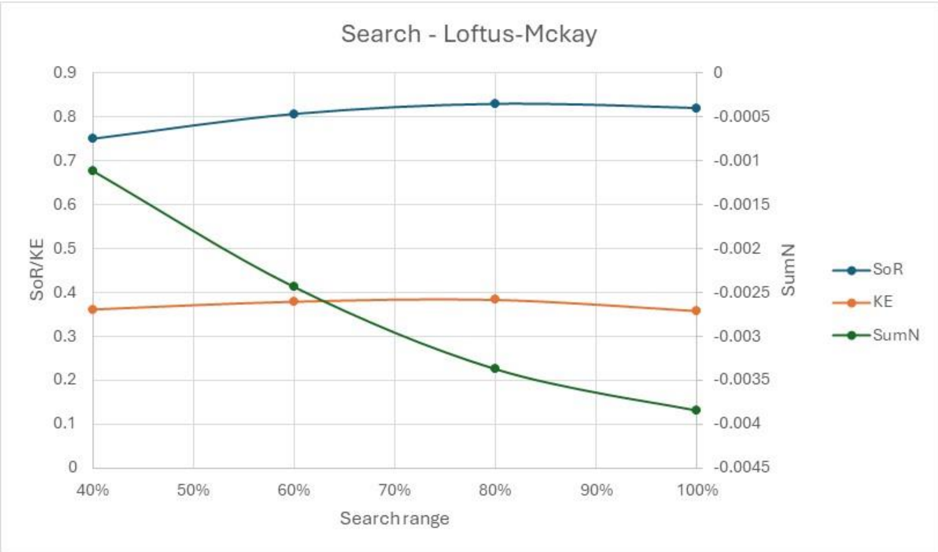


Figure 14-24: Loftus-McKay search ranges.

14.1.8.3 *Estimating with Different Maximum Numbers of Samples Allowed per Drillhole*

The OK estimation sensitivity was tested after first setting the search ranges and maximum number of samples per drillhole. A minimum number of samples of four and a maximum number of samples per drillhole of three required two drillholes per block estimate. Major domains that had un-estimated blocks required a second pass with no restriction on the maximum number of samples per drillhole and the minimum number of samples per block estimate reduced to two. Blocks estimated in pass two have been left as unclassified and excluded from the reported resource. Minor domains had a single pass with no restriction on the maximum of samples per drillhole and a minimum number of samples per drillhole of two or three. Any blocks left un-estimated were assigned an Au grade of 0 and have been left as unclassified and excluded from the reported resource.

14.1.8.4 *Estimating Different Composite Lengths*

The OK estimation of Au was tested using a 1-m sample compositing length, and the final grades were compared for all domains. The comparison resulted in minor changes to the mean grade in the selected estimation domains, demonstrating low sensitivity to compositing selection (Table 14-14).

Table 14-14: Alexander River sensitivity analysis comparing different compositing lengths.

Domain	1-m Composite Mean Declustered Grade (Au g/t)	2-m Composite Mean Declustered Grade (Au g/t)	Relative Difference (%)
HG Bull East	3.49	3.59	3
HG Mc Vicar West	12.83	12.97	1
Bruno 1	5.93	6.11	3
Bruno 2	6.99	6.23	-12
Bull Deep	1.42	1.44	1
Hanging wall reef	0.88	0.82	-7
LG Bull East	2.59	2.59	0
LG McVicar West	12.00	12.67	5
Loftus-Mckay	4.05	4.07	0
McVicar East	2.07	2.03	-2

14.1.9 Depletion

RRPL provided a depletion solid for the McVicar historical mine workings. The solid was digitised from the assumed position of the mine level plans (Figure 14-25). There is no survey control for the mine, which closed in 1943, or from the re-entry in 1992. The QP (Abraham Whaanga) reviewed the depletion solid and regards it fit for purpose for the MRE objectives.

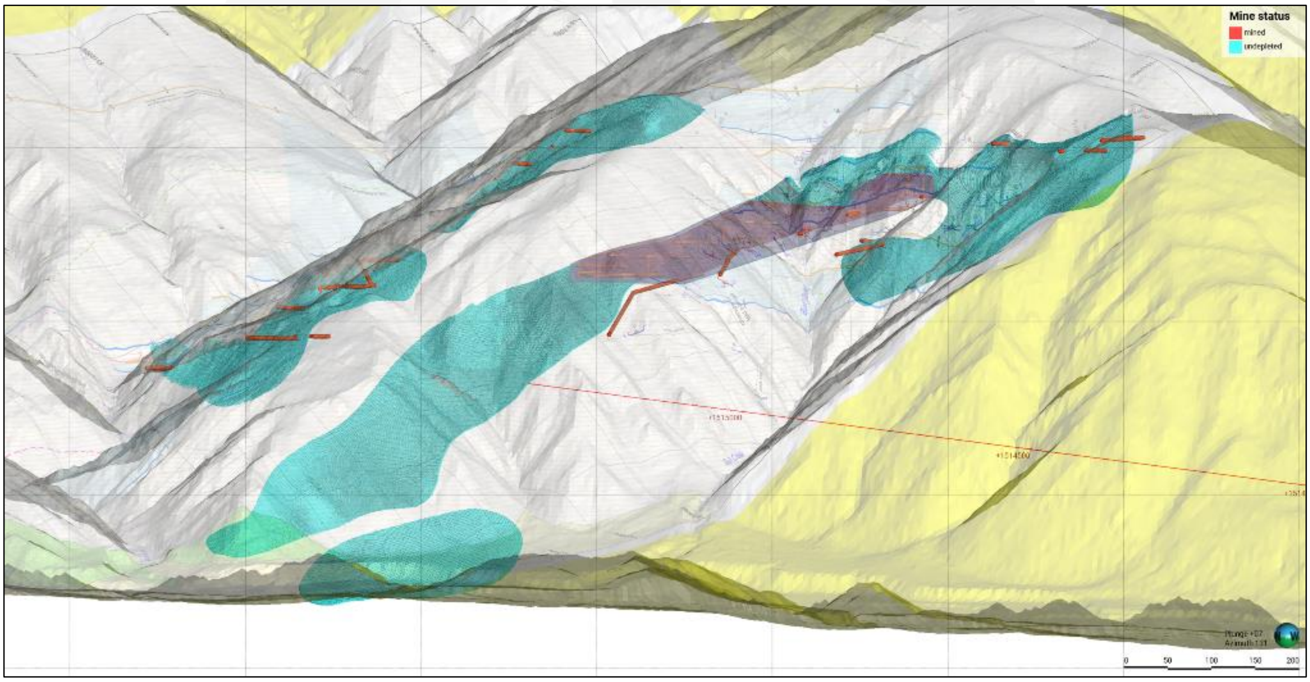


Figure 14-25: Alexander River block model with depletion applied. Mined is illustrated in red and unmined (un-depleted) in blue.

14.1.10 Classification

The QP (Abraham Whaanga) has classified the Mineral Resource in the Inferred Mineral Resource category in accordance with NI 43-101 and the CIM as the CIM Definition Standards on Mineral Resources and Mineral Reserves (May 2014) (Table 14-15 and Figure 14-26). For the Inferred MRE, geological evidence is sufficient to imply but not verify geological and grade continuity. The Mineral Resource is based on exploration, sampling, and assaying information gathered through appropriate techniques from trenches and drillholes.

It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. For the Inferred portion of the MRE, confidence in the estimate is not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning in pre-feasibility or feasibility studies. Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as a scoping study or preliminary economic assessment.

Future work should seek to decrease the drill spacing, improve sample and analytical quality control, and improve the resolution of the Au estimation domains.

Table 14-15: Classified MRE for the Alexander River deposit.

Domain	Classification	Tonnes (Mt)	Au (g/t)	Contained Au Ounces (koz)
LG McVicar West	Inferred	0.4	3.7	47
HG McVicar West	Inferred	0.2	4.3	25
LG Bull East	Inferred	0.1	1.7	5
HG Bull East	Inferred	0.1	3.8	7
Bruno 1	Inferred	0.1	5.6	8
Loftus-Mckay	Inferred	0.2	5.6	33
McVicar East	Inferred	0.1	3.9	7
Total	Inferred	1.0	4.1	130

Notes:

1. *The definitions for Mineral Resources of the Canadian Institute of Mining were followed.*
2. *The Mineral Resource is reported at a cut-off of 2.2 g/t Au.*
3. *The Mineral Resource was assessed for reasonable prospects of eventual economic extraction by re-blocking to a regular 2 mW × 4 mH × 4 mL minimum block dimension, converting to wireframe solids and generating minimum mining units, commensurate with the anticipated smallest mining-unit dimensions for a long-hole stoping operation.*
4. *Totals may vary due to rounding.*

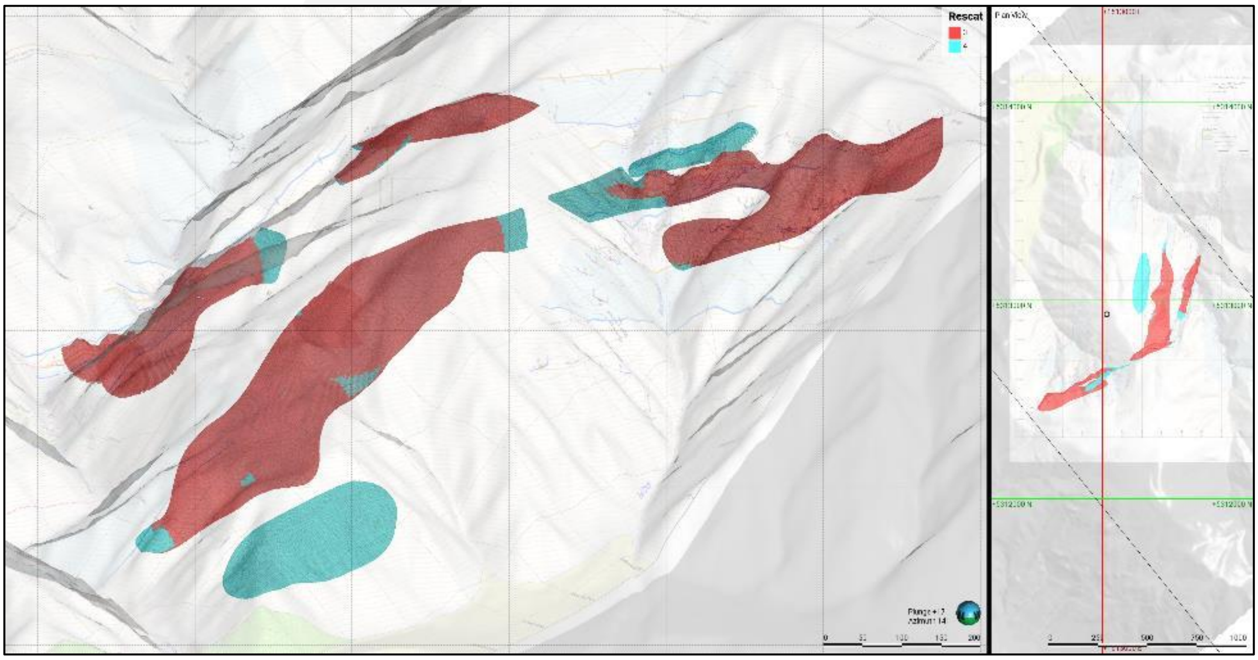


Figure 14-26: Classification of the Alexander River Mineral Resource. Inferred in red (3) and Unclassified in blue (4).

14.1.10.1 Cut-Off Grade

A cut-off grade of 2.2 g/t Au was selected for the reporting of the Mineral Resource based on a high-level initial assessment of potential modifying factors (Table 14-16). The QP (Abraham Whaanga) completed a high-level initial assessment of various factors solely for the purpose of reasonably assessing the potential for economic extraction of the Mineral Resource. These parameters should not be regarded as assumptions that are at the confidence level required for studies (scoping, pre-feasibility, or feasibility). Accordingly, and for the sole purpose of this early-stage assessment, this work assumed:

- Au price of USD 2,025 per ounce, based on prices during the previous 24 months;
- Au payable of 95% in the concentrate;
- Au recovery of 93% based on metallurgical test work;
- royalty of 2% for Au;
- similar processing costs to Snowy River 2022 (USD 29/t) and Waihi (USD 30/t);
- similar general and administrative costs to Snowy River 2022 (USD 16/t) and Waihi 2021 (USD 18/t); and
- similar stope and ore-drive costs to 2020 Macraes Golden Point UG (USD 43/t), 2022 Snowy River (USD 110/t @ 1,000 tpd), and Waihi (USD 60/t @ 1,500–2,000 tpd).

The cut-off grade USD value was determined using mining and development costs and modifying factors for an anticipated sub-level, long-hole, open-stoping mining method. The QP (Abraham Whaanga) notes that the assumed costs are reasonable and should be considered accurate enough to support an Inferred MRE.

A conceptual mining scenario indicates the Alexander River MRE could be exploited via a ~1-km access drive from the Snowy River Road. This would also allow efficient bottom-up mining. The valley area could also host offices, workshops, water return, and processing plants (similar to the nearby Snowy River Project). The ore also could also be trucked easily to a central processing site near Reefton.

Table 14-16: Conceptual UG mining costs and assumptions to determine the cut-off grade for Alexander River.

Assumptions	Unit	Value
Au Price	USD/oz	2,025
Au Payable in Concentrate	%	95
Royalty Au	%	2
Met rec Au	%	93
Mine Gate Revenue	USD per g/t	62.63
Processing, Grind, and Flotation	USD/t	30
Site G&A	USD/t	20
Stope & Ore Drive	USD/t	75
Total Costs	USD/t	125
Estimated Au g/t COG		2.2

Metallurgical recoveries are based on six metallurgical samples collected from Alexander River by RRPL (Siren Gold Limited, 2023b). The samples indicated good recovery from gravity test work, with ~40% of the Au being free. RRPL noted that the preliminary results indicated total recoveries of ~93% if processed using POX. Based on the results from these samples and others from Big River, GRES reviewed the process design criteria and proposed the following conceptual processing plant:

- a nominal processing capacity of 1.25 million tonnes per annum, using a design head grade of up to 10 g/t Au to cater for surges of high-grade ore;
- three-stage crushing, with fine ore-bin storage and emergency reclaim;

- a single-stage ball mill, with a flash-flotation cell treating cyclone underflow;
- separate gravity concentrators to treat ball-mill discharge and flash-flotation concentrate to produce Doré output of up to 80% of the Au in the feed, again to handle grade surges;
- gravity plus flotation of ~93%, with an overall recovery estimated at ~90% with POX;
- concentrate dewatering using a thickener and a filter to produce a transportable concentrate;
- appropriate tailings-handling facilities depending on plant location and underground paste fill requirements; and
- STEINERT Ore Sorters to reduce waste from the mining cycle and increase the mill-feed head grade.

14.1.10.2 RPEEE

In assessing the reasonable prospects for eventual economic extraction (RPEEE), the QP (Abraham Whaanga) evaluated preliminary mining, metallurgical, and ESG parameters (Section 4.7). The Mineral Resource reported at a cut-off grade of 2.2 g/t Au is a realistic inventory of mineralisation which, under assumed and justifiable technical, economic, and developmental conditions, might, in whole or in part, become economically extractable.

The initial assessment of mining and engineering factors was carried out using a re-blocking approach. RPEEE categories were assigned after re-blocking the model to a regular 2 mW × 4 mH × 4 mL block size and converting the block centroid extents to wireframe solids, thereby generating minimum mining units (MMUs or 'stopes'). Due to the fixed strike direction and vertical orientation in the block model, in combination with the narrow nature of the ore zones, the MMUs are regarded as being analogous to inclined and variable-strike sub-level open-stope wireframes. The re-blocking width is thus equivalent to a minimum mining width of 2 m.

MMUs reporting above a 2.2 g/t Au threshold were flagged as meeting RPEEE (Figure 14-27). RPEEE categories were further assigned to the MMU wireframes by manually identifying areas and regions where the MMUs consistently meet this RPEEE threshold. This resulted in the exclusion of isolated high-grade blocks and zones considered too deep or too far from other zones of mineralisation to be reasonably expected to be economically extractable.

MMUs located inside or close to modelled historical workings were also excluded, while some with grades between 1.5 and 2.2 g/t Au and located between wide zones of higher grade were included.

The QP (Abraham Whaanga) notes there are no known factors related to environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other issues that could materially affect the mineral resource estimates.

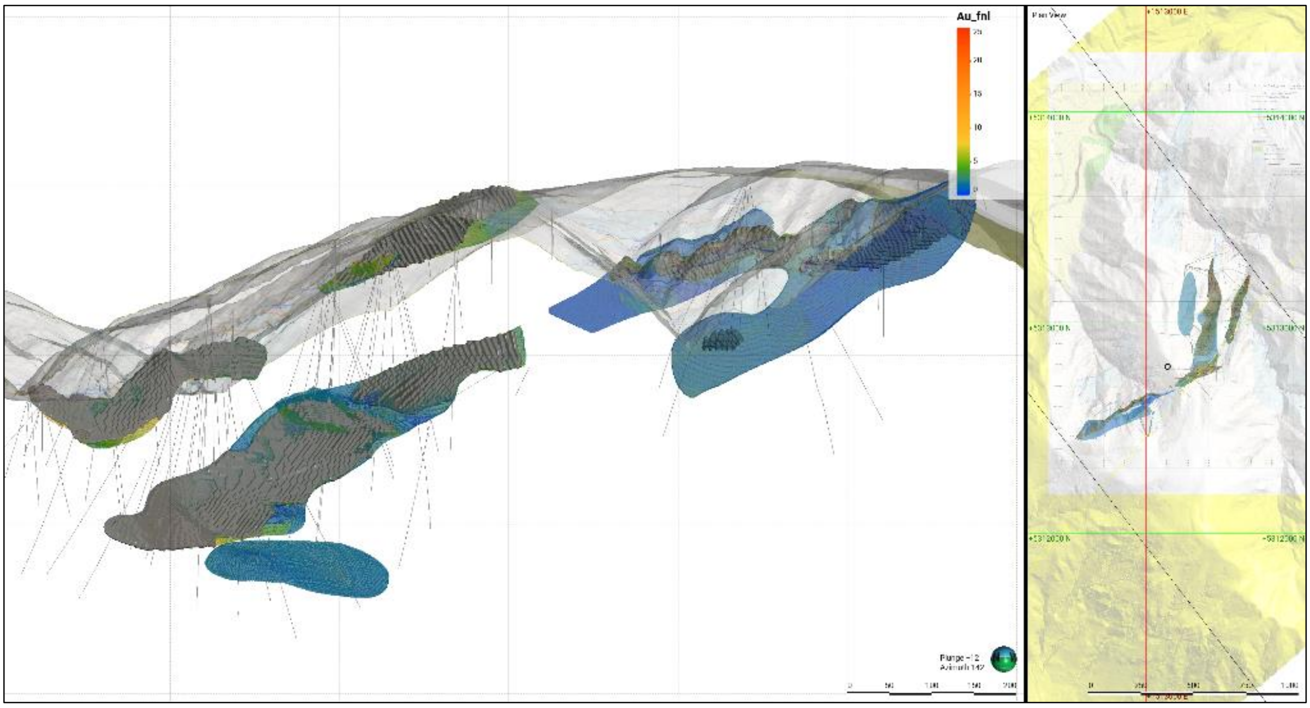


Figure 14-27: Alexander River, with the 2.2-g/t reported volume illustrated in grey.

14.1.10.3 Comparison With Historical Estimate

The current MRE for Alexander River is 6% lower on mass, 17% lower on grade, and 22% lower on ounces compared with the Alexander River historical estimate disclosed in Section 6.4 of this Report (Grove and Binks, 2023).

The likely reasons for the differences are:

- the use of a 2.2 g/t cut-off and reporting RPEEE within a re-blocked minable shape;
- the creation of a wider low-grade disseminated halo and a sub-domained high-grade core; and
- less extrapolation when classifying inferred blocks.

14.2 Auld Creek

14.2.1 Informing Data

The data were provided by RRPL in the form of Excel workbooks containing drillhole data (Table 14-17). The drillhole database *August 2024 Auld Creek DDH Database* contains collar, geology, recovery, survey, and assay information. Assay method information was compiled and provided for each element, and an Au_Best_ppm field was created by RRPL using a priority system, with the highest priority taking precedent. Density information was provided in a separate *RRL_Density_Master* Excel spreadsheet containing raw density data. The spreadsheet included a calculation for bulk density and was sorted by mineralised domain. The trench database *August 2024 Auld Creek Trench Database* contained collar, survey, lithology, and assay information. Trench z values were adjusted by RRPL by draping them onto the LiDAR surface due to difficulties in obtaining accurate surveyed GPS z values for trenches. Both z-values (original and draped to the LiDAR surface) were stored in the Leapfrog trench database.

Table 14-17: Data used for the Auld Creek MRE.

Type	Holes	Metres
DD	26	3,170
Trench	12	103.2

14.2.2 Interpretation & Model Definition

14.2.2.1 Geological Domains

The interpretation of geological domains is crucial for providing a first-order constraint on grade populations and ensuring the geological controls on mineralisation guide the modelling of estimation domains.

Gold mineralisation is hosted in quartz reefs within tightly folded sandstone and siltstone units of the Greenland Group. Disseminated mineralisation comprises silicified acicular arsenopyrite within adjacent siltstone and sandstone and forms halos surrounding mineralised quartz reefs. Full descriptions of the Project geology and controls on mineralisation can be found in Section 0.

Geological modelling was conducted by the QP (Abraham Whaanga) in Leapfrog Geo, utilising interval selection and the vein system tools to create a geological model. An oxide model compiled by the QP (Abraham Whaanga) was based on interval selection of weathering (Figure 14-28). The weathering profile was taken as an offset surface from the topography, as drillhole coverage is not sufficient to create a surface on its own. Two categories were created: oxidised, including the weathering selections slightly weathered (sw), moderately weathered (md), and extremely weathered (ew); and fresh, i.e. unweathered (uw). Selections for individual drillholes were adjusted to fit the surrounding data.

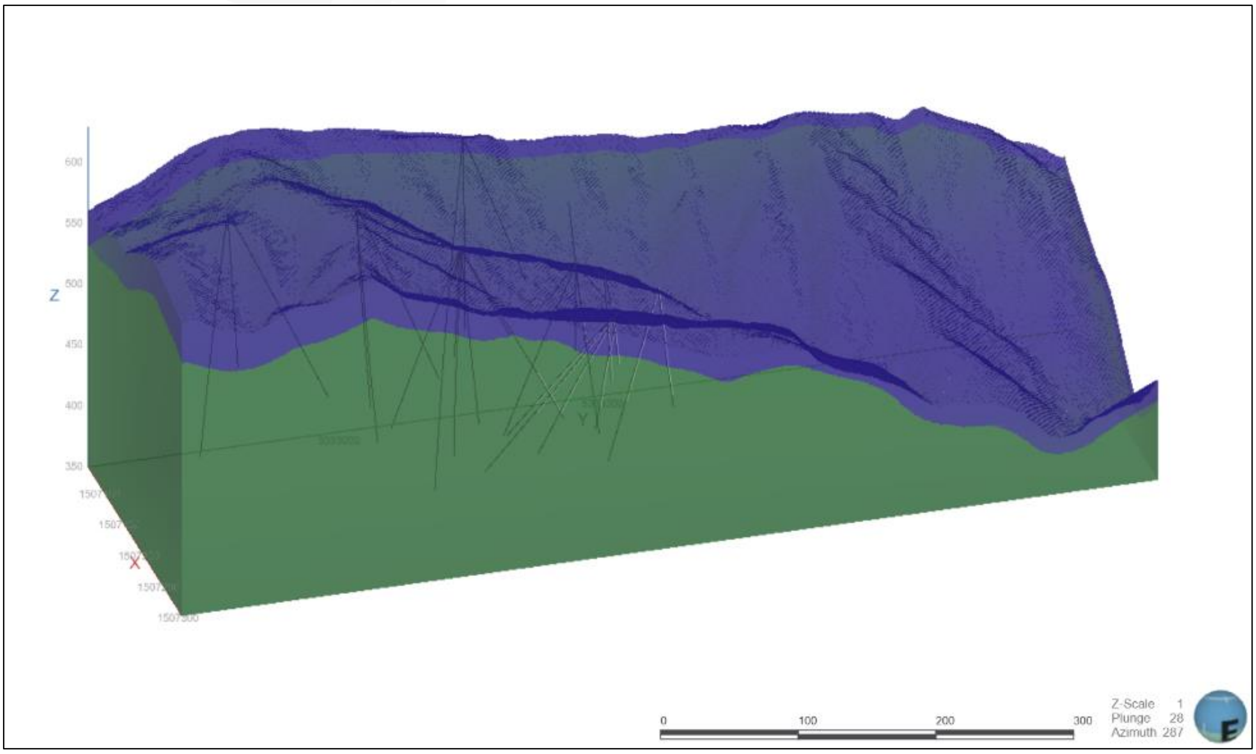


Figure 14-28: Auld Creek oxide model. Blue = oxidised; green = fresh.

The geological model was largely based on the 2024 RRPL geological model interpretation. The geological model interpretation was validated by the QP (Abraham Whaanga) using surface trench data and is considered a reasonable interpretation of the reef trends and orientation present at Alexander River. The QP (Abraham Whaanga) notes that RRPL used a nominal 0.5 g/t Au cut-off for top and bottom intercepts. In the geological model created by the QP (Abraham Whaanga), the reef surfaces were guided by lithological codes. The QP (Abraham Whaanga) created a merged drillhole and trench table with full lithology and assay information, with summary statistics reviewed, grouping lithology (Sum Log) and assay data. The logged lithologies with the highest Au grades, ranging from a mean of 9 g/t to 1.8 g/t, were used in a filter with mean Au grades of >0.5 g/t. Intervals matching these criteria were selected in combination with the drilling cross-sections, indicating the presence of quartz reef or high-grade vein (Table 14-18). Modelled geological domains for Auld Creek are based on cross-sections supplied by RRPL (Figure 14-29 and Figure 14-30).

Table 14-18: Auld Creek summary statistics sorted by highest mean Au grade.

Lith code	Length (m)	Mean Au (g/t)	Mean Sb (%)	Description
SBX	10.0	9.42	17.74	Sb breccia
QBX	8.6	7.82	4.14	Quartz breccia
MS	0.8	6.04	34.74	Massive sulphide
QTZ	4.7	3.77	0.03	Quartz vein
FLT	59.2	3.33	0.36	Fault
MGK	181.0	2.78	0.62	Mineralised greywacke
MAR	17.4	2.52	0.10	Mineralised argillite
HBX	163.2	1.97	0.87	Host breccia
PBX	25.3	1.78	1.29	Pug breccia (>5% sulphide)

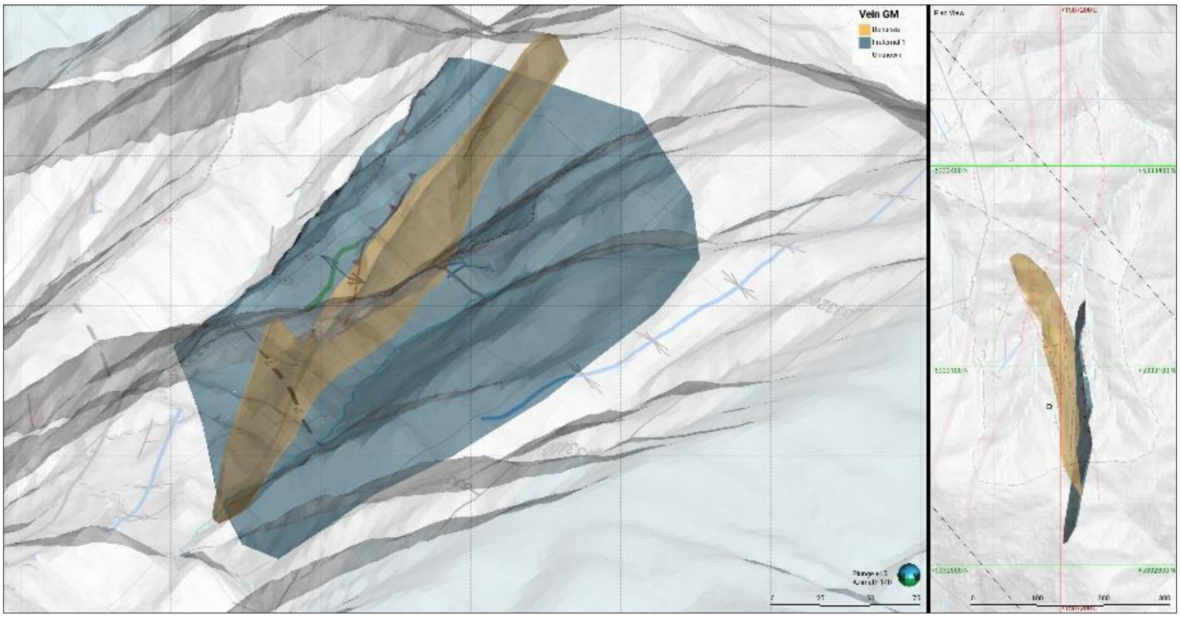


Figure 14-29: Modelled geological domains for Fraternal and Bonanza.

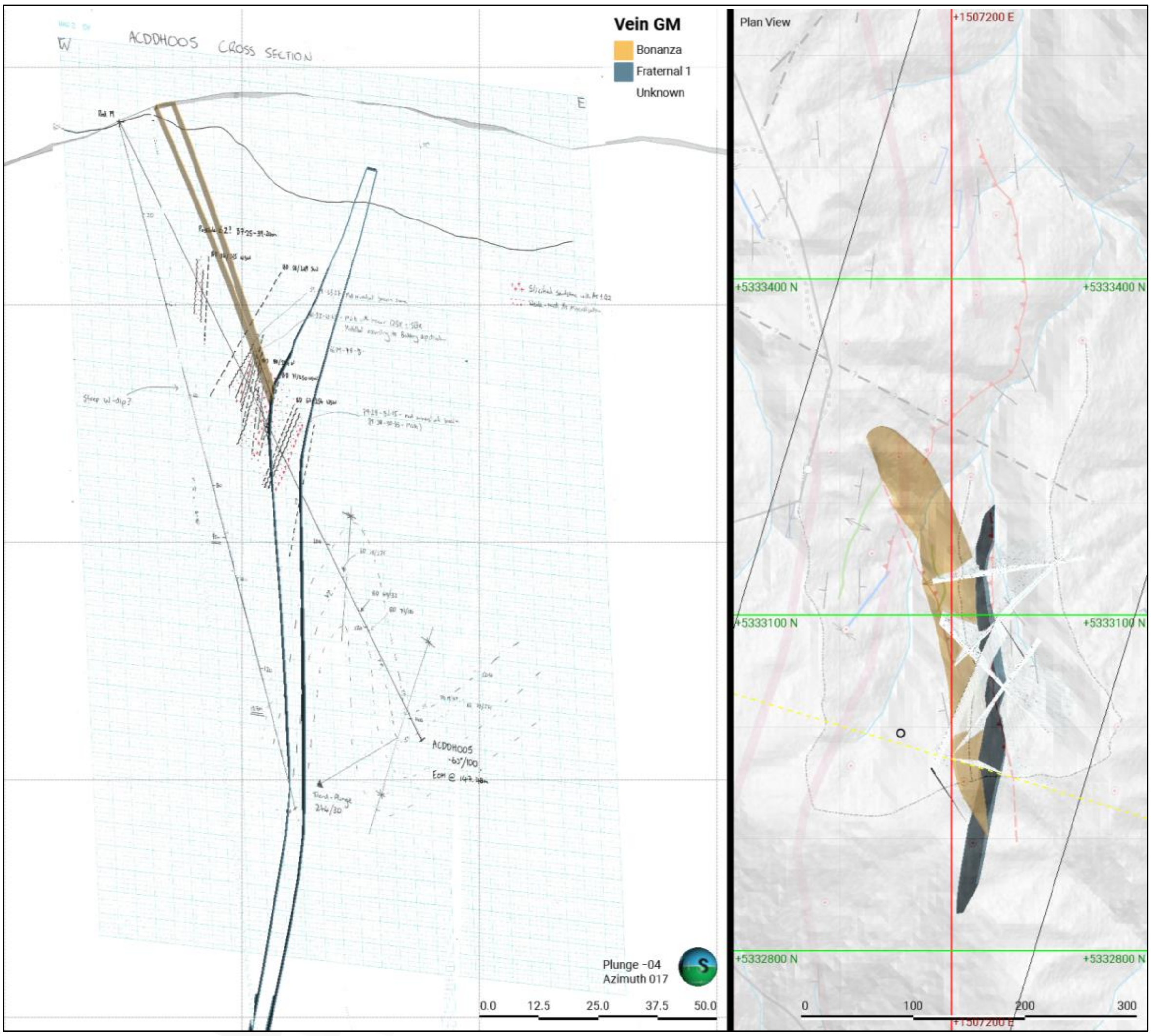


Figure 14-30: Paper cross-sections with geological interpretations for Fraternal and Bonanza.

14.2.2.2 Estimation Domains

The estimation domains were derived from geological and weathering models. The two Au estimation domains displayed monomodal distributions with low CVs, expected grade contact behaviour, and reasonable adherence to intrinsic stationarity assumptions.

The QP (Abraham Whaanga) completed contact analysis to investigate the boundary conditions of each domain (Figure 14-31 to Figure 14-34). The mean grade was reviewed inside the domains, around the boundaries, and outside the domains. There are clear transitions between the mineralisation hosted in quartz reefs and disseminated mineralisation occurring in halos surrounding the quartz reefs. This is consistent with the geological interpretation and logging of mineralisation from drill core. Hard boundaries were used for both domains during estimation to protect the distinct boundaries between estimation domains.

Analysis of Sb mineralisation indicated a clear bi-model population that was not related to the individual geological domains of Fraternal and Bonanza (Figure 14-35) with a CV of 3.1. Two Sb estimation domains were derived from the data by defining an indicator at a top-cut level of 0.1% and estimating the proportions of mineralisation above and below the top cut separately, then combining to obtain the final Sb values.

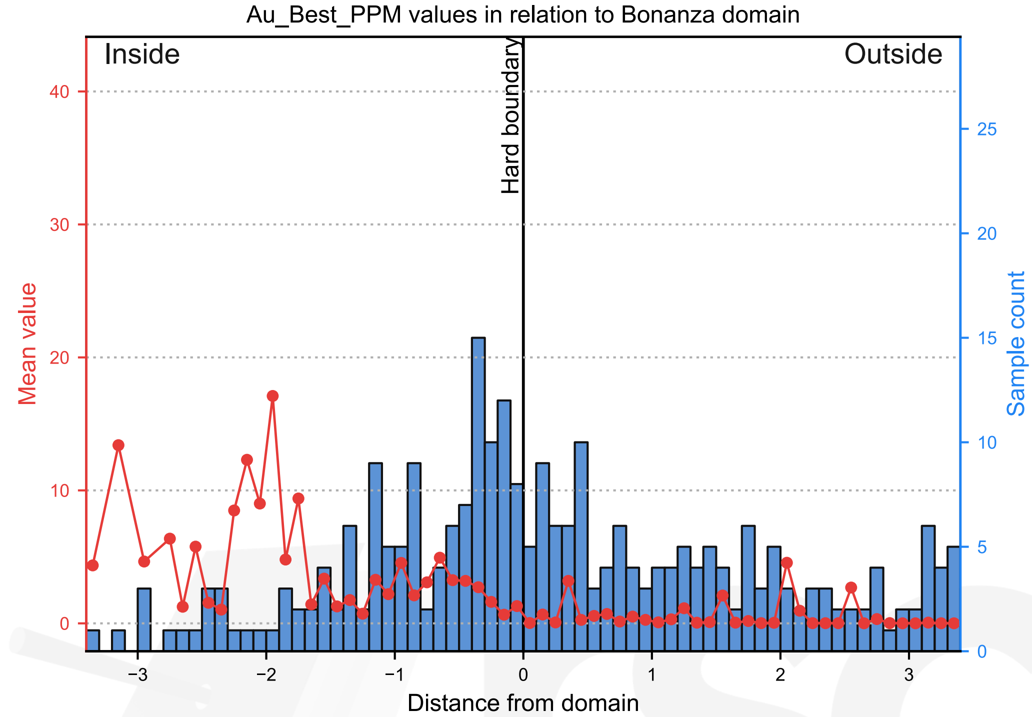


Figure 14-31: Contact analysis plot for the Bonanza Au domain.

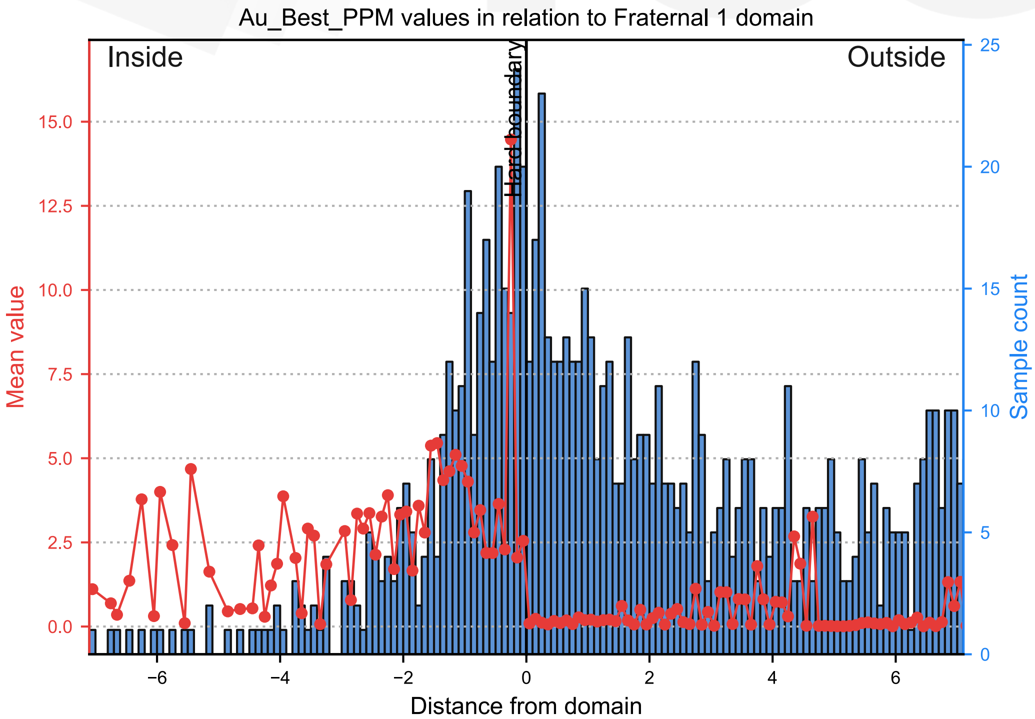


Figure 14-32: Contact analysis plot for the Fraternal Au domain.

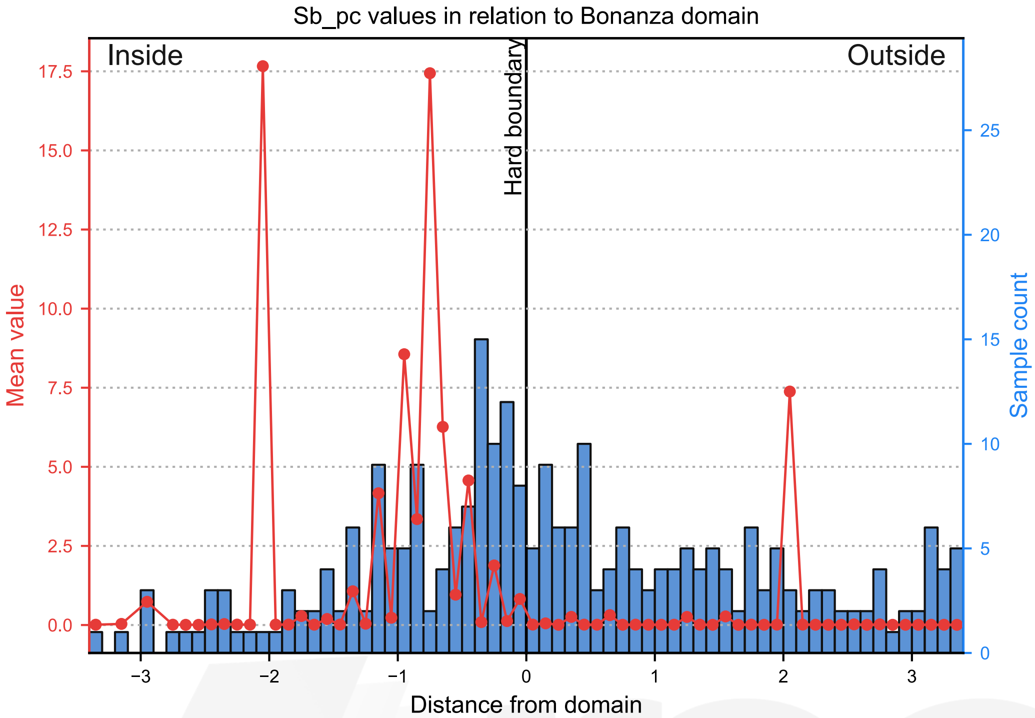


Figure 14-33: Contact analysis plot for the Bonanza Sb domain.

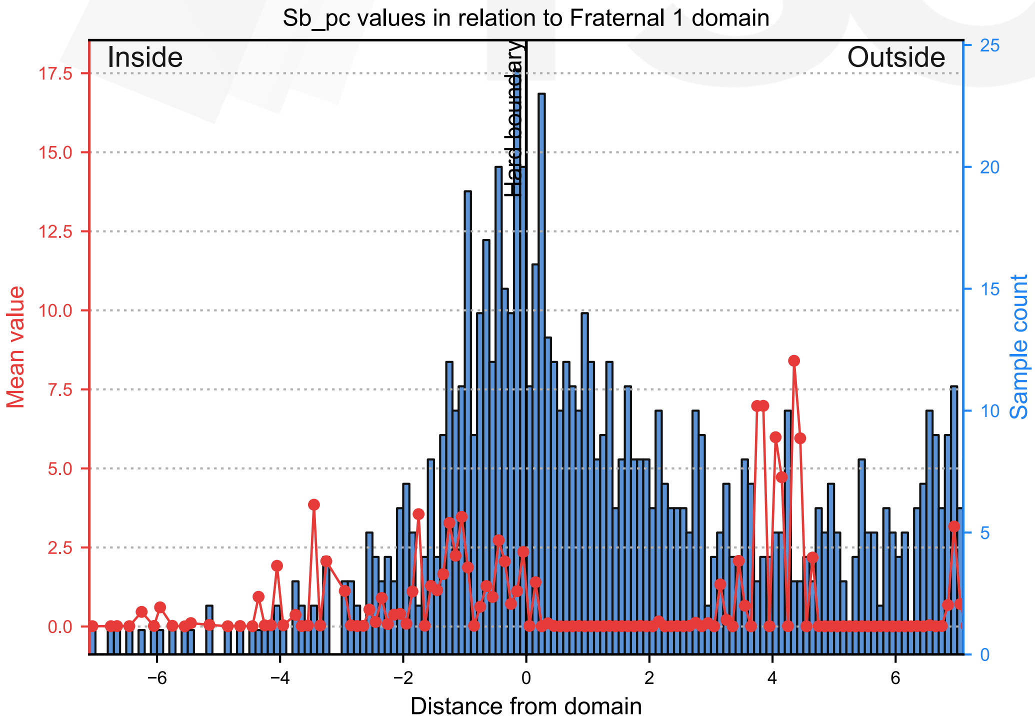


Figure 14-34: Contact analysis plot for the Fraternal Sb domain.

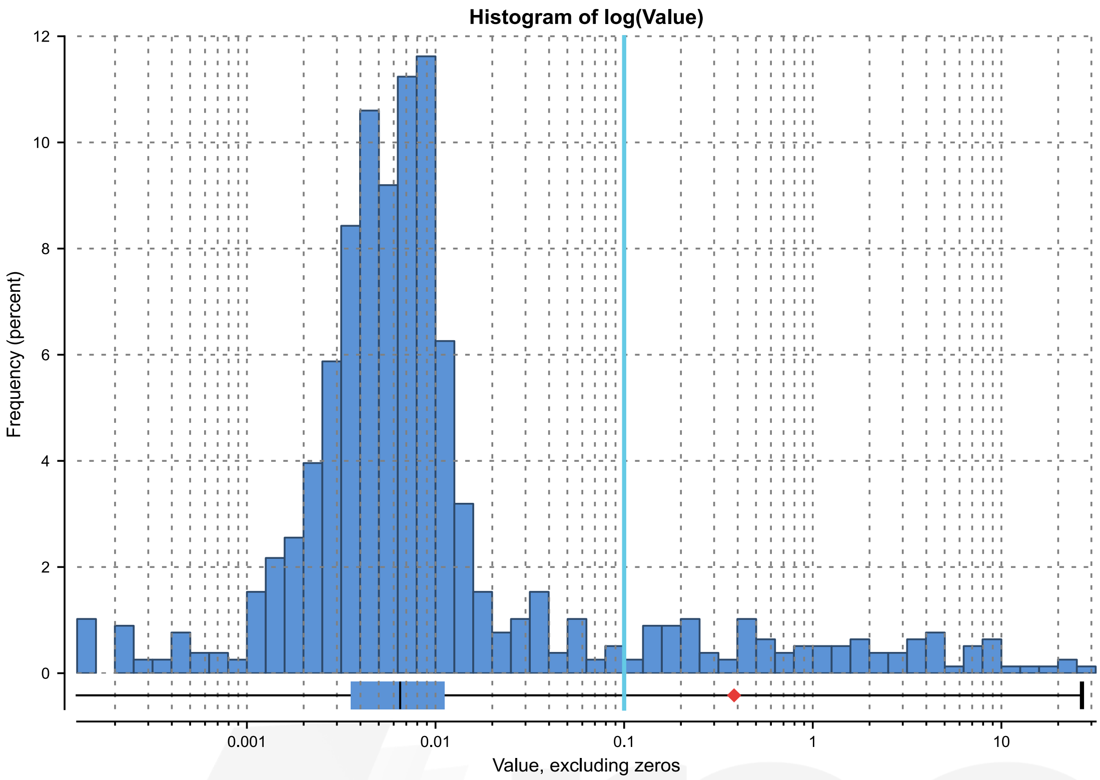


Figure 14-35: Histogram Sb sample distribution illustrating a bimodal population and 0.1% cut-off.

14.2.2.3 <u>Extrapolation</u>

Extrapolation of the mineralised intersections varies from ~10 to ~70 m; the extrapolation distances typically relate to the local drillhole spacing. The most extreme distances occur at the north end of the Bonanza reef, where a small number of widely spaced drillholes define a ~70 m reef. The QP (Abraham Whaanga) considers this to be a reasonable interpretation based on the available drilling data and surface trench data.

14.2.2.4 <u>Alternative Interpretations</u>

At a large scale, the controls on mineralisation are typically well understood and supported by the data, geology, and historical mine workings. However, the geological domains may vary considerably between known locations, and additional sampling may provide locally alternative interpretations.

The QP (Abraham Whaanga) considers that, at this stage in the Project and at this level of data resolution, alternative interpretations of the geology and mineralisation are possible; however, they are not likely to generate models or estimates that are significantly different.

14.2.3 <u>Summary Statistics & Data Preparation</u>

Assay data were composited to 2-m intervals due to the low drill intersection angles (Figure 14-36 and Figure 14-37). The mean interval length was 1.1 m, with 71% of the intervals sampled at a length of 1 m. Intervals and sensitivity to the compositing scheme were tested as part of the sensitivity analysis.

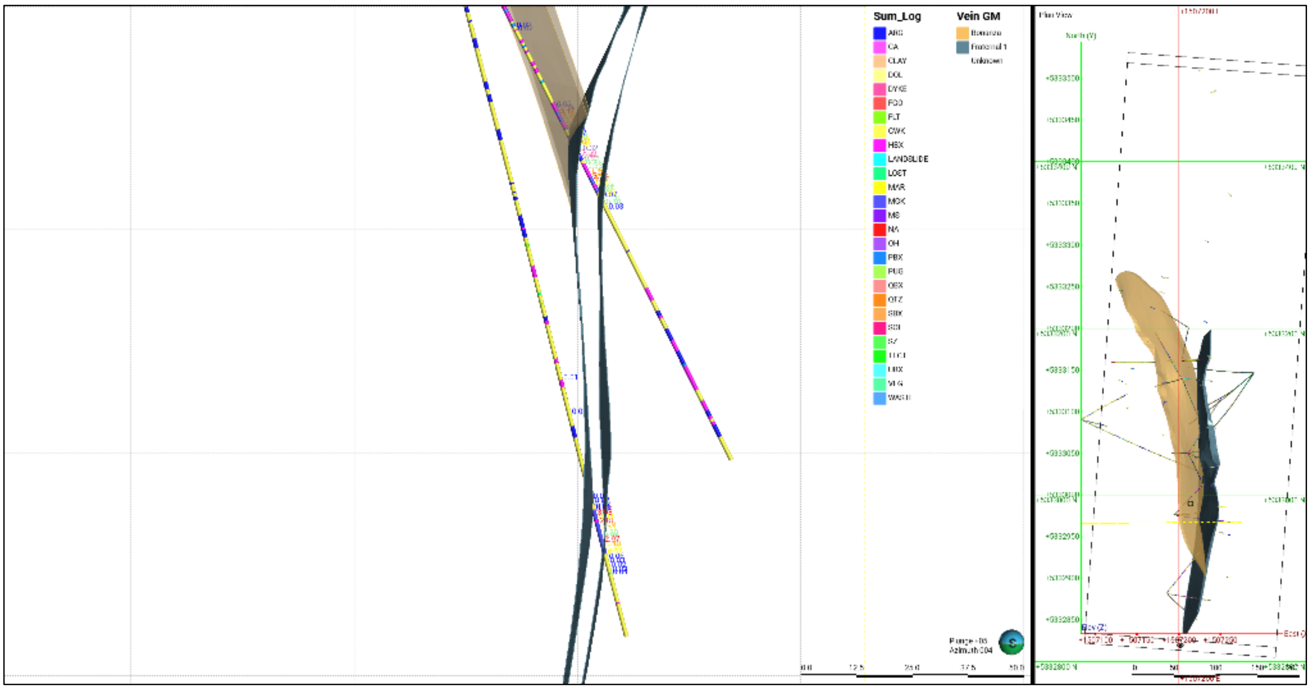


Figure 14-36 Section view illustrating low drillhole intersection angles in the Fraternal domain.

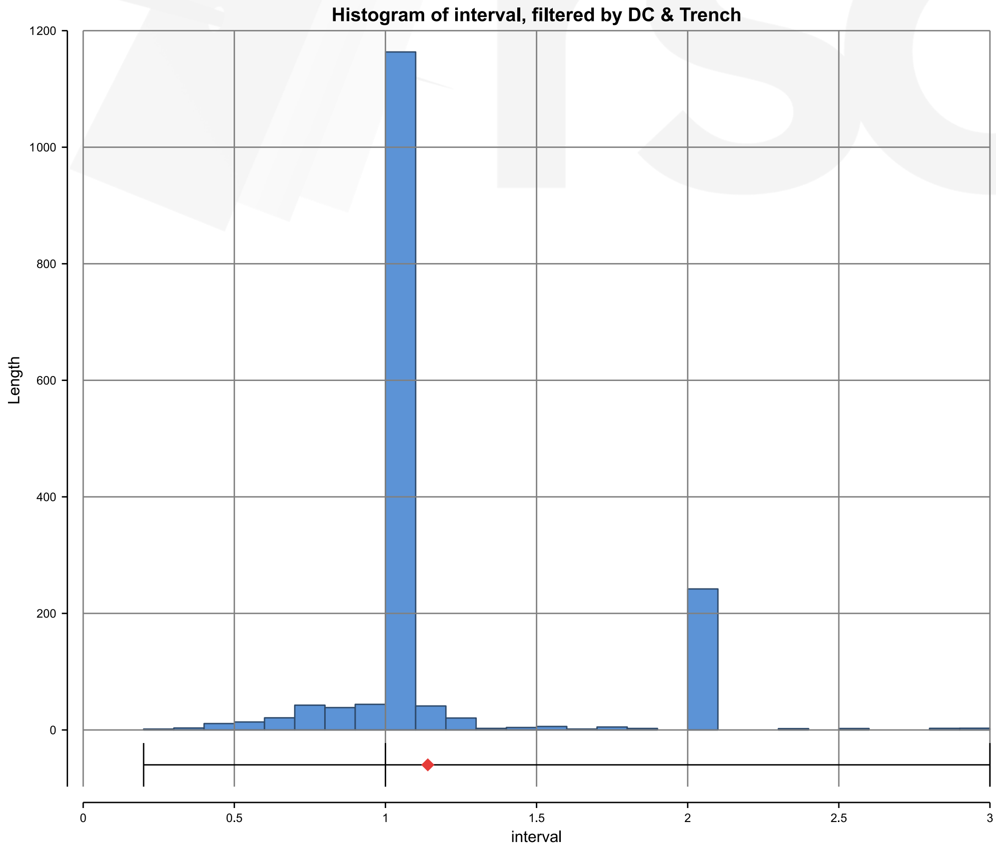


Figure 14-37: Histogram of interval lengths for the Auld Creek deposit.

All grade variables are characterised by skewed distributions and moderately high CVs. The CVs range from 1.0–3.0 before top-cutting. (Table 14-19 and Table 14-20). Example log histograms are presented in Figure 14-38 to Figure 14-41.

Table 14-19: Auld Creek domain statistics (2-m composites, declustered).

Assay	Domain	Count	Length	Mean	SD	CV	Variance	Min	Q1	Q2	Q3	Max
Au (g/t)	Bonanza	63	117.5	2.0	2.1	1.0	4.5	0.0	0.5	1.2	2.7	9.4
	Fraternal	138	265.0	3.2	9.9	3.0	97.6	0.0	0.6	1.2	2.5	104.9

Table 14-20: Auld Creek domain statistics (2-m composites).

Assay	Domain	Count	Length	Mean	SD	CV	Variance	Min	Q1	Q2	Q3	Max
SB (%)	>0.1%	82	160.1	3.5	5.6	1.6	31.4	0.1	0.3	1.1	3.9	28.1
	<0.1%	122	222.3	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.1

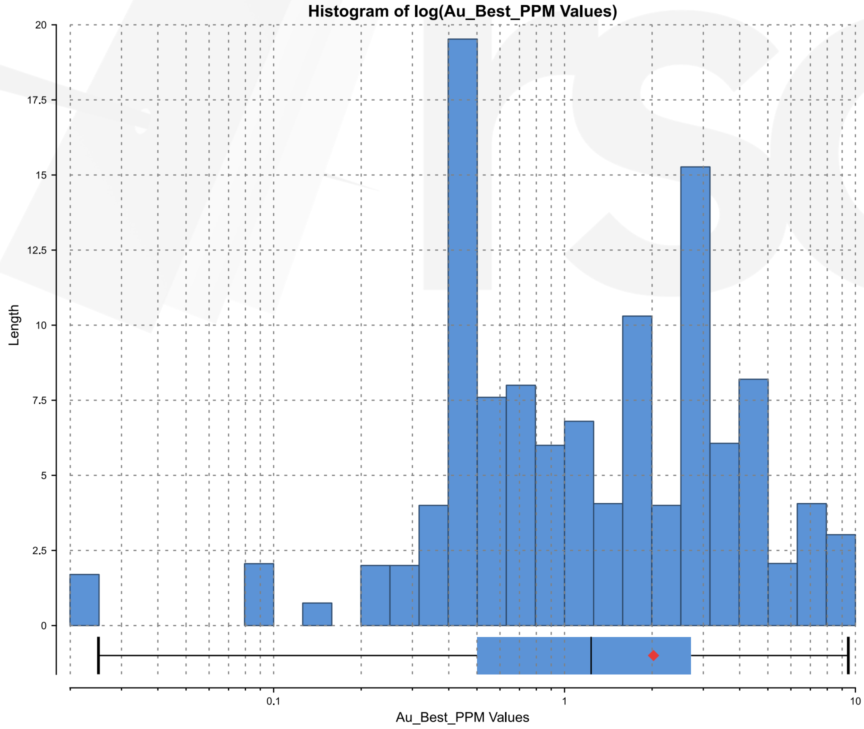


Figure 14-38: Bonanza log histogram of the Au grade variable (declustered 2-m composites).

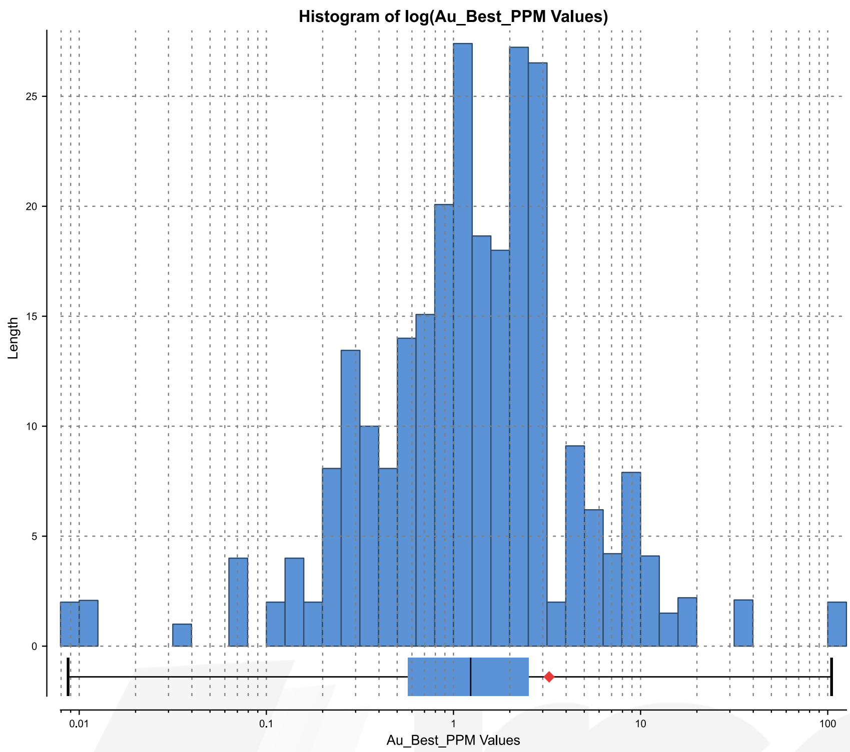


Figure 14-39: Fraternal log histogram of the Au grade variable (declustered 2-m composites).

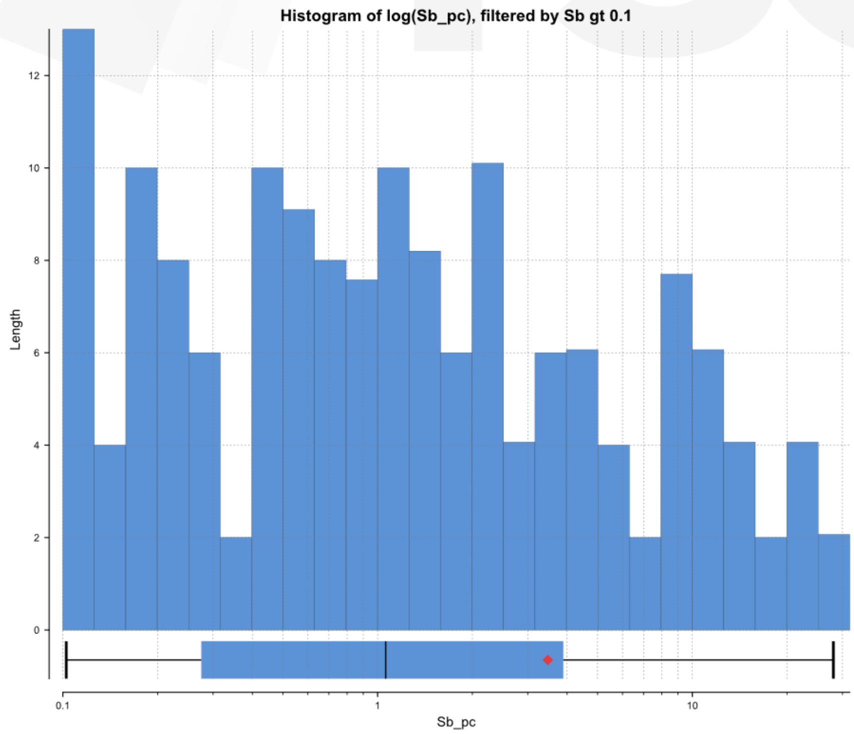


Figure 14-40: Log histogram (>0.1%) of the Sb grade variable (2-m composites).

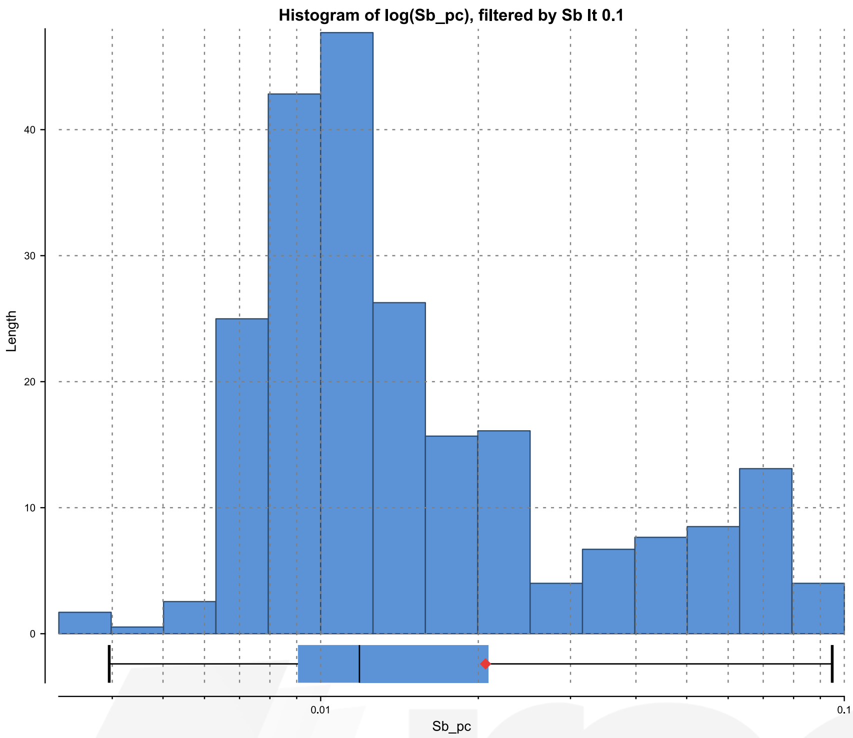


Figure 14-41: Log histogram (<0.1%) of the Sb grade variable (2-m composites).

14.2.4 Spatial Analysis & Variography

14.2.4.1 Gold

Experimental variography was completed on the normal-scores transform of the composited Au grades within each estimation domain. Variogram models were fitted using two spherical structures. Variogram models were fitted with a relatively low γ_0 ratio, with practical ranges (at which 90% of the variance is reached) of 75–100 m in the major direction and 40–50 m in the semi-major direction. Variogram model parameters are presented in Table 14-21. An example semi-variogram and associated model is presented in Figure 14-42. The back-transformed continuity models were then used to assign weights in the estimation. The variogram model fits the experimental data well and supports the level of confidence required for the estimation.

Table 14-21: Auld Creek modelled variogram parameters for Au estimation domains.

Variogram parameters		Domain	
		Bonanza	Fraternal
Normalised Nugget		0.32	0.32
S1	Normalised Sill	0.30	0.24
	Major	45	60
	Semi-Major	22	42
	Minor	5	5
	Dip	76.7	86.3
	Dip Azi	71.8	273.4
	Pitch	27.0	157.4
S2	Normalised Sill	0.37	0.44
	Major	140	113
	Semi-Major	70	82
	Minor	11	11
	Dip	76.7	86.3
	Dip Azi	71.8	273.4
	Pitch	27.0	157.4

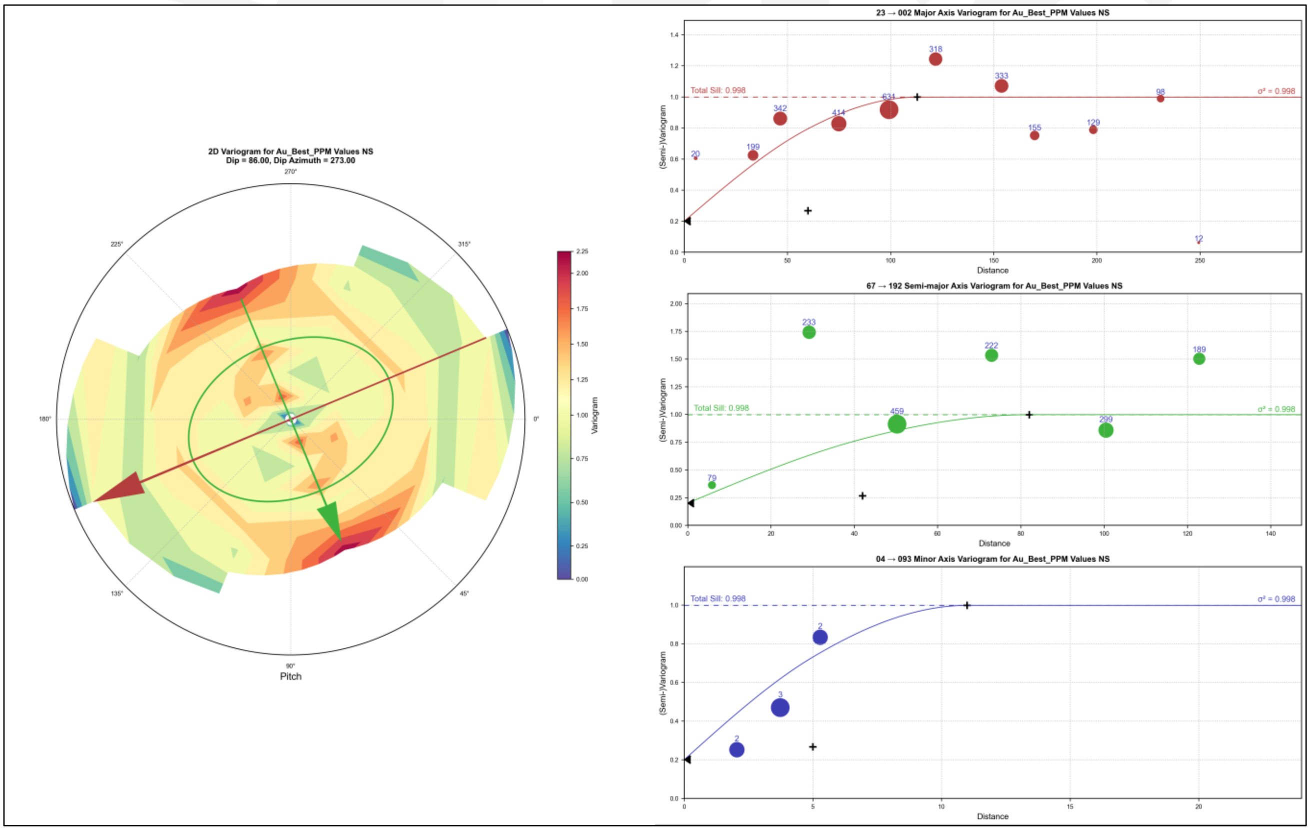


Figure 14-42: Fraternal Au semi-variogram.

14.2.4.2 Antimony

Experimental variography was completed on the normal-scores transform of the composited Sb grades within each estimation domain. Variogram models were fitted using two spherical structures. Variogram models were fitted with a relatively low γ_0 ratio, with practical ranges (at which 90% of the variance is reached) of 50–75 m in the major direction and 40–50 m in the semi-major direction. Variogram model parameters are presented in Table 14-22. The back-transformed continuity models were then used to assign weights in the estimation. The variogram model fits the experimental data well and supports the level of confidence required for the estimation.

Table 14-22: Auld Creek modelled variogram parameters for Sb estimation domains.

Variogram parameters		Domain	
		>1%	<1%
Normalised Nugget		0.56	0.16
S1	**Normalised Sill**	0.24	0.58
	Major	47.6	59.0
	Semi-Major	23.2	30.0
	Minor	2.0	5.0
	Dip	88.7	88.7
	Dip Azi	265.6	265.6
	Pitch	159.9	155.0
S2	**Normalised Sill**	0.20	0.26
	Major	111.0	135.0
	Semi-Major	72.0	90.0
	Minor	4.5	12.0
	Dip	88.7	88.7
	Dip Azi	265.6	265.6
	Pitch	159.9	155.0

14.2.4.3 Bulk Density

Density data were not composited due to sparse availability, so raw sample data were used in the estimate.

14.2.5 Block Model

The block-model parameters are detailed in Table 14-23. The block model was left un-rotated, as the mineralisation strikes north-northeast to north-northwest. Block dimensions were chosen to represent half the drill spacing along strike x (20 m) and across strike y (20 m) and sufficiently represent the changes in orebody dip along z (5 m). The estimate was calculated using sub-blocks of 1.25 m × 1.25 m × 0.625 m (x, y, and z) to sufficiently represent changes in strike and dip that are typical of the narrow, high-grade shoot geometry.

Discretisation of 5 × 5 × 3 points along the x, y, and z directions were selected to match the compositing length and block size.

Table 14-23: Auld Creek block model description.

Number of Parent Blocks	
Sub-Blocks per Parent	16 × 16 × 8 = 2,048
Sub-Block Mode	Octree
Base Point: x, y, z (m)	1507070, 5332810, 630
Parent Block Size: x, y, z (m)	20, 20, 5
Minimum Sub-Block size: x, y, z (m)	1.25, 1.25, 0.625
Boundary Size (m)	240, 760, 280
Leapfrog Rotation	None
Azimuth	0°
Dip	0°
Pitch	0°

14.2.6 Estimation

The variables were estimated in the block model in one or two passes, with variable orientation based on the vein reference surface to guide the ellipsoid direction for Au. An average orientation was used for the Sb combined estimate ellipsoid.

Search distances and minimum samples, maximum samples, and samples per drillhole search neighbourhood are detailed in Table 14-24 and Table 14-25.

Table 14-24: Auld Creek search-neighbourhood parameters.

Estimation Name	Ellipsoid Range Maximum	Ellipsoid Range Intermediate	Ellipsoid Range Minimum
Kr, Au_Best_PPM in Vein GM: Bonanza 1 Pass1	140	70	70
Kr, Au_Best_PPM in Vein GM: Bonanza 1 Pass 2	100	75	40
Kr, Au_Best_PPM in Vein GM: Fraternal Pass1	80	60	60
Kr, Au_Best_PPM in Vein GM: Fraternal Pass 2	100	75	40
Kr, I1 in Vein GM: Auld Creek Vein system	145	60	60
Kr, Sb_cut in Vein GM: Auld Creek Vein system	135	90	90

Table 14-25: Auld Creek number of samples per pass.

Estimation Name	Minimum Number of Samples	Maximum Number of Samples	Maximum Number of Samples per Drillhole
Kr, Au_Best_PPM in Vein GM: Bonanza 1 Pass1	5	20	3
Kr, Au_Best_PPM in Vein GM: Bonanza 1 Pass 2	2	25	
Kr, Au_Best_PPM in Vein GM: Fraternal Pass1	5	20	3
Kr, Au_Best_PPM in Vein GM: Fraternal Pass 2	2	25	
Kr, I1 in Vein GM: Auld Creek Vein system	4	25	
Kr, Sb_cut in Vein GM: Auld Creek Vein system	4	25	3

14.2.6.1 Gold

Grades were interpolated using OK. Search neighbourhoods were optimised for global accuracy to yield sufficient samples for estimation and create an acceptable level of smoothing while minimising conditional bias. Search neighbourhoods were 80–140 m in the major direction (x), 60–75 m in the semi-major direction (y), and set to the semi-major for the minor direction (z). The variable orientation tool was used to account for strike and dip changes in the wireframes. Sufficient samples fell within the maximum value and were weighted by the variogram model; sufficient samples fell within the maximum value and were weighted by the variogram model. A minimum of five and a maximum of 25 samples were used to inform the estimate in most domains. A maximum number of three samples per drillhole was used to ensure a minimum of two drillholes were included per estimate. Second-estimate passes had a minimum of two samples, and the maximum number of samples per drillhole limit was removed to fill blocks within the domain.

Top-cuts were not applied to either domain for Au.

14.2.6.2 Antimony

Grades were interpolated using OK. Search neighbourhoods were optimised for global accuracy to yield sufficient samples for estimation and create an acceptable level of smoothing while minimising conditional bias. Search neighbourhoods were 135–145 m in the major direction (x), 60–90 m in the semi-major direction (y), and set to semi-major for the minor direction (z) to account for strike and dip changes in the wireframes while using the variable orientation tool. Sufficient samples fell within the maximum value and were weighted by the variogram model. A minimum of 4 and a maximum of 25 samples were used to inform the estimate in most domains. A maximum number of three samples per drillhole was used to ensure a minimum of two drillholes were included per estimate for the <0.1% domain, and the drillhole restriction removed for the >0.1% Sb domain.

No further top-cuts were applied for either Sb domain.

14.2.7 Validation

Block model grades were validated by comparing the input mean grades with the block model mean grade using swath plots and visually using cross-sections. The QP (Abraham Whaanga) considers the block model to be robustly estimated.

14.2.7.1 Global Mean Validation

The mean Au and Sb grade block-model and composite comparisons are presented in Table 14-26 and Table 14-27.

The >0.1 Sb domain block mean grade is significantly lower than the declustered composite mean grade Table 14-27. This is due to the reduction of grade in areas of low sample support, as illustrated in the swath plots (Figure 14-43 and Figure 14-44). These areas are on the periphery of the Bonanza and Fraternal domains with wide-spaced drilling and are at increased risk of overestimation of Sb grades without sample support. Sensitivity testing conducted without restricting the high-grade Sb population demonstrated that these areas of lower sample support are significantly overestimated, with the high-grade Sb spread throughout the domains. A swath plot of the Bonanza domain with un-restrained high Sb grades in swaths 35 to 44 is presented in Figure 14-43.

Table 14-26: Auld Creek mean Au grade block-model and composite comparisons.

Domain	Block Mean Au Grade (g/t)	Composite Mean Au Grade (g/t)	Declustered Composite Mean Au Grade (g/t)	Relative Difference between Block Grade & Declustered Composite Au Grade (%)
Bonanza	2.20	3.01	2.02	8
Fraternal	3.28	3.34	3.25	1

Table 14-27: Auld Creek mean Sb grade block-model and composite comparisons.

Domain	Block Mean Sb Grade (%)	Composite Mean Sb Grade (%)	Declustered Composite Mean Sb Grade (%)	Relative Difference between Block Grade & Declustered Composite Sb Grade (%)
>0.1%	2.40	3.10	2.88	-17%
<0.1%	0.64	0.23	0.69	-7%

14.2.7.2 Swath Plot Validation

Block model Au and Sb grades were validated by comparing the declustered input mean composite grades with the block model mean grade from OK, nearest neighbour, and inverse distance estimates using swath plots supported by visual cross-section validation. These swath plots were generated for Au and Sb in the x and z directions and across strike in all estimation domains. Example swath plots are presented in Figure 14-43 and Figure 14-44. The plots indicate the estimation results are unbiased and appropriately smoothed, and that outliers did not lead to bias in areas of low sample support.

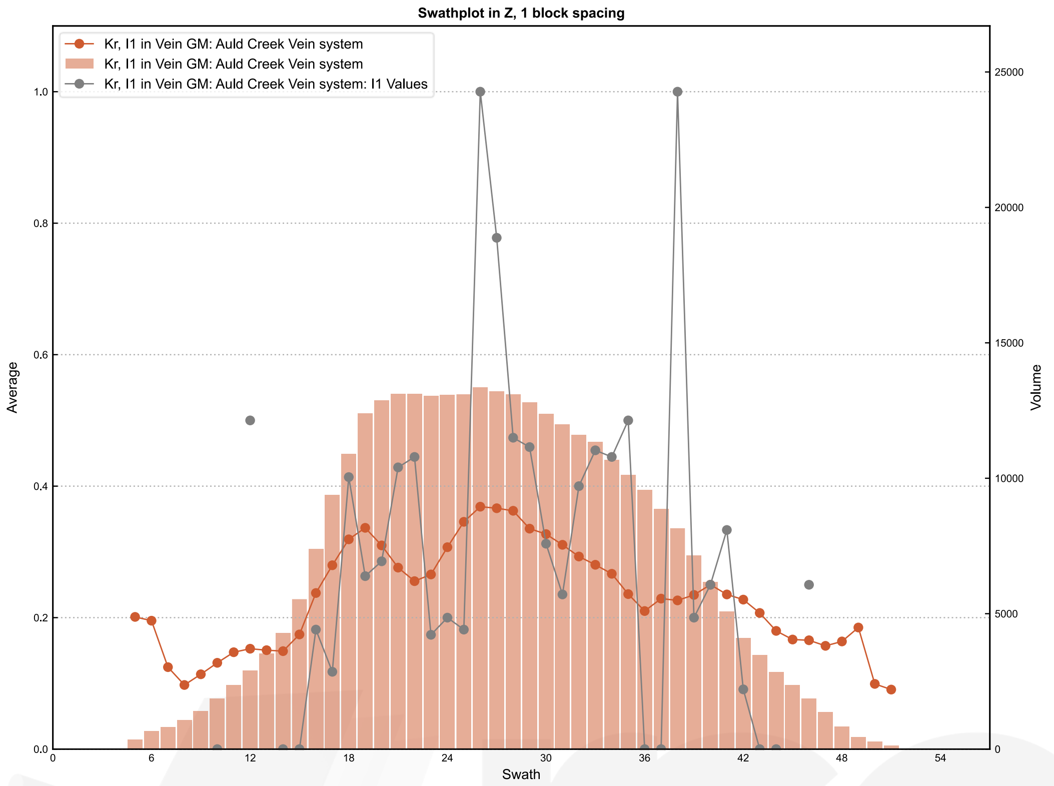


Figure 14-43: Swath plot for >1% Sb (z direction).

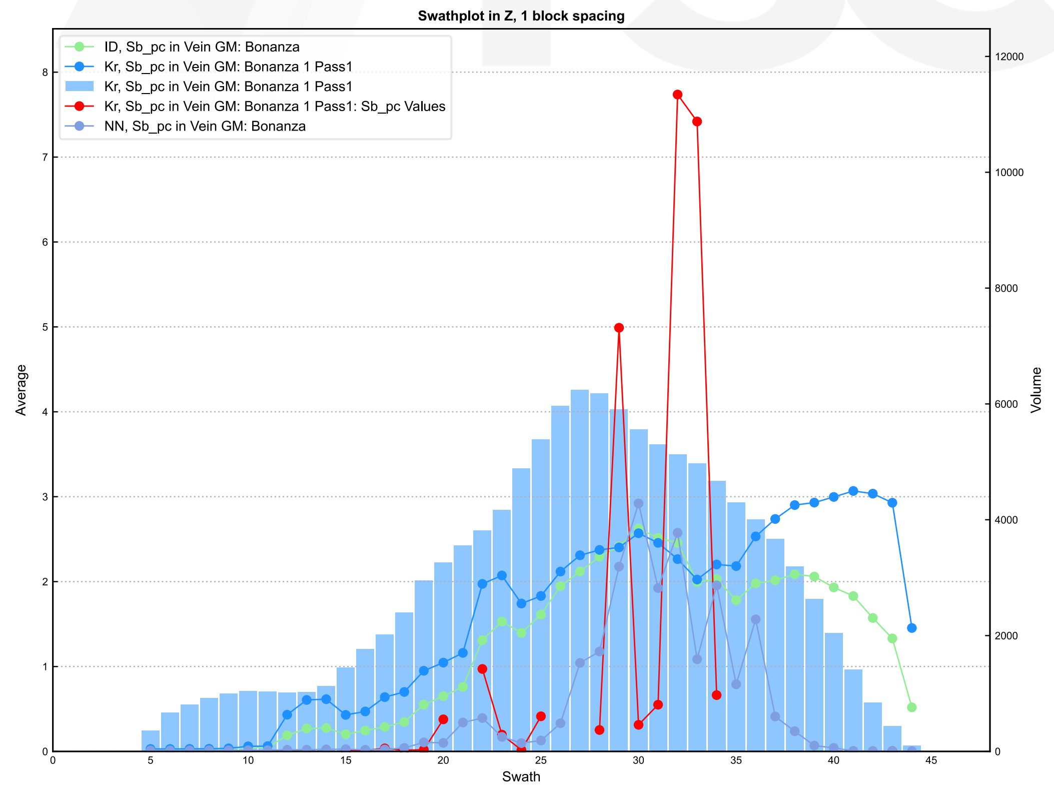


Figure 14-44: Swath plot of un-restrained Sb in the Bonanza domain created for sensitivity testing (z direction).

14.2.7.3 Visual Validation

Visual validation along cross-sections demonstrated good correlation between the input grade and OK-estimated block grades (Figure 14-45 and Figure 14-46). As expected from the smoothing effect of OK estimation, fluctuations between zones of internal dilution and zones of higher-grade mineralisation are attenuated in the smoothed block grade profiles. Some drillholes presented in the visual validations are off-plane due to deviation and may not spatially align with block grades.

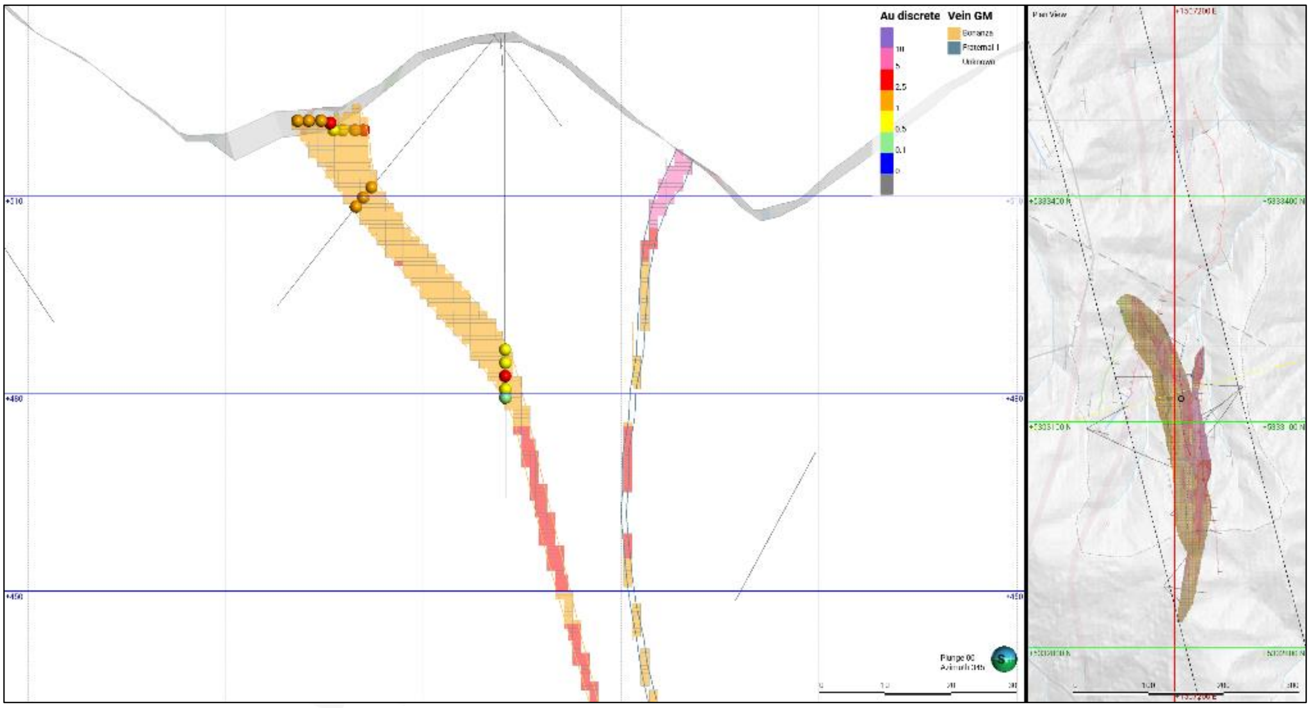


Figure 14-45: Bonanza (left) and Fraternal (right) section and plan views illustrating the estimated block model Au and 2-m Au composite (looking northwest).

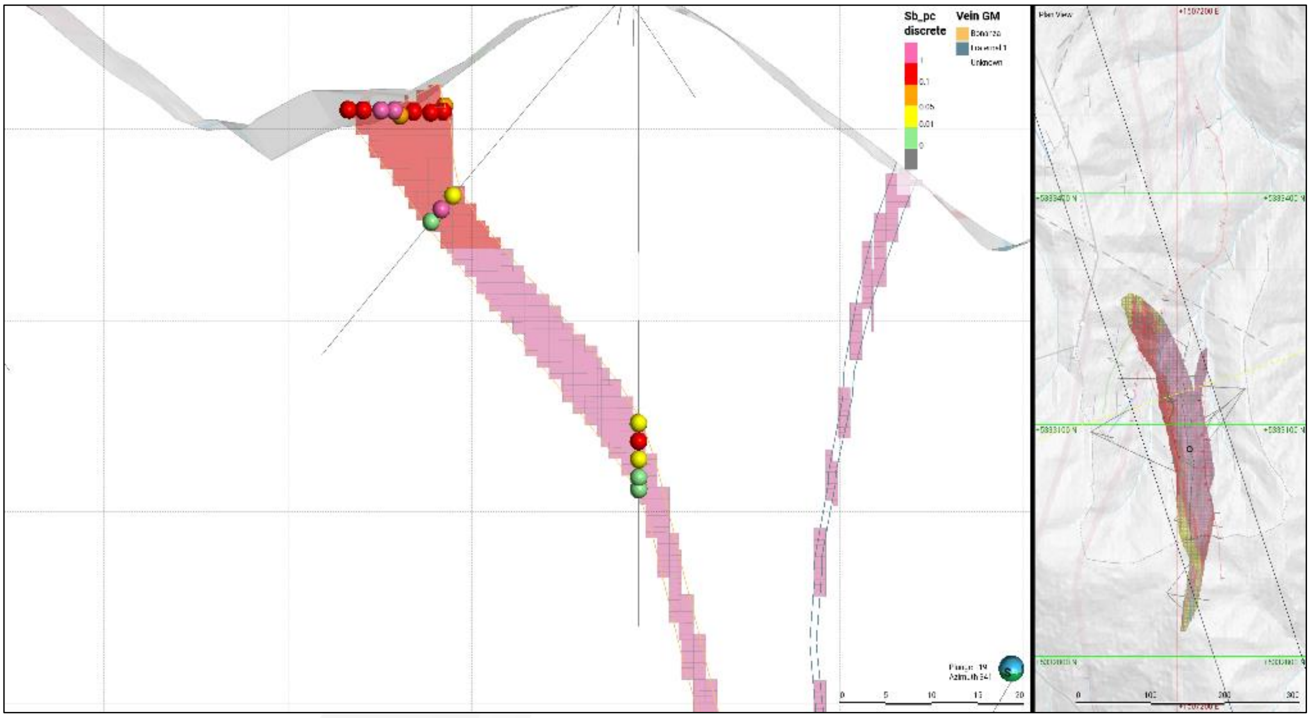


Figure 14-46: Bonanza (left) and Fraternal (right) section and plan views illustrating the estimated block model Sb and 2-m Sb composite (looking northwest).

14.2.8 Sensitivity Testing

The following five methods were used to assess the sensitivity of the OK estimate to the input parameters.

1. Adjusting the maximum number of samples in the estimation parameters.
2. Adjusting the search parameters to a percentage of the variogram range.
3. Adjusting the maximum number of samples allowed per drillhole in the estimation parameters.
4. Estimating with 1-m composites using the same estimation parameters with updated variograms and top cuts.
5. Creating a non-linear estimate using an indicator interpolant at the top-cut level (0.1% Sb).

14.2.8.1 Estimating with Different Numbers of Samples

KNA was conducted to determine the maximum number of samples per estimate, maximising the SoR and KE while reducing the SumN (Figure 14-47).

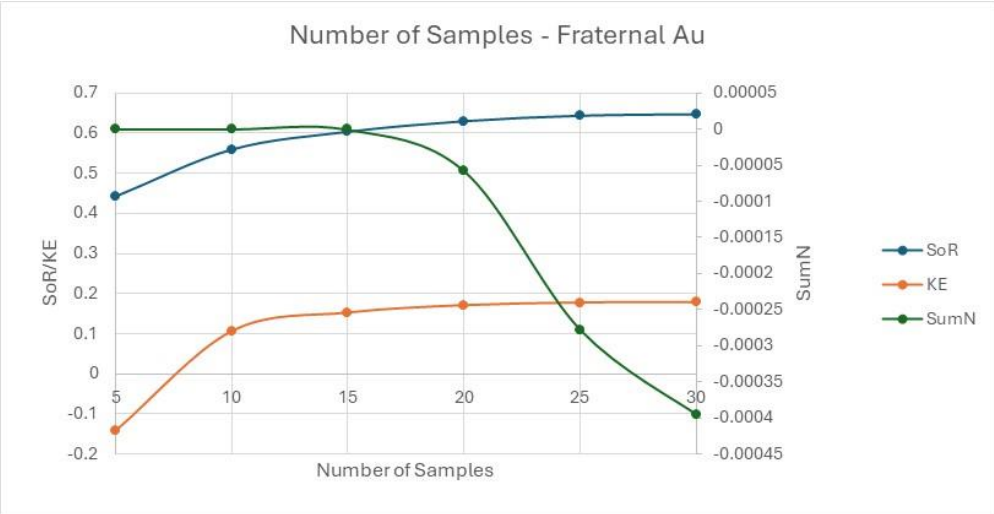


Figure 14-47: Fraternal Au: maximum number of samples per estimate.

14.2.8.2 *Estimating with Different Ellipsoid search ranges*

KNA was conducted to determine the optimum search range, maximising the SoR and KE while reducing the SumN (Table 14-28 to Table 14-31 and Figure 14-48).

Table 14-28: Fraternal Au search ranges.

Percentage	Major Search Range (m)	Semi-Major Search Range (m)
100%	115	80
80%	90	65
70%	80	60
60%	70	50
40%	45	35

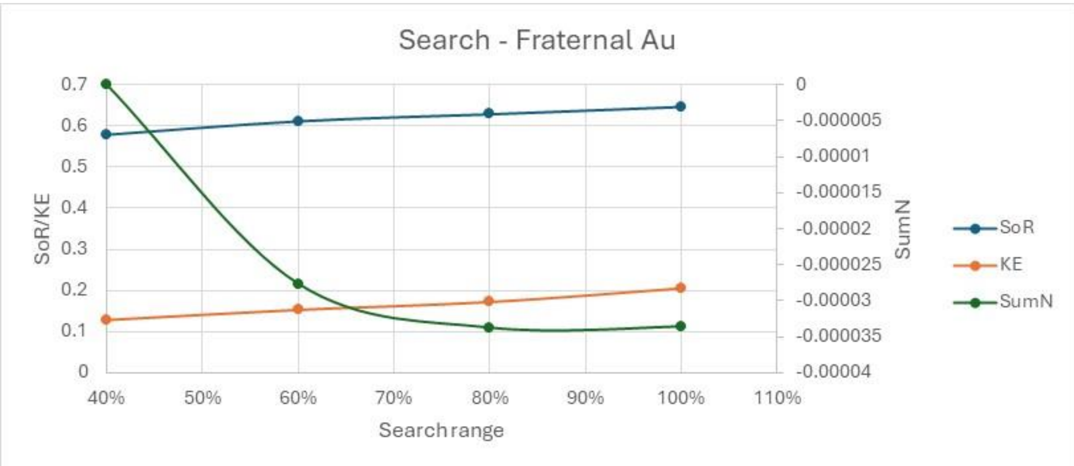


Figure 14-48: Fraternal Au search ranges.

Table 14-29: Bonanza Au search ranges.

Percentage	Major Search Range (m)	Semi-Major Search Range (m)
100%	140	70
80%	110	55
60%	85	40
40%	55	30

Table 14-30: Fraternal Sb search ranges.

Percentage	Major Search Range (m)	Semi-Major Search Range (m)
100%	145	60
80%	115	50
60%	90	40
40%	60	25

Table 14-31: Bonanza Sb search ranges.

Percentage	Major Search Range (m)	Semi-Major Search Range (m)
100%	140	75
80%	115	60
60%	85	45
40%	55	30

14.2.8.3 Estimating with Different Maximum Numbers of Samples Allowed per Drillhole

The OK estimation sensitivity was tested after first setting the search ranges and maximum number of samples per drillhole. A minimum number of samples of five and a maximum number of samples per drillhole of three required two drillholes per block estimate. Both domains with un-estimated blocks required a second pass with no restriction on the maximum number of samples per drillhole and the minimum number of samples per block estimate reduced to two. Blocks estimated in pass two have been left as unclassified and excluded from the reported resource.

14.2.8.4 Estimating Different Composite Lengths

The OK estimation of Au was tested using a 1-m sample compositing length, and the final grades were compared for all domains. The comparison resulted in minor changes to the mean grade in the selected estimation domains, demonstrating low sensitivity to compositing selection (Table 14-32 and Table 14-33).

Table 14-32: Auld Creek Au sensitivity analysis comparing different compositing lengths.

Domain	1-m Composite Mean Declustered Grade (Au g/t)	2m Composite Mean Declustered Grade (Au g/t)	Relative Difference (%)
Bonanza	2.08	2.02	-3
Fraternal	3.23	3.25	0

Table 14-33: Auld Creek Sb sensitivity analysis comparing different compositing lengths.

Domain	1-m Composite Mean Declustered Grade (Sb%)	2-m Composite Mean Declustered Grade (Sb%)	Relative Difference (%)
Bonanza	1.68	1.69	1
Fraternal	1.52	1.54	1

14.2.8.5 *Estimating with an indicator interpolant*

An indicator interpolant at a 0.1% Sb cut-off was used to sub-domain the bimodal Sb grade population. The domains above and below the top-cut were estimated separately and then combined to produce the final Sb value (Figure 14-49 and Figure 14-50).

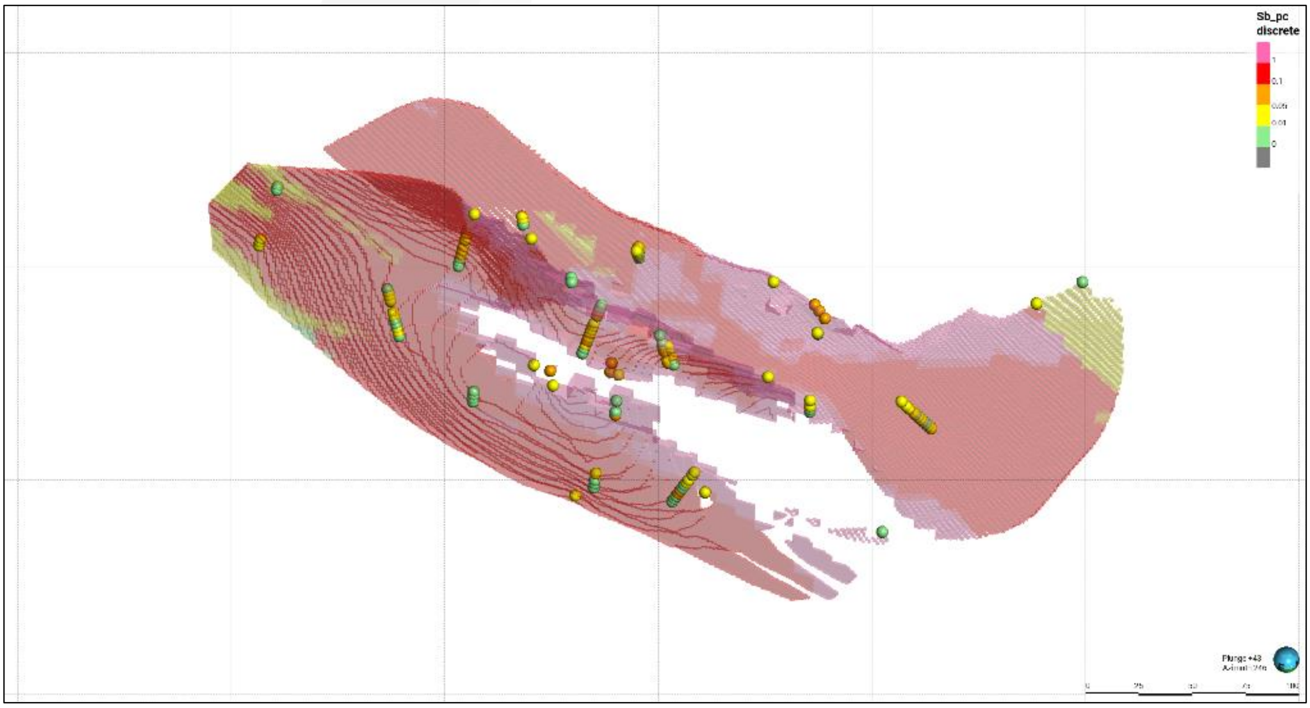


Figure 14-49: Block model illustrating the <0.1% Sb domain with 2-m composites.

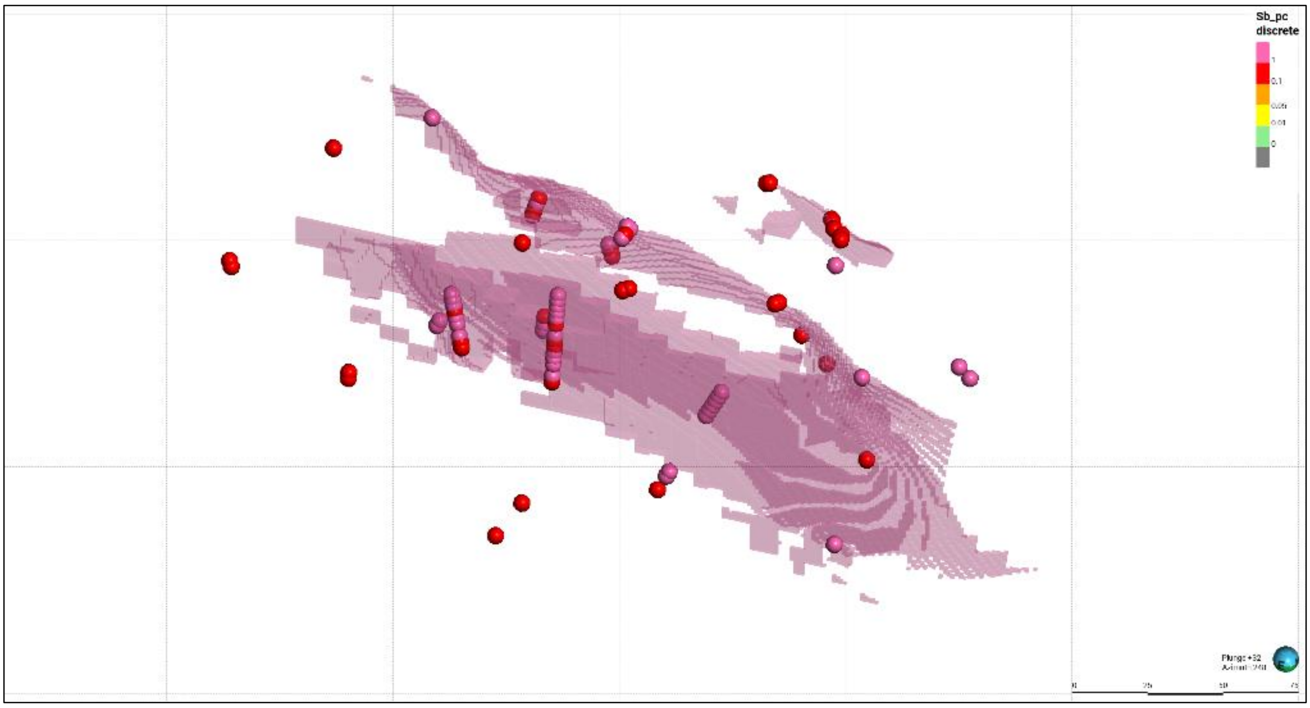


Figure 14-50: Block model illustrating the >0.1% Sb domain with 2-m composites.

14.2.9 Depletion

There are no known historical mine workings in or around the Fraternal and Bonanza reefs; therefore, no depletion was applied.

14.2.10 Classification

The QP (Abraham Whaanga) has classified the Mineral Resource in the Inferred Mineral Resource category in accordance with NI 43-101 and the CIM Definition Standards on Mineral Resources and Mineral Reserves (May 2014) (Table 14-34). For the Inferred MRE, geological evidence is sufficient to imply but not verify geological and grade continuity. The Mineral Resource is based on exploration, sampling, and assaying information gathered through appropriate techniques from trenches and drillholes.

It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. For the Inferred portion of the MRE, confidence in the estimate is not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning in pre-feasibility or feasibility studies. Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as a scoping study or preliminary economic assessment.

The inclusion of an indicator threshold at 0.1% to sub-domain the bimodal Sb population lowered the combined CV from 3.1 to 1.6 (>0.1% Sb domain) and 1.0 (<0.1% Sb domain) respectively, improving the accuracy of the estimate. However, the classified mineral resource is lower than previously reported by RRPL.

Future work should seek to decrease the drill spacing, improve sample and analytical quality control, and improve the resolution of the Au and Sb estimation domains.

Table 14-34: Classified MRE for the Auld Creek deposit.

Domain	Classification	Tonnes (Mt)	Au (g/t)	Contained Au Ounces (koz)	Sb (%)	Contained Sb (kt)	AuEq (g/t)	Contained AuEq (koz)
Bonanza	Inferred	0.3	2.2	19	1.0	3	4.2	35
Fraternal 1	Inferred	0.4	3.6	49	1.2	5	5.8	79
Total	Inferred	0.7	3.1	67	1.1	8	5.2	110

Notes:

1. *The definitions for Mineral Resources of the Canadian Institute of Mining were followed.*
2. *The Mineral Resource is reported at a cut-off of 2.5 g/t AuEq.*
3. *Metal-equivalent grades were calculated using the following prices: 2,025 USD/oz Au, and 15,000 USD/t Sb and calculated using the formula AuEq = Au g/t + 1.9 × Sb%.*
4. *The Mineral Resource was assessed for reasonable prospects of eventual economic extraction by re-blocking to a regular 2.5 mW × 5 mH × 5 mL minimum block dimension, converting to wireframe solids and generating minimum mining units, commensurate with the anticipated smallest mining-unit dimensions for a long-hole stoping operation.*
5. *Totals may vary due to rounding.*

14.2.10.1 Cut-Off Grade

A cut-off grade of 2.5 g/t AuEq was selected for reporting the Mineral Resource based on a high-level initial assessment of potential modifying factors (Table 14-35). The QP (Abraham Whaanga) completed a high-level initial assessment of various factors solely for the purpose of reasonably assessing the potential for economic extraction of the Mineral Resource. These parameters should not be regarded as assumptions that are at the confidence level required for studies (scoping, pre-feasibility, or feasibility). Accordingly, and for the sole purpose of this early stage assessment, this work assumed:

- a Au price of USD 2,025 per ounce, based on prices during the previous 24 months;
- an Sb price of USD 15,000 per tonne, based on prices during the previous 24 months;
- Au payable of 95% in the concentrate;
- Sb payable of 90% in the concentrate;
- Au recovery of 97% based on metallurgical test work;
- Sb recovery of 85% based on RRPL metallurgical test work;
- royalty of 2% for Au and Sb;
- similar processing costs to Costerfield (USD 55/t);
- similar general and administrative costs to Snowy River 2022 (USD 16/t) and Waihi 2021 (USD 18/t); and
- similar stope and ore-drive costs to 2020 Macraes Golden Point UG (USD 43/t), 2022 Snowy River (USD 110/t @ 1,000 tpd), and Waihi (USD 60/t @ 1,500-2,000 tpd).

The cut-off grade USD value was determined using mining and development costs and modifying factors for an anticipated sub-level, long-hole, open-stoping mining method. The QP (Abraham Whaanga) notes that the assumed costs are reasonable and should be considered accurate enough to support an Inferred MRE.

A conceptual mining scenario indicates the Auld Creek MRE could be exploited via a short access drive (<1 km) from the Soldiers Big River Road. This would also allow efficient bottom-up mining. The entrance to the mine would be 4–5 km from Reefton, where there are existing offices and workshops. A processing plant could be located near to Reefton.

Metallurgical recoveries are based on three metallurgical samples selected from the Fraternal shoot at Auld Creek. Initial test work indicates recoveries of >95% for Au and Sb (Siren Gold Limited, 2024a).

Table 14-35: Conceptual UG mining costs and assumptions used to determine the cut-off grade for Auld Creek.

Assumptions	Unit	Value
Au Price	USD/oz	2,020
Au Payable in Concentrate	%	95
Royalty Au	%	2
Met Rec Au	%	97
Sb Price (Ingot)	USD/t	15,000
Sb Payable in Concentrate	%	90
Royalty Sb	%	2
Met rec Sb	%	85
Au Equivalence, 1% Sb =		1.9
Mine Gate Revenue	USD per g/t	58.79
Processing, Grind, and Flotation	USD/t	55
Site G&A	USD/t	20
Stope and Ore Drive	USD/t	75
Total Costs	USD/t	150
Estimated Au g/t COG		2.5

14.2.10.2 RPEEE

In assessing the RPEEE, the QP (Abraham Whaanga) evaluated preliminary mining, metallurgical, and ESG parameters (Section 4.7). The Mineral Resource reported at the cut-off grade of 2.5 g/t AuEq is a realistic inventory of mineralisation which, under assumed and justifiable technical, economic, and developmental conditions, might, in whole or in part, become economically extractable.

The initial assessment of mining and engineering factors was carried out using a re-blocking approach. RPEEE categories were assigned after re-blocking the model to a regular 2.5 mW × 5 mH × 5 mL block size and converting the block centroid extents to wireframe solids, thereby generating minimum mining units (MMUs or 'stopes'). Due to the fixed strike direction and vertical orientation in the block model, in combination with the narrow nature of the ore zones, the MMUs are regarded as being analogous to inclined and variable-strike sub-level open-stope wireframes. The re-blocking width is thus equivalent to a minimum mining width of 2.5 m.

MMUs reporting above a 2.5 g/t AuEq threshold were flagged as meeting RPEEE (Figure 14-51). RPEEE categories were further assigned to the MMU wireframes by manually identifying areas and regions where the MMUs consistently meet this RPEEE threshold. This resulted in the exclusion of isolated high-grade blocks and zones considered too deep or too far from other zones of mineralisation to be reasonably expected to be economically extractable.

MMUs included grades between 2.0 and 2.5 g/t AuEq that were located between wide zones of higher grades.

The QP (Abraham Whaanga) notes there are no known factors related to environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other issues that could materially affect the mineral resource estimates.

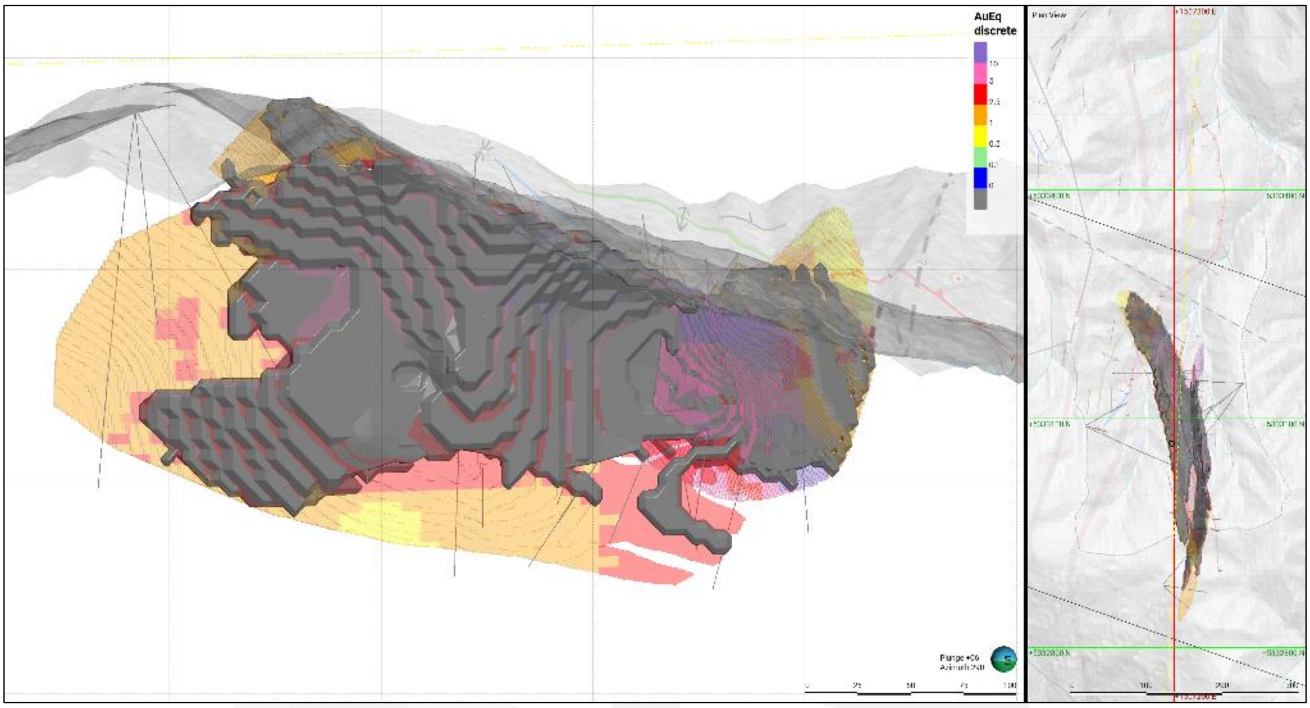


Figure 14-51: Auld Creek, with the 2.5-g/t AuEq reported volume illustrated in grey.

14.2.10.3 Markets

Antimony is a critical metal with unique properties that make it crucial for defence applications, electric vehicles, and the medical industry. It is included in most countries' critical mineral lists, and it has recently been included in the New Zealand Draft Critical Mineral List (Wood Mackenzie, 2024). Wood Mackenzie regards Sb as a high-risk critical mineral and, based on a supply-risk score, ranks it in the top 10 critical minerals for New Zealand.

China dominates the Sb market, followed by Tajikistan. Although China's Sb mine production has fallen significantly over the past several years it remained the leading global Sb producer in 2023, accounting for 48% of global Sb mine production (USGS, 2024). There are current world resources of Sb in Australia, Bolivia, Burma, China, Mexico, Russia, South Africa, and Tajikistan. It is highly likely that global Sb resources will continue to grow owing to increased focus by governments and mineral explorers.

Some Sb is recycled and recovered at secondary lead smelters as antimonial lead, most of which is generated and then consumed by the lead-acid battery industry. Key importers of ore and concentrates are Italy (36%), China (35%), India (15%), and Belgium (9%) (USGS, 2024).

While global supply and demand is concentrated in China, demand for Sb products is not considered a modifying factor that would compromise the prospects of potential economic extraction. There are many end users and a growing number of applications.

14.2.10.4 Comparison With Historical Estimate

The current MRE for Auld Creek is 20% lower on mass, 20% lower on Au grade, 35% lower on Sb%, 36% lower on Au ounces, and 48% lower on Sb tonnes compared with the Auld Creek historical estimate discussed in Section 6.4 of this Report (Siren Gold Limited, 2024b).

The likely reasons for the difference are:

- the use of a 2.5g/t AuEq cut-off and reporting RPEEE within a re-blocked minable shape;
- the bimodal Sb population being treated with an indicator threshold to create high- and low-grade Sb domains; and
- less extrapolation when classifying Inferred blocks.

14.3 Big River

14.3.1 Informing Data

The data were provided by RRPL in the form of Excel workbooks containing drillhole data (Table 14-36). The drillhole database *Full BR DB Sheets* contained collar, geology, recovery, survey, and assay information. Assay method information was compiled and provided for each element, and an Au_Best_ppm field was created by RRPL using a priority system, with the highest priority taking precedent. Density information was provided in a separate *RRL_Density_Master* Excel spreadsheet containing raw density data. The spreadsheet included a calculation for bulk density and was sorted by mineralised domain.

Table 14-36: Data used for the Big River MRE.

Type	Holes	Metres
DD	32	7,686

14.3.2 Interpretation & Model Definition

14.3.2.1 Geological Domains

The interpretation of geological domains is crucial for providing a first-order constraint on grade populations and ensuring the geological controls on mineralisation guide the modelling of estimation domains.

Gold mineralisation is hosted in quartz reefs within tightly folded sandstone and siltstone units of the Greenland Group. Disseminated mineralisation comprise silicified acicular arsenopyrite within adjacent siltstone and sandstone and forms halos surrounding mineralised quartz reefs. Full descriptions of the Project geology and controls on mineralisation can be found in Section 0.

14.3.2.2 Estimation Domains

The estimation domains were derived from geological and weathering models. The three domains displayed monomodal distributions with low CVs, expected grade contact behaviour, and reasonable adherence to intrinsic stationarity assumptions.

Contact analysis was carried out to investigate the boundary conditions of each domain. Example contact analysis plots are presented in Figure 14-52 and Figure 14-53. The mean grade was reviewed inside the domains, around the boundaries, and outside the domains. There are clear transitions between the mineralisation hosted in quartz reefs and disseminated mineralisation occurring in halos surrounding the quartz reefs. This is consistent with the geological interpretation and logging of mineralisation from drill core. Hard boundaries were used for all domains during estimation to protect the distinct boundaries between estimation domains.

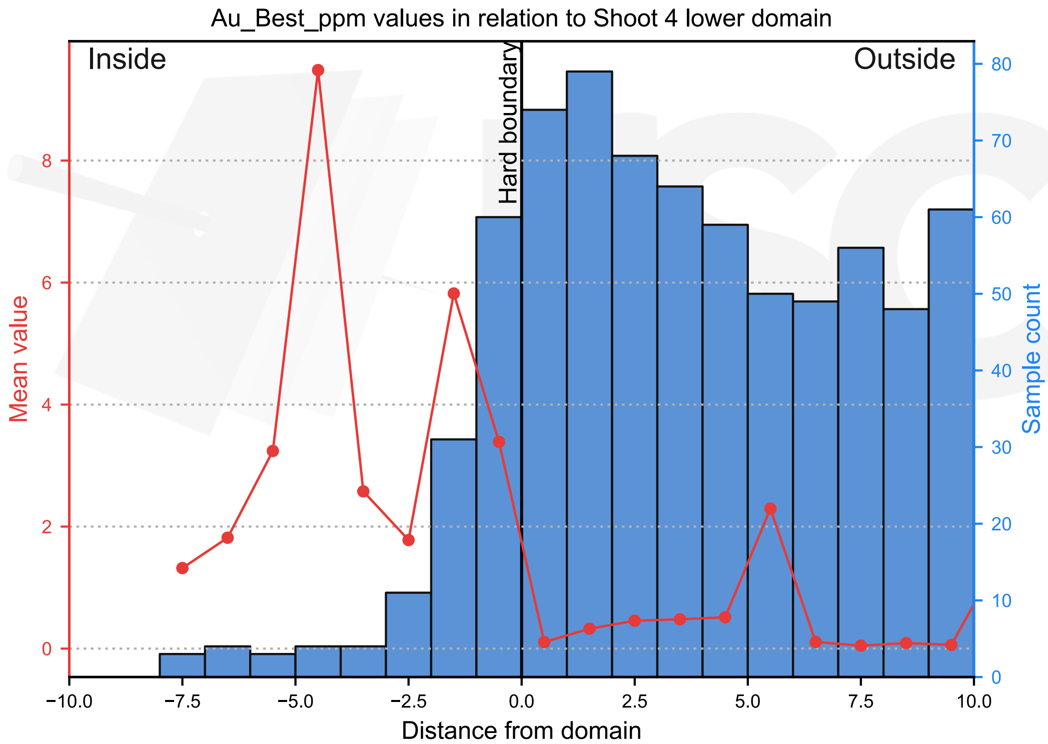


Figure 14-52: Contact analysis plot for the Shoot 4 Lower domain.

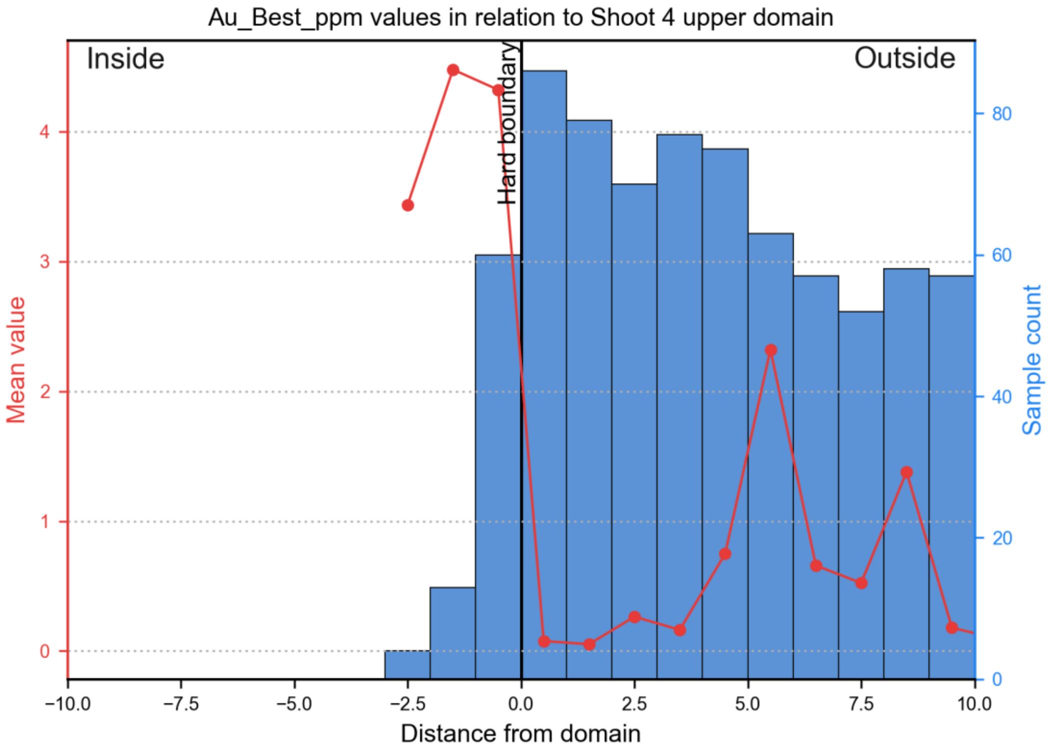


Figure 14-53: Contact analysis plot for the Shoot 4 Upper domain.

14.3.2.3 Extrapolation

Extrapolation of mineralised intersections varies from ~20–50 m. The extrapolation distances typically relate to the localised drillhole spacing. The most extreme distances occur down-plunge of the A2 reef. The QP (Abraham Whaanga) considers this a reasonable interpretation based on the limited data and >100-m-scale reef plunges present at Big River.

14.3.2.4 Alternative Interpretations

At a large scale, the controls on mineralisation are typically well understood and supported by the data, geology, and historical mine workings. However, the geological domains may vary considerably between known locations, and additional sampling may provide locally alternative interpretations.

The QP (Abraham Whaanga) considers that, at this stage in the Project and at this level of data resolution, alternative interpretations of the geology and mineralisation are possible; however, they are not likely to generate models or estimates that are significantly different.

14.3.3 Summary Statistics & Data Preparation

Assay data were composited to 2-m intervals. The mean interval length was 1 m, with 85% of the intervals sampled at a length of 1 m (Figure 14-54). Intervals and sensitivity to the compositing scheme were tested as part of the sensitivity analysis.

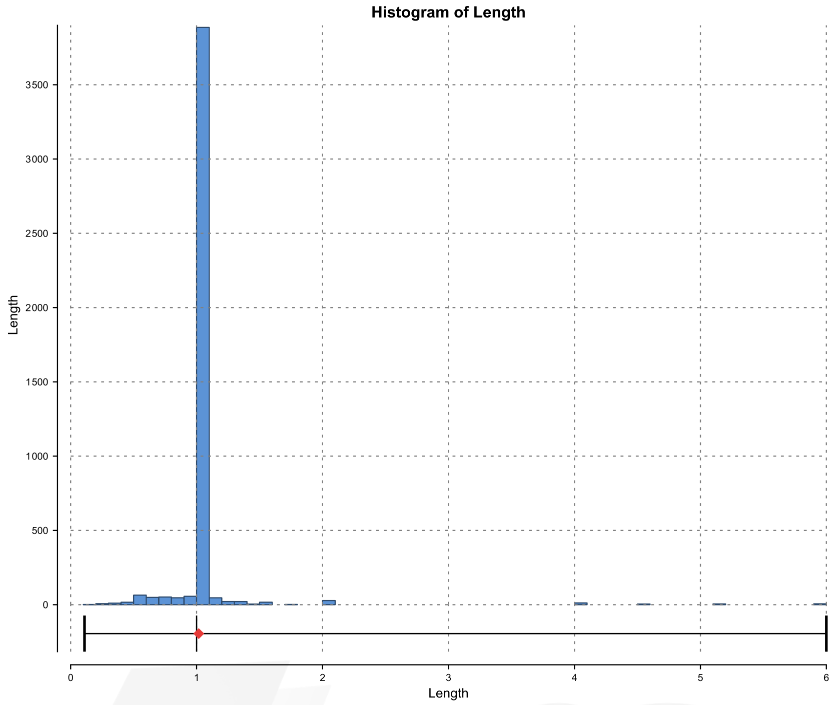


Figure 14-54: Histogram of interval lengths for the Big River deposit.

All grade variables are characterised by skewed distributions and moderately high CVs. The declustered CVs range from 1.2–1.6 before top-cutting (Table 14-37). Example log histograms are presented in Figure 14-55 and Figure 14-56.

Table 14-37: Big River domain statistics (2-m composites, declustered).

Assay	Domain	Count	Length	Mean	SD	CV	Variance	Min	Q1	Q2	Q3	Max
Au (g/t)	Shoot 4 Lower	38	70.2	2.5	2.9	1.2	8.7	0.2	0.4	1.1	3.5	11.7
	Shoot 4 Upper	28	46.6	2.8	3.5	1.3	12.0	0.1	0.9	1.3	4.3	15.8
	Shoot A2	45	81.1	1.7	2.7	1.6	7.4	0.0	0.5	0.9	1.6	15.6

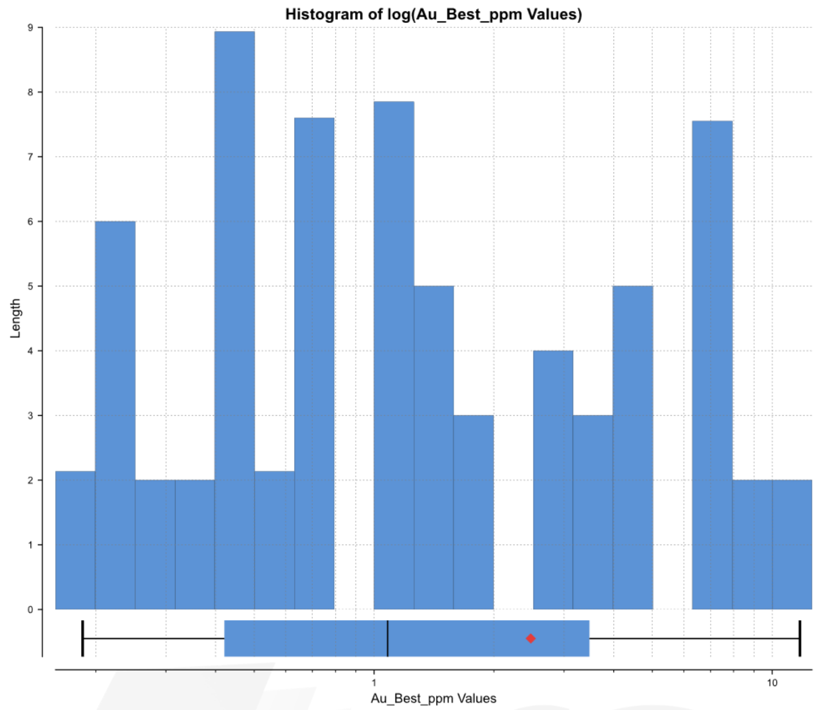


Figure 14-55: Shoot 4 Lower log histogram of the Au grade variable (declustered 2-m composites).

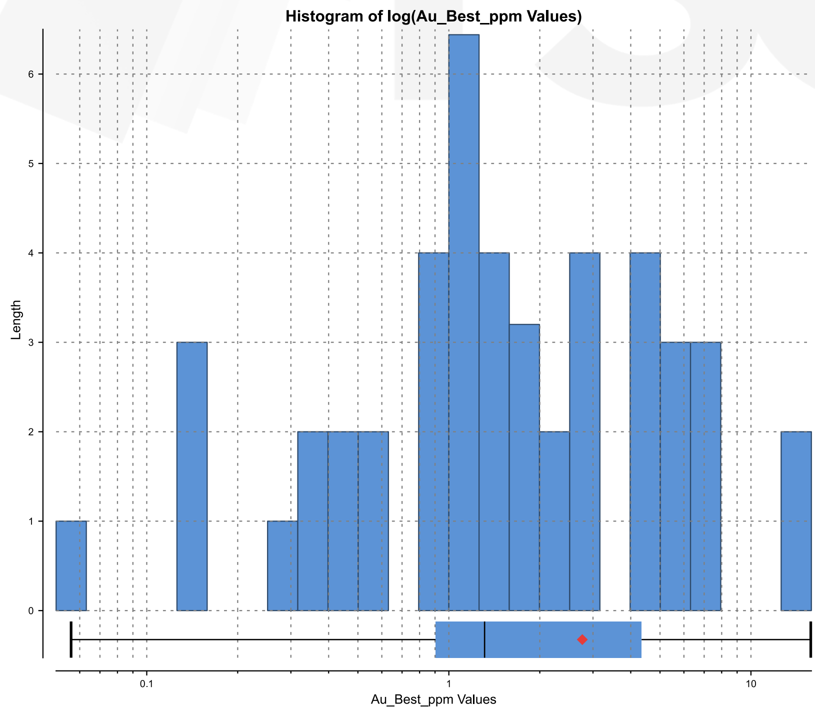


Figure 14-56: Shoot 4 Upper log histogram of the Au grade variable (declustered 2-m composites).

14.3.4 Spatial Analysis & Variography

14.3.4.1 Gold

Experimental variography was completed on the normal-scores transform of the composited Au grades within each estimation domain. Variogram models were fitted using two spherical structures. Variogram models were fitted with a relatively low γ_0 ratio, with practical ranges (at which 90% of the variance is reached) of 200–180 m in the major direction and 139–130 m in the semi-major direction. Variogram model parameters are presented in Table 14-38. An example semi-variogram and associated model are presented in Figure 14-57. The back-transformed continuity models were then used to assign weights in the estimation. The variogram model fits the experimental data well for all the major domains and supports the level of confidence required for the estimation. Directions of continuity and ranges for minor domains with sparse data were correlated with major domains where geological continuity was similar. Confidence in the modelled variograms and data density is reflected in the resource classification assigned.

Table 14-38: Big River modelled variogram parameters for estimation domains.

Variogram parameters		Domain		
		Shoot 4 Lower	Shoot 4 Upper	Shoot A2
Normalised Nugget		0.53	0.26	0.26
S1	Normalised Sill	0.30	0.21	0.24
	Major	140	115	124
	Semi-Major	80	69	66
	Minor	3	3	2
	Dip	70.3	68.9	55.8
	Dip Azi	72.8	70.7	0.9
	Pitch	82.9	78.1	89.0
S2	Normalised Sill	0.17	0.52	0.49
	Major	200	180	200
	Semi-Major	130	130	139
	Minor	6	6	6
	Dip	70.3	68.9	55.8
	Dip Azi	72.8	70.7	0.9
	Pitch	82.9	78.1	89.0

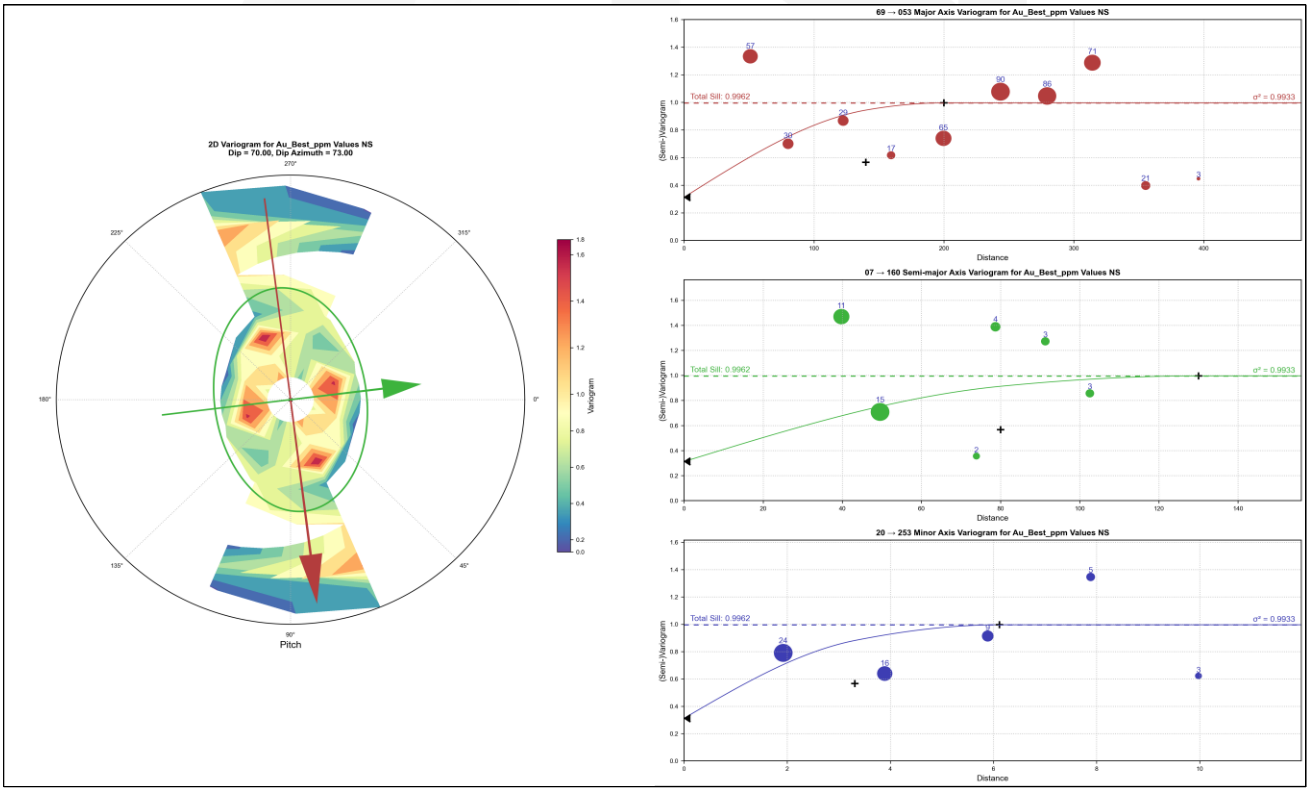


Figure 14-57: Shoot 4 Lower Au semi-variogram.

14.3.4.2 Bulk Density

Density information was gathered primarily from the A2 Shoot. An RBF interpolant evaluated on the block model gives an average density of 2.84. No oxide measurements were taken, so the oxide value of 2.65 obtained from nearby deposits (Alexander River and Auld Creek) was used.

14.3.5 Block Model

The block-model parameters are detailed in Table 14-39. The block model was left un-rotated, as Shoot A4 upper and lower strike north-northwest and Shoot A2 strikes east. Block dimensions were chosen to represent half the closest drill spacing along strike x (20 m) and across strike y (20 m) and sufficiently represent the changes in orebody dip along z (5 m). The estimate was calculated using sub-blocks of 1.25 m × 1.25 m × 0.625 m (x, y, and z) to sufficiently represent changes in strike and dip that are typical for the narrow, high-grade shoot geometry.

Discretisation of 5 × 5 × 3 points along the x, y, and z directions were selected to match the compositing length and block size.

Table 14-39: Big River block-model parameters.

Number of Parent Blocks	4[illegible] × 34 × 195 = 285,09[illegible]
Sub-Blocks Per Parent	16 × 16 × 8 = 2,048
Sub-Block Mode	Octree
Base Point: x, y, z (m)	1509370, 5322060, 1080
Parent Block Size: x, y, z (m)	20, 20, 5
Minimum Sub-Block Size: x, y, z (m)	1.25, 1.25, 0.625
Boundary Size (m)	860, 680, 975
Leapfrog Rotation	None
Azimuth	0°
Dip	0°
Pitch	0°

14.3.6 Estimation

The variables were estimated in the block model in one pass, with variable orientation based on the vein reference surface to guide the ellipsoid direction.

Search distances and minimum samples, maximum samples, and samples per drillhole search neighbourhood are presented in Table 14-40 and Table 14-41.

Table 14-40: Big River search-neighbourhood parameters.

Estimation name	Ellipsoid Range Maximum	Ellipsoid Range Intermediate	Ellipsoid Range Minimum
Kr, Au_Best_ppm in Big River Estimation: Shoot 4 Lower	200	130	130
Kr, Au_Best_ppm in Big River Estimation: Shoot 4 Upper	145	100	100
Kr, Au_Best_ppm in Big River Estimation: Shoot A2	160	110	110

Table 14-41: Big River number of samples per pass.

Estimation name	Minimum Number of Samples	Maximum Number of Samples	Maximum Number of Samples per Drillhole
Kr, Au_Best_ppm in Big River Estimation: Shoot 4 Lower	4	20	3
Kr, Au_Best_ppm in Big River Estimation: Shoot 4 Upper	4	20	3
Kr, Au_Best_ppm in Big River Estimation: Shoot A2	4	20	3

14.3.6.1 Gold

Grades were interpolated using OK. Search neighbourhoods were optimised for global accuracy to yield sufficient samples for estimation and create an acceptable level of smoothing while minimising conditional bias. Search neighbourhoods were 144–200 m in the major direction (x), 104–130 m in the semi-major direction (y), and set to semi-major for the minor direction (z). The variable orientation tool was used to account for strike and dip changes in the wireframes; sufficient samples fell within the maximum value and were weighted by the variogram model. A minimum of 4 and a maximum of 20 samples were used to inform the estimate in all domains. A maximum number of three samples per drillhole was used to ensure a minimum of two drillholes were included per estimate.

Top-cuts were applied for the Shoot 4 Lower, Shoot 4 Upper, and Shoot A2 domains to limit the influence of extreme values on the estimate (Table 14-42).

Table 14-42: Big River top-cuts.

Domained Estimation Name	Lower Bound	Upper Bound
Kr, Au_Best_ppm in Big River Estimation: Shoot 4 Lower	0.04	40
Kr, Au_Best_ppm in Big River Estimation: Shoot 4 Upper	0.15	20
Kr, Au_Best_ppm in Big River Estimation: Shoot A2	0.005	7

14.3.7 Validation

Block model grades were validated by comparing the input mean grades with the block model mean grade using swath plots and visually using cross-sections. The QP (Abraham Whaanga) considers the block model to be robustly estimated.

14.3.7.1 Global Mean Validation

Mean Au grade block-model and composite comparisons for Big River are presented in Table 14-43.

Table 14-43: Big River mean Au grade block-model and composite comparisons.

Domain	Block Mean Au Grade (g/t)	Composite Mean Au Grade (g/t)	Declustered Composite Mean Au Grade (g/t)	Relative Difference Between Block Grade and Declustered Composite Au Grade (%)
Shoot 4 Lower	2.91	4.00	2.47	15%
Shoot 4 Upper	2.93	3.59	2.77	6%

Shoot A2	1.79	1.72	1.74	3%

14.3.7.2 Swath Plot Validation

Block model Au grades were validated by comparing the declustered input mean composite grades with the block model mean grade from OK, nearest neighbour, and inverse distance estimates using swath plots supported by visual cross-section validation. These swath plots were generated for Au in the x and z directions and across strike in all estimation domains. A swath plot example is presented in Figure 14-58. The plots indicate the estimation results are unbiased and appropriately smoothed, and that outliers did not lead to bias in areas of low sample support.

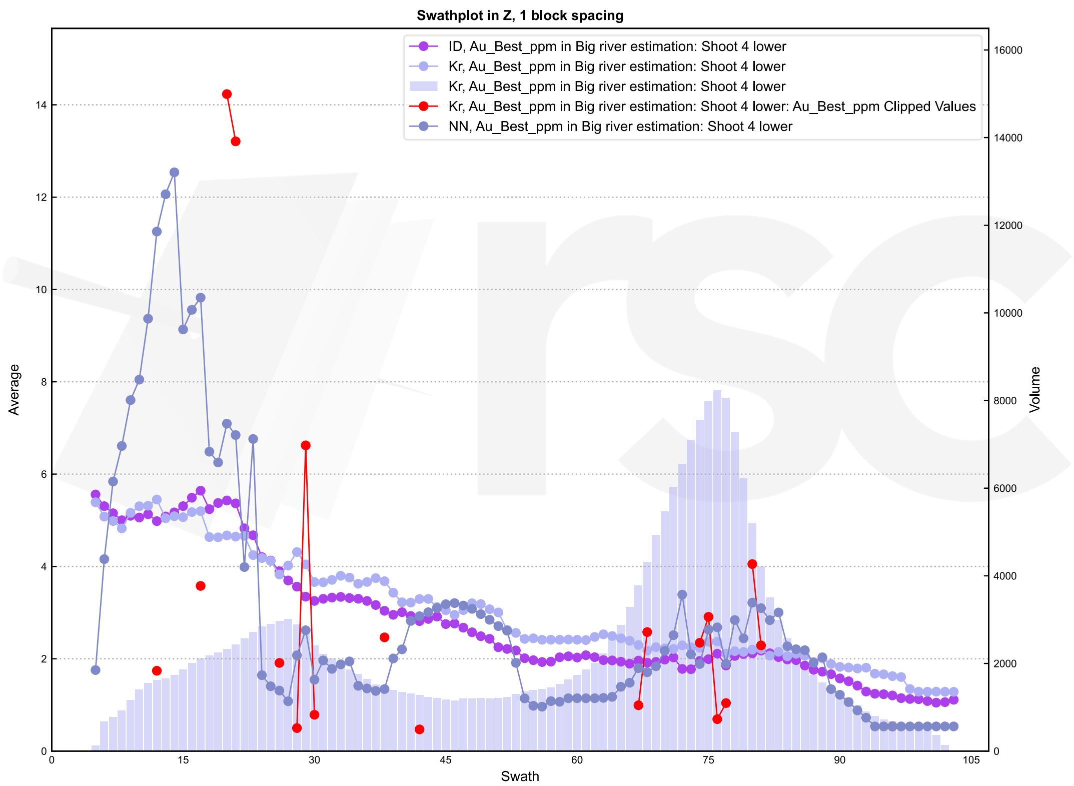


Figure 14-58: Shoot 4 Lower Au swath plot (z direction).

14.3.7.3 Visual Validation

Visual validation along cross-sections demonstrated good correlation between the input grade and OK-estimated block grades (Figure 14-59). As expected from the smoothing effect of OK estimation, fluctuations between zones of internal dilution and zones of higher-grade mineralisation are attenuated in the smoothed block grades profiles. Some drillholes presented in the visual validations are off-plane due to deviation and may not spatially align with block grades.

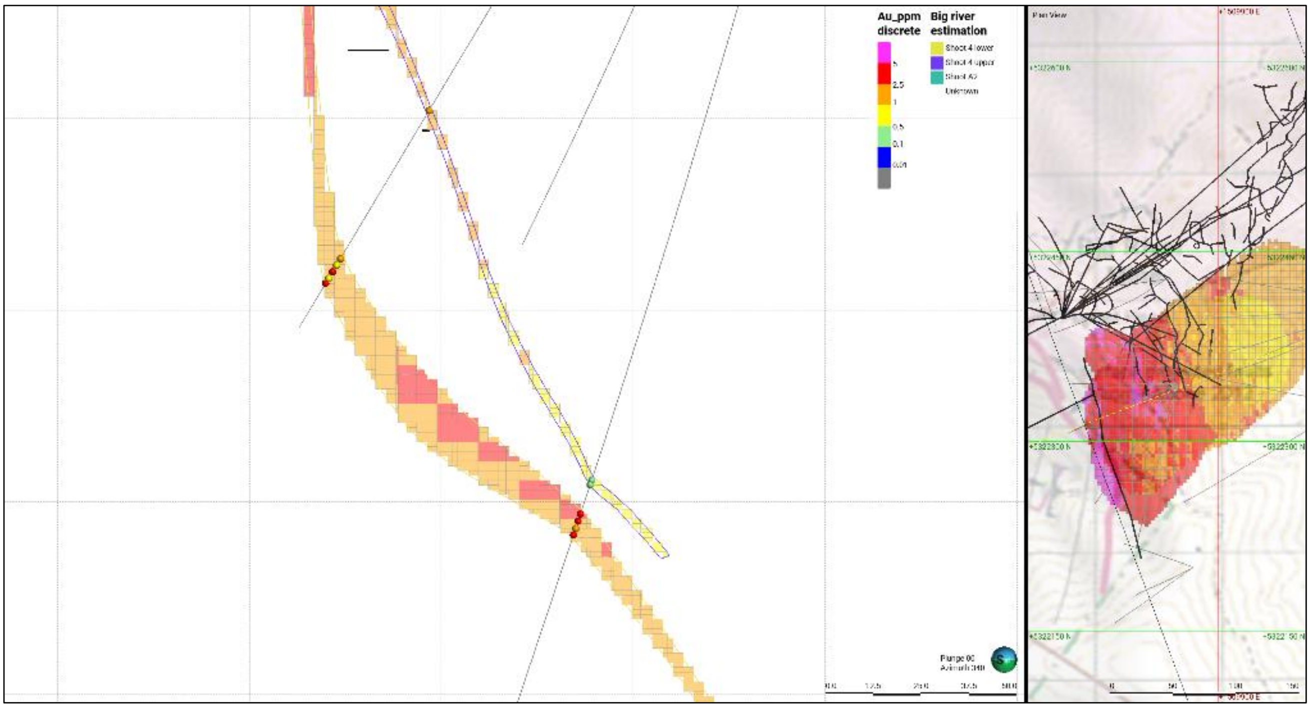


Figure 14-59: Shoot 4 Lower (left) and Shoot 4 Upper (right) section and plan views illustrating the estimated block model Au and 2-m Au composites (looking northwest).

14.3.8 Sensitivity Testing

The following four methods were used to assess the sensitivity of the OK estimate to the input parameters.

1. Adjusting the maximum number of samples in the estimation parameters.
2. Adjusting the search parameters to a percentage of the variogram range.
3. Adjusting the maximum number of samples allowed per drillhole in the estimation parameters.
4. Estimating with 1-m composites using the same estimation parameters with updated variograms and top cuts.

14.3.8.1 Estimating with Different Numbers of Samples

KNA was conducted to determine the maximum number of samples per estimate, maximising the SoR and KE while reducing the SumN (Figure 14-60).

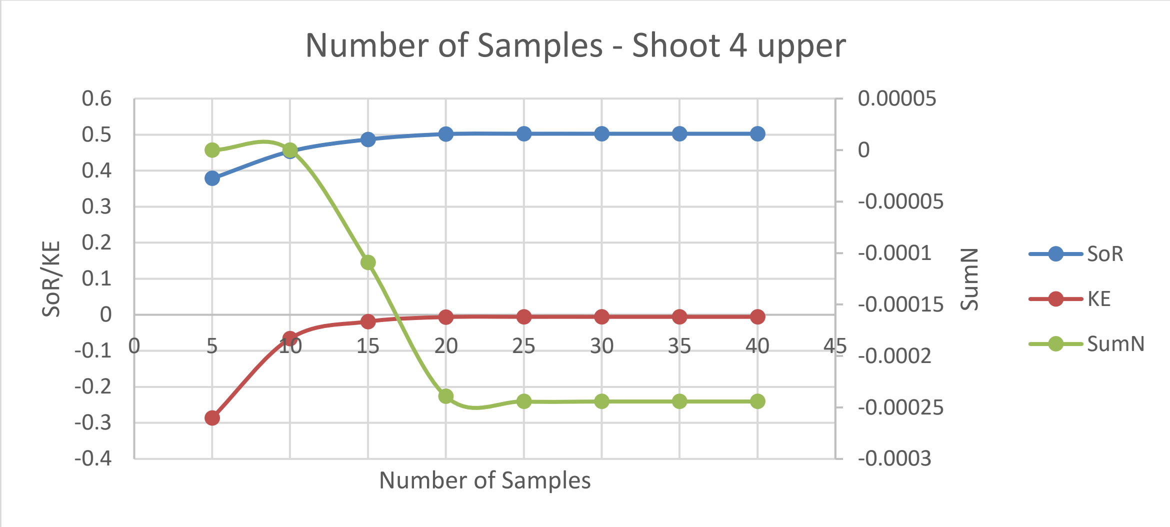


Figure 14-60: Shoot 4 Upper: maximum number of samples per estimate.

14.3.8.2 Estimating with Different Ellipsoid Search Ranges

KNA was conducted to determine the optimum search range maximising the SoR and KE while reducing the SumN (Table 14-44).

Table 14-44: Fraternal Au search ranges.

Percentage	Major Search Range (m)	Semi-Major Search Range (m)
100%	115	80
80%	90	65
70%	80	60
60%	70	50
40%	45	35

14.3.8.3 Estimating with Different Maximum Numbers of Samples Allowed per Drillhole

The OK estimation sensitivity was tested after first setting the search ranges and maximum number of samples per drillhole. A minimum number of samples of four and a maximum number of samples per drillhole of three required two drillholes per block estimate. All three domains were estimated in one pass without lowering the maximum number of drillholes per estimate and estimating in a second pass.

14.3.8.4 Estimating Different Composite Lengths

The OK estimation of Au was tested using a 1-m sample compositing length, and the final grades were compared for all domains. The comparison resulted in minor changes to the mean grade in the selected estimation domains, demonstrating low sensitivity to compositing selection (Table 14-45).

Table 14-45: Big River Au sensitivity analysis comparing different compositing lengths

Domain	1-m Composite Mean Declustered Grade (Au g/t)	2-m Composite Mean Declustered Grade (Au g/t)	Relative Difference (%)
Shoot 4 Lower	2.46	2.47	1
Shoot 4 Upper	2.75	2.77	0
Shoot A2	1.66	1.74	5

14.3.9 Depletion

The extensive historical mining in the Big River area needed to be considered for depletion of the final mineral resource. RRPL used shapefiles of the known mine workings based on digitisation of historical level plans and mine designs sourced by OGL. No as-built survey was conducted prior to the closure of the mine in 1942. The shaft top has been surveyed by Chris Cole surveyors. The QP (Abraham Whaanga) reviewed the shapefiles, both against the raw mine plans and spatially in the model, and although some errors in spatial position are possible, they align with the overall known mineralisation structure of the deposit and are deemed acceptable as a basis to create the depletion shells illustrated in Figure 14-61.

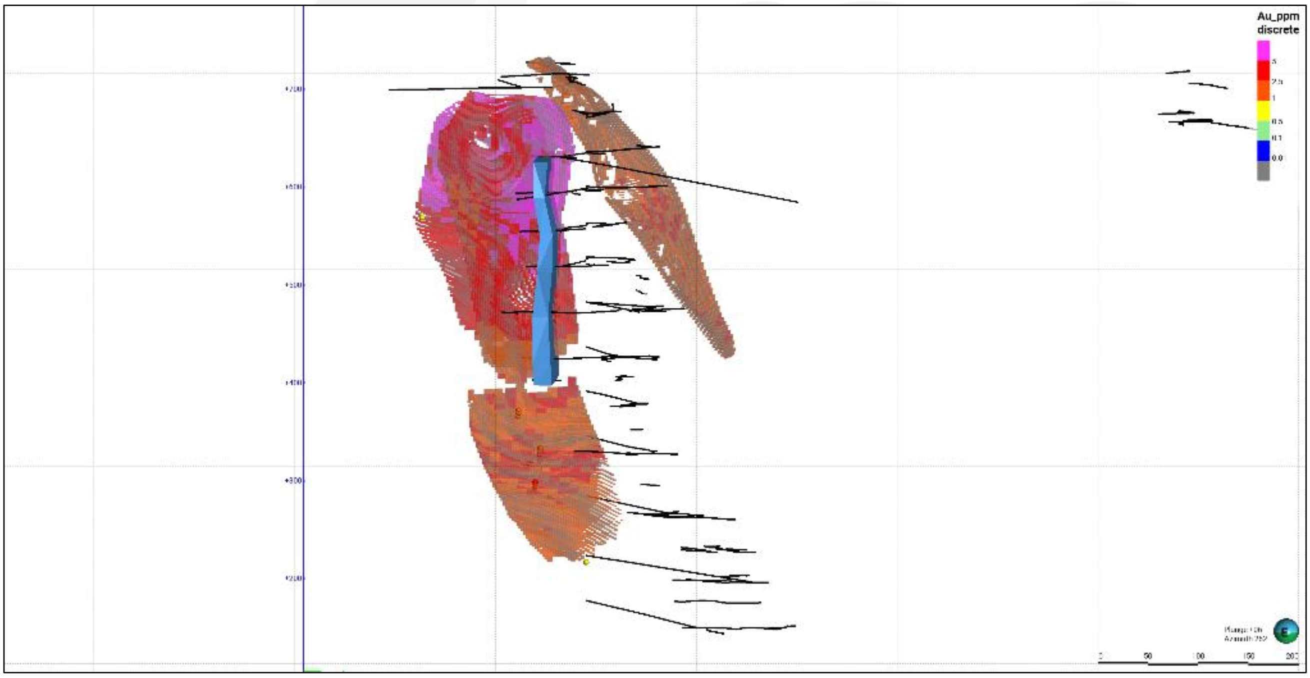


Figure 14-61: Shoot 4 Upper and Lower, with exploration and access drives in black and the depleted stoping volume in blue.

14.3.10 Classification

The QP (Abraham Whaanga) has classified the Mineral Resource in the Inferred Mineral Resource category in accordance with NI 43-101 and the CIM as the CIM Definition Standards on Mineral Resources and Mineral Reserves (May 2014) (Table 14-46). For the Inferred MRE, geological evidence is sufficient to imply but not verify geological and grade continuity. The Mineral Resource is based on exploration, sampling, and assaying information gathered through appropriate techniques from drillholes.

It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. For the Inferred portion of the MRE, confidence in the estimate is not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning in pre-feasibility or feasibility studies. Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as a scoping study or preliminary economic assessment.

Future work should seek to decrease the drill spacing, improve sample and analytical quality control, and improve the resolution of the Au estimation domains.

Table 14-46: Classified MRE for the Big River deposit.

Domain	Classification	Tonnes (Mt)	Au (g/t)	Contained Ounces (koz)
Shoot 4 Upper	Inferred	0.2	3.5	30
Shoot 4 Lower	Inferred	0.5	3.1	50
Total	Inferred	0.7	3.3	70

Notes:
1. *The definitions for Mineral Resources of the Canadian Institute of Mining were followed.*
2. *The Mineral Resource is reported at a cut-off of 2.3 g/t Au.*
3. *The Mineral Resource was assessed for reasonable prospects of eventual economic extraction by re-blocking to a regular 2 mW × 5 mH × 2.5 mL minimum block dimension, converting to wireframe solids, and generating minimum mining units, commensurate with the anticipated smallest mining-unit dimensions for a long-hole stoping operation.*
4. *Totals may vary due to rounding.*

14.3.10.1 Cut-Off Grade

A cut-off grade of 2.3 g/t Au was selected for the reporting of the Mineral Resource based on a high-level initial assessment of potential modifying factors (Table 14-47). The QP (Abraham Whaanga) completed a high-level initial assessment of various factors solely for the purpose of reasonably assessing the potential for economic extraction of the Mineral Resource. These parameters should not be regarded as assumptions that are at the confidence level required for studies (scoping, pre-feasibility, or feasibility). Accordingly, and for the sole purpose of this early stage assessment, this work assumed:

- a Au price of USD 2,025 per ounce, based on prices during the previous 24 months;
- Au payable of 95% in the concentrate;
- Au recovery of 93% based on metallurgical test work;
- royalty of 2% for Au;
- similar processing costs to Snowy River 2022 (USD 29/t) and Waihi (USD 30/t);
- similar general and administrative costs to Snowy River 2022 (USD 16/t) and Waihi 2021 (USD 18/t); and
- similar stope and ore-drive costs to 2020 Macraes Golden Point UG (USD 43/t), 2022 Snowy River (USD 110/t @ 1,000 tpd), and Waihi (USD 60/t @ 1,500-2,000 tpd).

The cut-off grade USD value was determined using mining and development costs and modifying factors for an anticipated sub-level, long-hole, open-stoping mining method. The QP (Abraham Whaanga) notes that the assumed costs are reasonable and should be considered accurate enough to support an Inferred MRE.

A conceptual mining scenario indicates the Big River MRE could be exploited via a 4–5 km access drive from the Inangahua River Valley, or as a satellite operation from the Snowy River Project (~8 km away) or the Supreme deposit (~5 km away). These approaches would also allow efficient bottom-up mining. The ore also could also be trucked easily to a central processing site near Reefton.

Table 14-47: Conceptual UG mining costs and assumptions used to determine the cut-off grade for Big River.

Assumptions;	Unit	Value
Gold Price	USD/oz	2,025
Au Payable in Concentrate	%	95
Royalty Au	%	2
Met Rec Au	%	91
Mine Gate Revenue	USD per g/t	61.29
Processing, Grind, and Flotation	USD/t	30
Site G&A	USD/t	20
Stope and Ore Drive	USD/t	75
Total Costs	USD/t	125
Estimated Au g/t COG		2.3

Metallurgical recoveries are based on one metallurgical sample collected from Big River (Siren Gold Limited, 2023b). The sample indicated good recovery from gravity test work, with ~30% of the Au being free. RRPL noted that the preliminary results indicated total recoveries of ~91% if processed using POX. Based on the results from the Big River sample and others from Alexander River, GRES reviewed the process design criteria and proposed the following conceptual processing plant:

- a nominal processing capacity of 1.25 million tonnes per annum, using a design head grade of up to 10 g/t Au to cater for surges of high-grade ore;
- three-stage crushing, with fine ore-bin storage and emergency reclaim;
- a single-stage ball mill, with a flash-flotation cell treating cyclone underflow;
- separate gravity concentrators to treat ball-mill discharge and flash-flotation concentrate to produce Doré output of up to 80% of the Au in the feed, again to handle grade surges;
- gravity plus flotation of ~93%, with an overall recovery estimated at ~90% with POX;
- concentrate dewatering using a thickener and a filter to produce a transportable concentrate;
- appropriate tailings-handling facilities depending on plant location and underground paste fill requirements; and
- STEINERT Ore Sorters to reduce waste from the mining cycle and increase the mill-feed head grade.

14.3.10.2 RPEEE

In assessing the RPEEE, the QP (Abraham Whaanga) evaluated preliminary mining, metallurgical, and ESG parameters (Section 4.7). The Mineral Resource reported at a cut-off grade of 2.3 g/t Au is a realistic inventory of mineralisation which, under assumed and justifiable technical, economic, and developmental conditions, might, in whole or in part, become economically extractable.

The initial assessment of mining and engineering factors was carried out using a re-blocking approach. RPEEE categories were assigned after re-blocking the model to a regular 2 mW × 5 mH × 2.5 mL block size and converting the block centroid extents to wireframe solids, thereby generating MMUs or 'stopes'. Due to the fixed strike direction and vertical orientation in the block model, in combination with the narrow nature of the ore zones, the MMUs are regarded as being analogous to inclined and variable-strike, sub-level, open-stope wireframes. The re-blocking width is thus equivalent to a minimum mining width of 2 m.

MMUs reporting above a 2.3 g/t Au threshold were flagged as meeting RPEEE (Figure 14-62). RPEEE categories were further assigned to the MMU wireframes by manually identifying areas and regions where the MMUs consistently meet this RPEEE threshold. This resulted in the exclusion of isolated high-grade blocks and zones considered too deep or too far from other zones of mineralisation to be reasonably expected to be economically extractable. Consequently, the entire A2 shoot was excluded.

MMUs located inside or close to modelled historical workings were also excluded, while some with grades between 1.5 and 2.3 g/t Au and located between wide zones of higher grade were included.

The QP (Abraham Whaanga) notes there are no known factors related to environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other issues that could materially affect the mineral resource estimates.

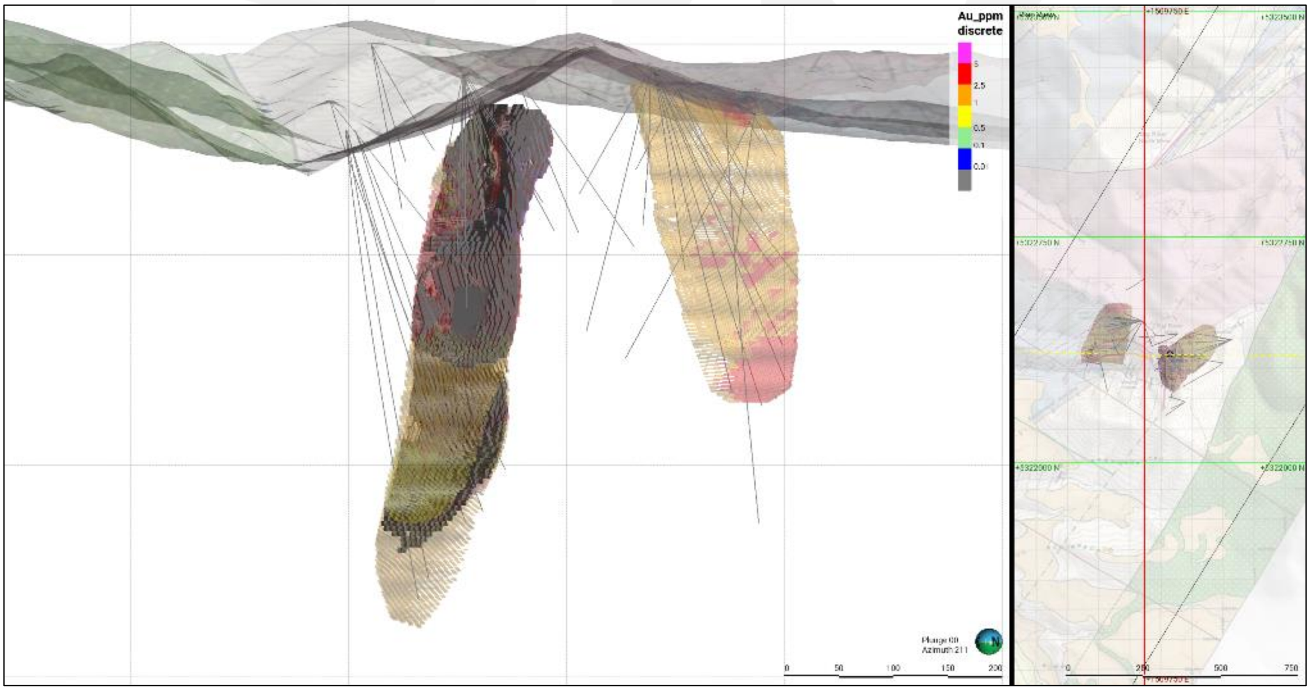


Figure 14-62: Big River 2.3-g/t reported volume in grey.

14.3.10.3 Comparison With Historical Estimate

The current MRE for Big River is 15% lower on mass, 17% lower on Au grade, and 30% lower on Au ounces compared with the Big River historical estimate disclosed in Section 6.4 of this Report (McCulloch, 2023c).

The likely reasons for the difference are:

- the use of a 2.3 g/t Au cut-off and reporting RPEEE within a re-blocked minable shape;
- removal of the A2 shoot in its entirety due to it being too far from other zones of mineralisation to be reasonable expected to be economically extractable; and
- less extrapolation when classifying inferred blocks.

14.4 Supreme

14.4.1 Informing Data

The data were provided by RRPL in the form of individual Excel spreadsheets containing drillhole data (Table 14-48). The drillhole databases included *Globe_Collar*, *Globe_Lith*, *Supreme_Lith_Recovery_calc*, *Globe_DHSurvey*, and *Globe_Assay*. Information on assay methods was compiled and provided for each element, and an Au_Best_ppm field was created by RRPL using a priority system in which the highest priority took precedent.

Table 14-48: Drilling data used for the Supreme MRE.

Type	Holes	Metres
DD	31	4,252

14.4.2 Interpretation & Model Definition

14.4.2.1 Geological Domains

The interpretation of geological domains is crucial for providing a first-order constraint on grade populations and ensuring the geological controls on mineralisation guide the modelling of estimation domains.

Gold mineralisation is hosted in quartz reefs within tightly folded sandstone and siltstone units of the Greenland Group. Disseminated mineralisation comprises silicified acicular arsenopyrite within adjacent siltstone and sandstone and forms halos surrounding mineralised quartz reefs. Full descriptions of the Project geology and controls on mineralisation can be found in Section 0.

14.4.2.2 Estimation Domains

The estimation domains were derived from geological and weathering models. The three domains displayed monomodal distributions with low CVs, expected grade contact behaviour, and reasonable adherence to intrinsic stationarity assumptions.

Contact analysis was completed to investigate the boundary conditions of each domain. An example contact analysis plot is presented in Figure 14-63. The mean grade was reviewed inside the domains, around the boundaries, and outside the domains. There are clear transitions between the mineralisation hosted in quartz reefs and disseminated mineralisation occurring in halos surrounding the quartz reefs. This is consistent with the geological interpretation and logging of mineralisation from drill core. Hard boundaries were used for all domains during estimation to protect the distinct boundaries between estimation domains.

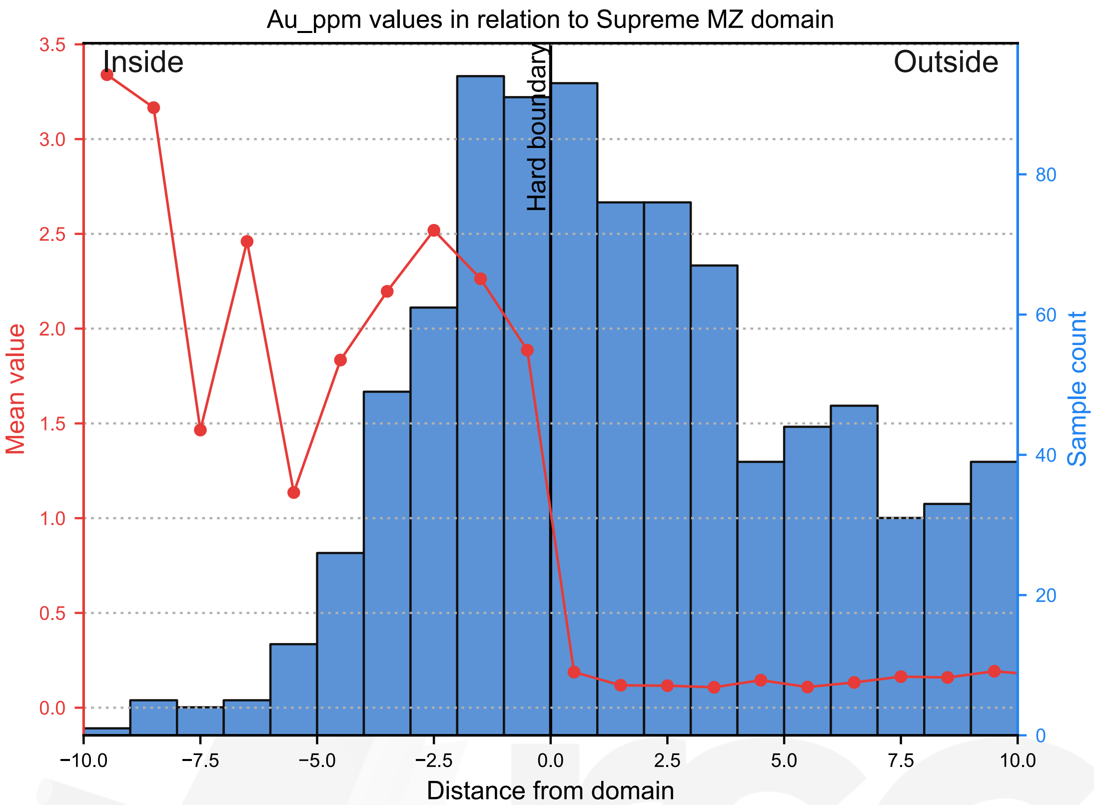


Figure 14-63: Contact analysis plot for the Supreme domain.

14.4.2.3 *Extrapolation*

Extrapolation of mineralised intersection varies from ~10 to ~120 m. In general, the extrapolation distances relate to the localised drillhole spacing. The most extreme distances occur in Rainy reef, where there is a small number of widely spaced drillholes defining a 300–230 m reef. The QP (Abraham Whaanga) considers this a reasonable interpretation based on the limited data and potential km-scale reefs present nearby.

14.4.2.4 *Alternative Interpretations*

At a large scale, the controls on mineralisation are typically well understood and supported by the data, geology, and historical mine workings. However, the geological domains may vary considerably between known locations, and additional sampling may provide locally alternative interpretations.

The QP (Abraham Whaanga) considers that, at this stage in the Project and at this level of data resolution, alternative interpretations of the geology and mineralisation are possible; however, they are not likely to generate models or estimates that are significantly different.

14.4.3 Summary Statistics & Data Preparation

Assay data were composited to 2-m intervals. The mean interval length was 1 m, with 81% of the intervals sampled at a length of 1 m (Figure 14-64). Intervals and sensitivity to the compositing scheme were tested as part of the sensitivity analysis.

A logging and sampling validation issue was noted in drillhole RDD0023, where the highest-grade sample in the deposit was assayed at 1 m @ 31.5 g/t. The logging comments and core photos (Figure 14-65) demonstrate a 0.8-m void and 0.2 m of recovered core constituting the 1-m interval; therefore, the sample interval should be 0.2 m @ 31.5 g/t. Methods for the treatment of this sampling issue are discussed in Section 14.4.8.

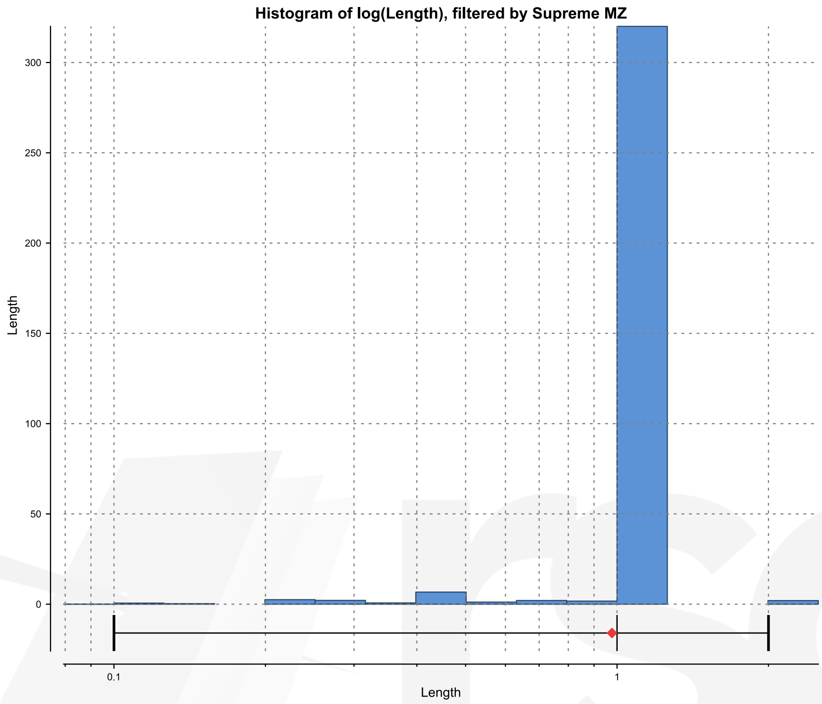


Figure 14-64: Histogram of interval lengths for the Supreme deposit.

Figure 14-65: Core from drillhole RDD0023, with 0.2m of intact core and 0.8 m of void and old workings.

All grade variables are characterised by skewed distributions and moderately high CVs (Table 14-49). The declustered CVs range from 0.6–1.2 before top-cutting. An example log histogram is presented in Figure 14-66.

Table 14-49: Supreme domain statistics (2-m composites, declustered).

Assay	Domain	Count	Length	Mean	SD	CV	Variance	Min	Q1	Q2	Q3	Max
Au (g/t)	Supreme	183	350.4	2.1	1.8	0.9	3.3	0.0	0.9	1.5	2.7	13.2
	Rainy Reef	19	35.2	1.0	1.2	1.2	1.5	0.0	0.1	0.7	1.4	5.2
	Supreme Upper	19	30.0	0.8	0.5	0.6	0.2	0.0	0.5	0.6	1.0	2.4

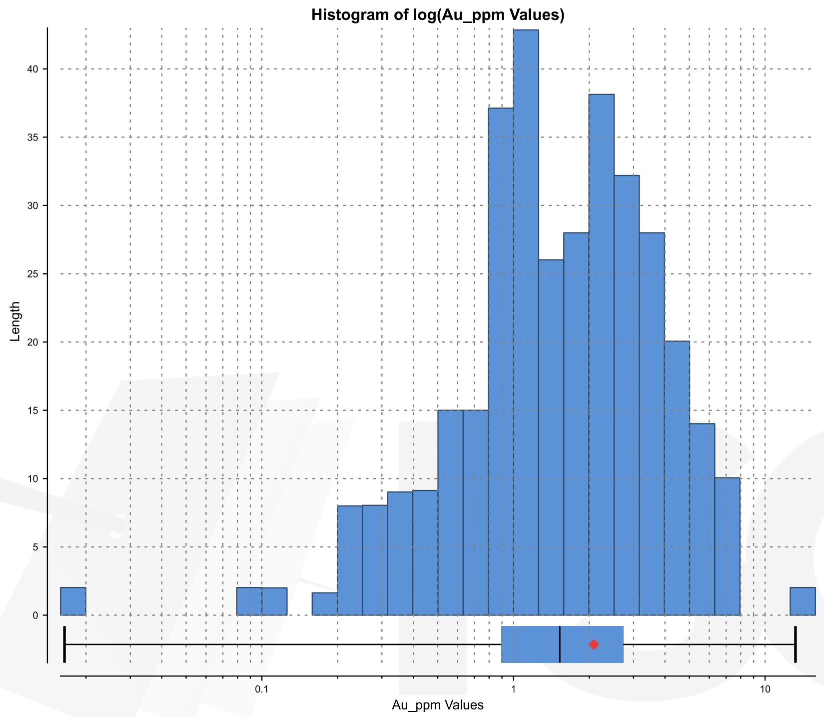


Figure 14-66: Supreme histogram of the Au grade variable (declustered 2-m composites).

14.4.4 Spatial Analysis & Variography

14.4.4.1 Gold

Experimental variography was completed on the normal-scores transform of the composited Au grades within each estimation domain. Variogram models were fitted using two spherical structures. Variogram models were fitted with a relatively low γ_0 ratio, with practical ranges (at which 90% of the variance is reached) of 130–170 m in the major direction and 80–107 m in the semi-major direction. Variogram model parameters are presented in (Table 14-50). An example semi-variogram and associated model are presented in Figure 14-67. The back-transformed continuity models were then used to assign weights in the estimation. The variogram model fits the experimental data for the major domain and supports the level of confidence required for the estimation. Directions of continuity and ranges for minor domains with sparse data were correlated with the major domain where geological continuity was similar and show poor data fit due to low drilling density. Rainy Reef and Supreme Upper are excluded from the resource. Confidence in the modelled variograms and data density is reflected in the resource classification assigned.

Table 14-50: Supreme modelled variogram parameters for estimation domains.

Variogram Parameters		Domain		
		Supreme	Rainy Reef	Supreme Upper
Normalised Nugget		0.33	0.26	0.25
S1	Normalised Sill	0.24	0.24	0.13
	Major	70	70	56
	Semi-Major	21	46	43
	Minor	4	3	3
	Dip	50.7	61.9	38.4
	Dip Azi	123.6	87.8	125.7
	Pitch	173.4	63.5	127.2
S2	Normalised Sill	0.4	0.49	0.6
	Major	170	160	130
	Semi-Major	80	107	107
	Minor	9	4	5
	Dip	50.7	61.9	38.4
	Dip Azi	123.6	87.8	125.7
	Pitch	173.4	63.5	127.2

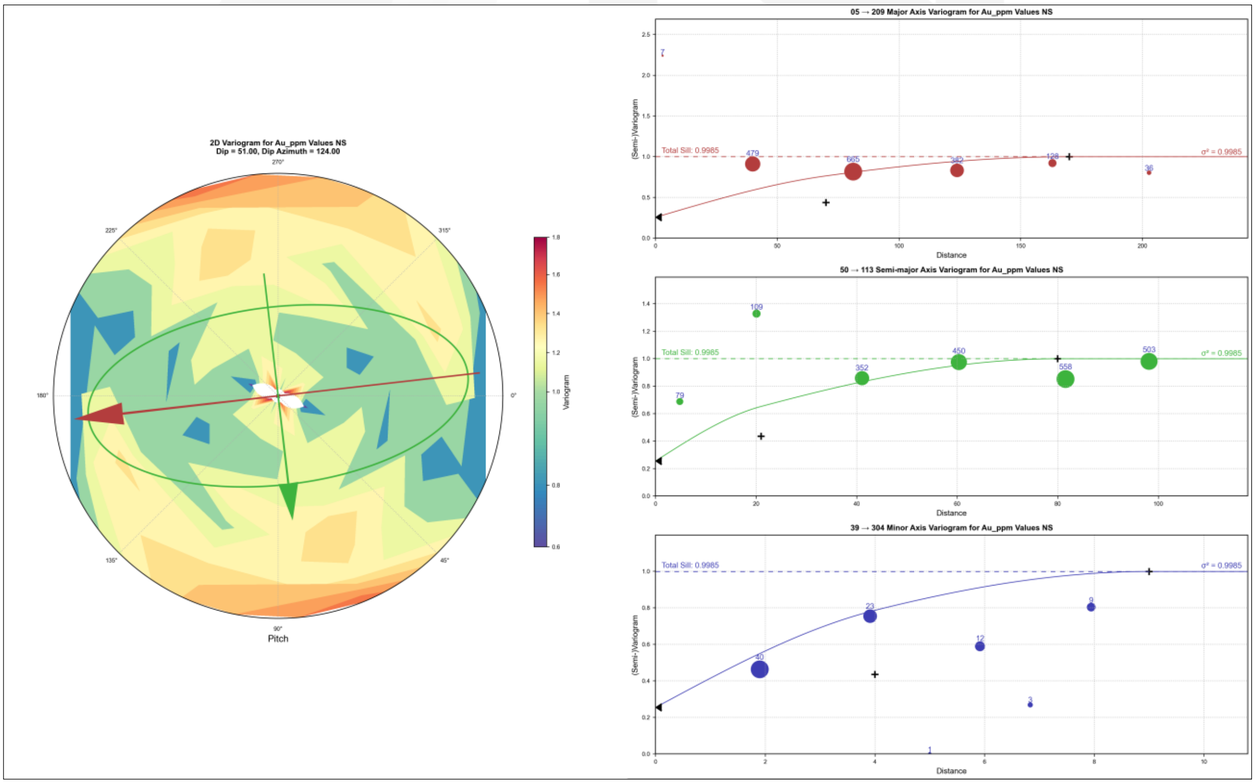


Figure 14-67: Supreme Au semi-variogram.

14.4.5 Block Model

The block-model parameters are detailed in Table 14-51. The block model was left un-rotated, as the Supreme domains strike broadly north. Block dimensions were chosen to represent half the closest drill spacing along strike x (20 m) and across strike y (20 m) and sufficiently represent the changes in orebody dip along z (10 m). The estimate was calculated using sub-blocks of 5 m × 5 m × 2.5 m (x, y, and z) to sufficiently represent changes in strike and dip that are typical for the narrow, high-grade shoot geometry.

Discretisation of 5 × 5 × 3 points along the x, y, and z directions were selected to match the compositing length and block size.

Table 14-51: Supreme block-model parameters.

Number of parent blocks:	26 × 24 × 59 = 36,816
Sub-blocks per parent:	4 × 4 × 4 = 64
Sub-block mode:	Octree
Base point: X, Y, Z (m)	1,509,235, 5,328,235, 723
Parent block size: X, Y, Z (m)	20, 20, 10
Minimum sub-block size: X, Y, Z (m)	5, 5, 2.5
Boundary size: (m)	520, 480, 590
Leapfrog rotation:	none
Azimuth:	0°
Dip:	0°
Pitch:	0°

14.4.6 Estimation

The variables were estimated in the block model in one or two passes, with variable orientation based on the vein reference surface to guide the ellipsoid direction.

Search distances and minimum samples, maximum samples, and samples per drillhole search neighbourhood are presented in Table 14-52 and Table 14-53.

Table 14-52: Supreme search-neighbourhood parameters.

Estimation name	Ellipsoid range maximum	Ellipsoid range intermediate	Ellipsoid range minimum
Kr, Au_ppm in Supreme Geological Model: Rainy Reef Pass 1	160	110	110
Kr, Au_ppm in Supreme Geological Model: Rainy Reef Pass 2	160	110	110
Kr, Au_ppm in Supreme Geological Model: Supreme Pass 1	170	80	80
Kr, Au_ppm in Supreme Geological Model: Supreme Pass 2	170	80	80
Kr, Au_ppm in Supreme Geological Model: Supreme Upper Pass 1	130	110	110
Kr, Au_ppm in Supreme Geological Model: Supreme Upper Pass 2	130	110	110

Table 14-53: Supreme number of samples per pass.

Estimation name	Minimum number of samples	Maximum number of samples	Maximum number of samples per drillhole
Kr, Au_ppm in Supreme Geological Model: Rainy Reef Pass 1	5	30	3
Kr, Au_ppm in Supreme Geological Model: Rainy Reef Pass 2	2	30	
Kr, Au_ppm in Supreme Geological Model: Supreme Pass 1	5	30	3
Kr, Au_ppm in Supreme Geological Model: Supreme Pass 2	2	30	
Kr, Au_ppm in Supreme Geological Model: Supreme Upper Pass 1	5	30	3
Kr, Au_ppm in Supreme Geological Model: Supreme Upper Pass 2	2	30	

14.4.6.1 Gold

Grades were interpolated using OK. Search neighbourhoods were optimised for global accuracy to yield sufficient samples for estimation and create an acceptable level of smoothing while minimising conditional bias. Search neighbourhoods were 130–170 m in the major direction (x), 80–107 m in the semi-major direction (y), and set to semi-major for the minor direction (z). The variable orientation tool was used to account for strike and dip changes in the wireframes; sufficient samples fell within the maximum value and were weighted by the variogram model. A minimum of 5 and a maximum of 30 samples were used to inform the estimate in the Supreme domain. Second-estimate passes had a minimum of two samples, and the maximum number of samples per drillhole limit was removed to fill blocks within the domain.

Top-cuts were applied for the Supreme domain to limit the influence of extreme values on the estimate (Table 14-54).

Table 14-54: Supreme top-cuts.

Domained Estimation Name	Lower Bound	Upper Bound
Kr, Au_ppm in Geological Model: Supreme Pass 1	0.01	10
Kr, Au_ppm in Geological Model: Supreme Pass 2	0.01	10

14.4.7 Validation

Block model grades were validated by comparing the input mean grades with the block model mean grade, using swath plots, and visually using cross-sections. The QP (Abraham Whaanga) considers the block model to be robustly estimated.

14.4.7.1 Global Mean Validation

Mean Au grade block-model and composite comparisons for Supreme are presented in Table 14-55. Rainy Reef and Supreme Upper are excluded from the resource.

Table 14-55: Supreme mean Au grade block-model and composite comparisons.

Domain	Block Mean Au Grade (g/t)	Composite Mean Au Grade (g/t)	Declustered Composite Mean Au Grade (g/t)	Relative Difference Between Block Grades and Declustered Composite Au Grades (%)

Supreme	1.89	2.12	2.09	-11
Rainy Reef	0.88	1.10	1.01	-14
Supreme Upper	0.84	0.78	0.78	7

14.4.7.2 Swath Plot Validation

Block model Au grades were validated by comparing the declustered input mean composite grades with the block model mean grade from OK, nearest neighbour, and inverse distance estimates using swath plots supported by visual cross-section validation. The swath plots were generated for Au in the x and z directions and across strike in all estimation domains. A swath plot example is presented in Figure 14-68. The plots indicate the estimation results are unbiased and appropriately smoothed, and that outliers did not lead to bias in areas of low sample support.

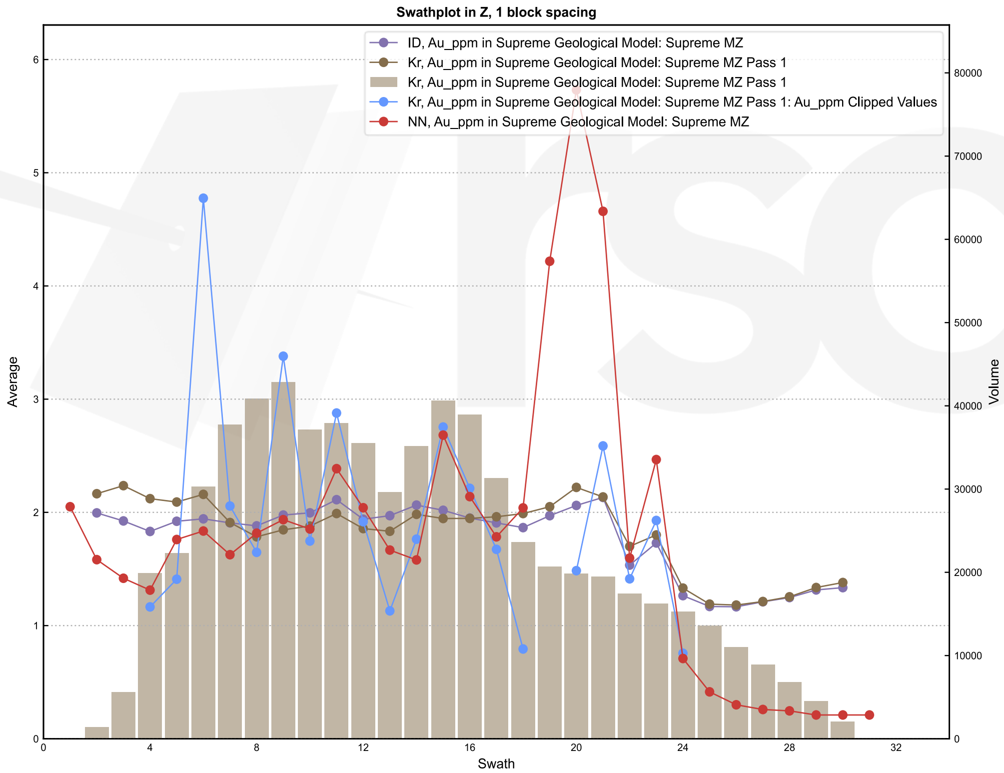


Figure 14-68: Supreme Au swath plot (z direction).

14.4.7.3 Visual Validation

Visual validation along cross-sections demonstrated good correlation between the input grade and OK-estimated block grades (Figure 14-69). As expected from the smoothing effect of OK estimation, fluctuations between zones of internal dilution and zones of higher-grade mineralisation are attenuated in the smoothed block grades profiles. Some drillholes presented in the visual validations are off-plane due to deviation and may not spatially align with block grades.

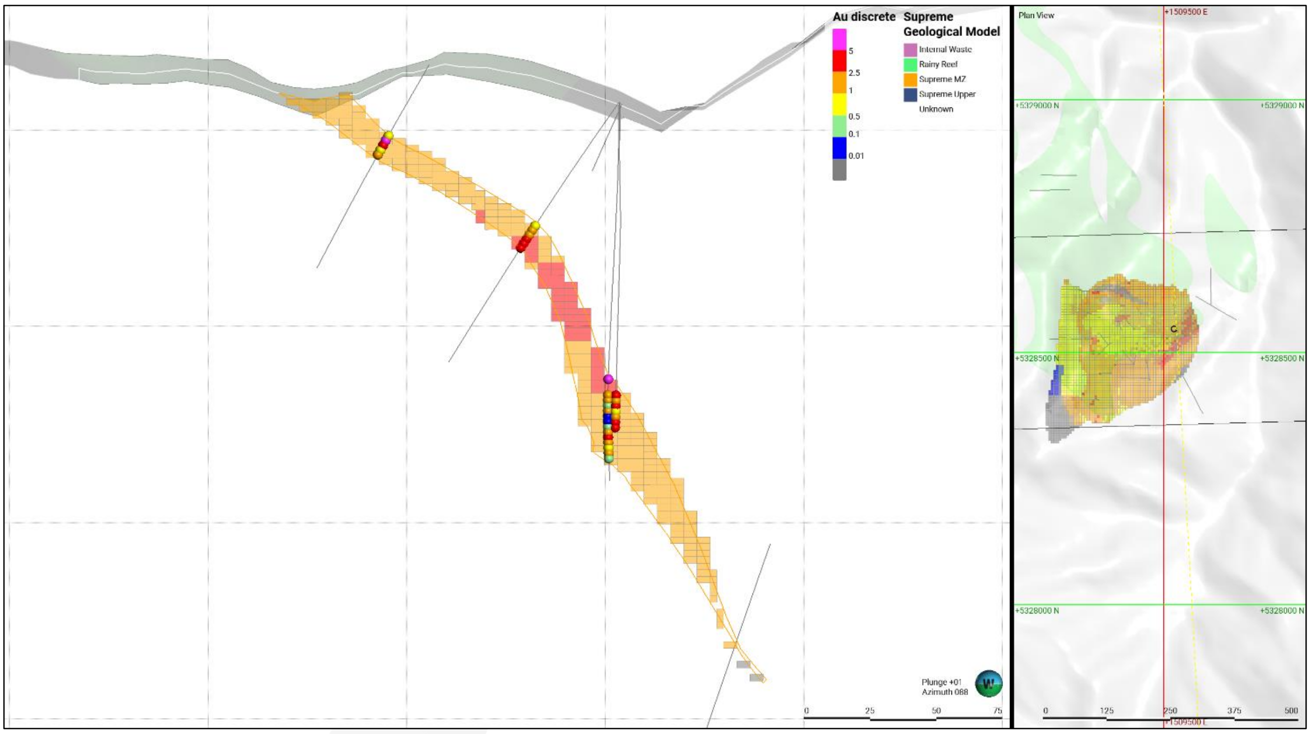


Figure 14-69: Supreme section and plan views of the estimated block model Au and 2-m Au composite (looking east).

14.4.8 Sensitivity Testing

Five methods were used to assess the sensitivity of the OK estimate to the input parameters.

1. Adjusting the maximum number of samples in the estimation parameters.
2. Adjusting the search parameters to a percentage of the variogram range.
3. Adjusting the maximum number of samples allowed per drillhole in the estimation parameters.
4. Estimating with 1-m composites using the same estimation parameters with updated variograms and top cuts.
5. Estimating with updated logging for drillhole RDD0023.

14.4.8.1 Estimating with Different Numbers of Samples

KNA was conducted to determine the maximum number of samples per estimate, maximising the SoR and KE while reducing the SumN (Figure 14-70).

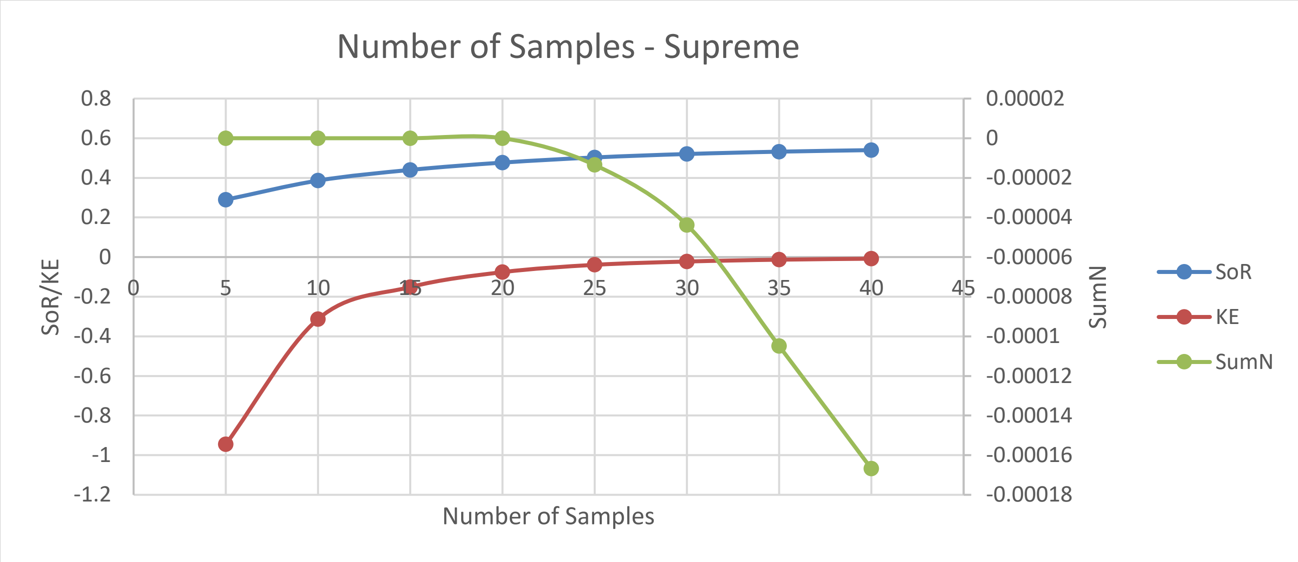


Figure 14-70: Supreme Au: maximum number of samples per estimate.

14.4.8.2 <u>Estimating with Different Ellipsoid Search Ranges</u>

KNA was conducted to determine the optimum search range, maximising the SoR and KE while reducing the SumN (Table 14-56 and Figure 14-71).

Table 14-56: Supreme Au search ranges.

Percentage	Major Search Range (m)	Semi-Major Search Range (m)
100%	170	80
80%	135	65
60%	100	50
40%	70	30

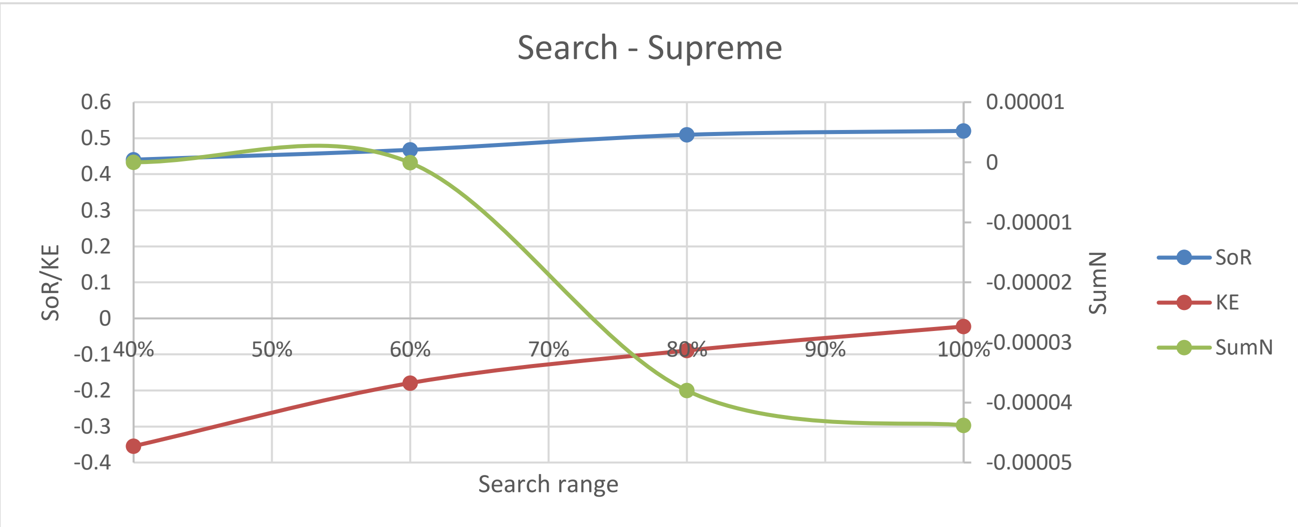


Figure 14-71: Supreme Au search ranges.

14.4.8.3 Estimating with Different Maximum Numbers of Samples Allowed Per Drillhole

The OK estimation sensitivity was tested after first setting the search ranges and maximum number of samples per drillhole. A minimum number of samples of five and a maximum number of samples per drillhole of three required two drillholes per block estimate. Domains with un-estimated blocks required a second pass with no restriction on the maximum number of samples per drillhole and the minimum number of samples per block estimate reduced to two. Blocks estimated in pass two have been left as unclassified and excluded from the reported resource.

14.4.8.4 Estimating Different Composite lengths

The OK estimation of Au was tested using a 1-m sample compositing length, and the final grades were compared for all domains. The comparison resulted in minor changes to the mean grade in the selected estimation domains, demonstrating low sensitivity to compositing selection (Table 14-57).

Table 14-57: Supreme Au sensitivity analysis comparing different compositing lengths.

Domain	1-m Composite Mean Declustered Grade (Au g/t)	2-m Composite Mean Declustered Grade (Au g/t)	Relative Difference (%)
Supreme	2.08	2.09	1
Rainy Reef	1.04	1.01	-3
Supreme Upper	0.81	0.78	-5

14.4.8.5 Estimating with Updated Logging for Drillhole RDD0023

Logging for drillhole RDD0023 was updated from the comments in the original log and core photos from 1 m @ 31.5 g/t with 20% recovery to 0.2 m @ 31.5 g/t with 100% recovery and 0.8 m of void. Re-estimating with the same compositing strategy resulted in 10% lower ounces within the total reported estimate compared to an estimate without top-cuts applied for the Supreme domain. With top-cutting applied, the two estimates reported the same result, and the estimate without updating the original log was used.

14.4.9 Depletion

Although historical mining has taken place in the Supreme deposit, no depleted shells were used by the QP (Abraham Whaanga) because of the low volume removed and uncertainty in the location(s) of the workings. Figure 14-72 illustrates the digitised 3D shapefile of the workings with the Supreme geology model shell.

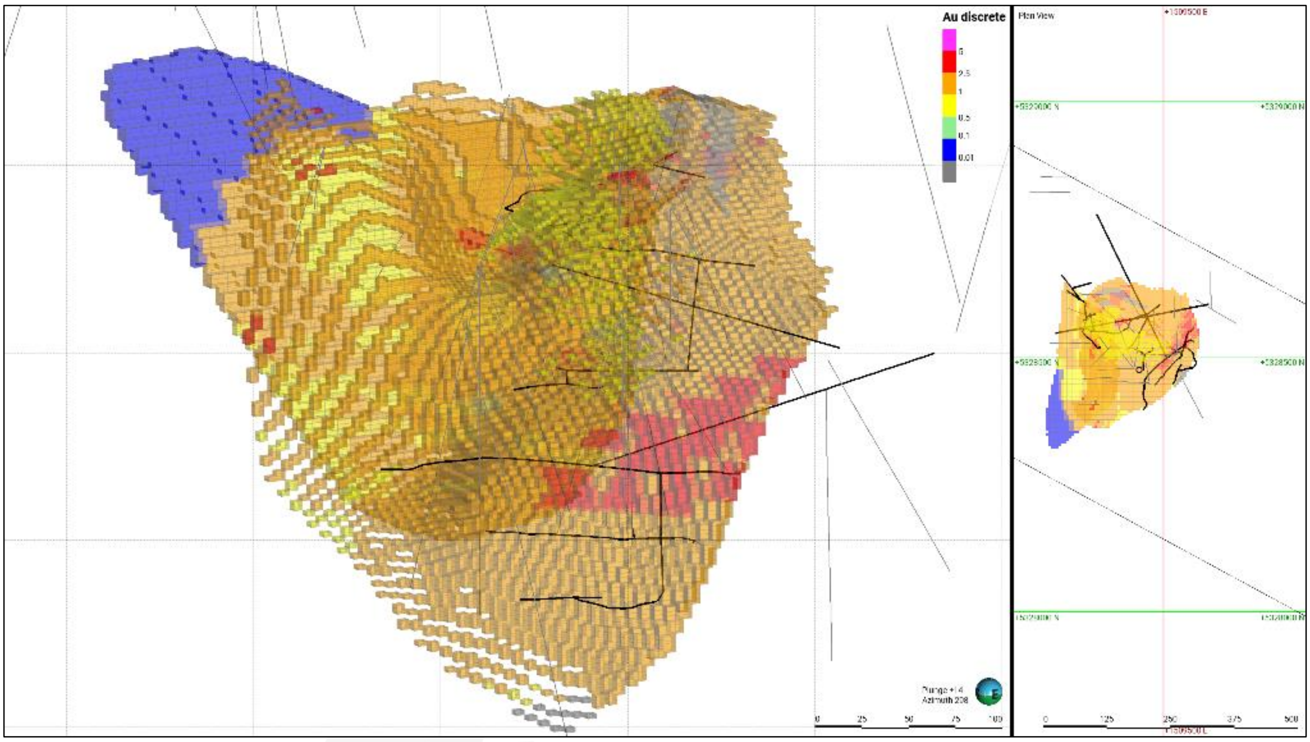


Figure 14-72: Supreme block model illustrating underground workings (black), looking north.

14.4.10 Classification

The QP (Abraham Whaanga) has classified the Mineral Resource in the Inferred Mineral Resource category in accordance with NI 43-101 and the CIM as the CIM Definition Standards on Mineral Resources and Mineral Reserves (May 2014) (Table 14-58). For the Inferred MRE, geological evidence is sufficient to imply but not verify geological and grade continuity. The Mineral Resource is based on exploration, sampling, and assaying information gathered through appropriate techniques from drillholes.

It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration. For the Inferred portion of the MRE, confidence in the estimate is not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning in pre-feasibility or feasibility studies. Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as a scoping study or preliminary economic assessment.

Future work should seek to decrease the drill spacing, improve sample and analytical quality control, and improve the resolution of the Au estimation domains.

Table 14-58: Classified MRE for the Supreme deposit.

Domain	Classification	Tonnes (Mt)	Au (g/t)	Contained Ounces (koz)
Supreme	Inferred	0.4	2.3	30
Total	Inferred	0.4	2.3	30

Notes:

1. *The definitions for Mineral Resources of the Canadian Institute of Mining were followed.*
2. *The Mineral Resource is reported at a cut-off of 2.3 g/t Au.*

3. *The Mineral Resource was assessed for reasonable prospects of eventual economic extraction by re-blocking to a regular 2.5 mW x 2.5 mH x 5 mL minimum block dimension, converting to wireframe solids, and generating minimum mining units, commensurate with the anticipated smallest mining-unit dimensions for a long-hole stoping operation.*
4. *Totals may vary due to rounding.*

14.4.10.1 Cut-Off Grade

A cut-off grade of 2.3 g/t Au was selected for the reporting of the Mineral Resource based on a high-level initial assessment of potential modifying factors. The QP (Abraham Whaanga) completed a high-level initial assessment of various factors solely for the purpose of reasonably assessing the potential for economic extraction of the Mineral Resource. These parameters should not be regarded as assumptions that are at the confidence level required for studies (scoping, pre-feasibility or feasibility). Accordingly, and for the sole purpose of this early-stage assessment, this work assumed:

- a Au price of USD 2,250 per ounce, based on prices during the previous 12 months;
- Au payable of 95% in the concentrate;
- Au recovery of 90% based on recent metallurgical from nearby projects;
- royalty of 2% for Au;
- similar processing costs to Snowy River 2022 (USD 29/t) and Waihi (USD 30/t);
- similar general and administrative costs to Snowy River 2022 (USD 16/t) and Waihi 2021 (USD 18/t), and
- Similar stope and ore-drive costs similar to 2020 Macraes Golden Point UG (USD 43/t), 2022 Snowy River (USD 110/t @ 1,000 tpd), and Waihi (USD 60/t @ 1,500-2,000 tpd).

The cut-off grade USD value was determined using mining and development costs and modifying factors for an anticipated sub-level, long-hole, open-stoping mining method. The QP (Abraham Whaanga) notes that the assumed costs are reasonable and should be considered accurate enough to support an Inferred MRE.

A conceptual mining scenario indicates the Supreme MRE could be exploited via a short access drive (<3 km) from the Soldiers Big River Road. This would also allow efficient bottom-up mining. The entrance to the mine would be 6-8 km from Reefton, where there are existing offices and workshops. A processing plant could be located near to Reefton.

Table 14-59: Conceptual UG mining costs and assumptions used to determine the cut-off grade for Supreme.

Assumptions;	Unit	Price
Gold Price	USD/oz	2,250
Au Payable in Concentrate	%	95
Royalty Au	%	2
Met Rec Au	%	90
Mine Gate Revenue	USD per g/t	60.61
Processing, Grind, and Flotation	USD/t	30
Site G&A	USD/t	20
Stope and Ore Drive	USD/t	75
Total Costs	USD/t	125
Estimated Au g/t COG		2.3

Metallurgical recoveries are based on nearby samples collected from Alexandra River, Big River, and Auld Creek (Siren Gold Limited, 2023b). RRPL noted that the preliminary results indicated total recoveries of 91–93% if processed using POX. Based on the results from these samples and others from Big River, GRES reviewed the process design criteria and proposed the following conceptual processing plant:

- a nominal processing capacity of 1.25 million tonnes per annum, using a design head grade of up to 10 g/t Au to cater for surges of high-grade ore;
- three-stage crushing, with fine ore-bin storage and emergency reclaim;
- a single-stage ball mill, with a flash-flotation cell treating cyclone underflow;
- separate gravity concentrators to treat ball-mill discharge and flash-flotation concentrate to produce Doré output of up to 80% of the Au in the feed, again to handle grade surges;
- gravity plus flotation of ~93%, with an overall recovery estimated at ~90% with POX;
- concentrate dewatering using a thickener and a filter to produce a transportable concentrate;
- appropriate tailings-handling facilities depending on plant location and underground paste fill requirements; and
- STEINERT Ore Sorters to reduce waste from the mining cycle and increase the mill-feed head grade.

The QP (Abraham Whaanga) notes that no metallurgical samples have been collected from the Supreme deposit and recommends that a metallurgical sampling programme is undertaken.

14.4.10.2 RPEEE

In assessing the RPEEE, the QP (Abraham Whaanga) evaluated preliminary mining, metallurgical, and ESG parameters (Section 4.7). The Mineral Resource reported at a cut-off grade of 2.3 g/t Au is a realistic inventory of mineralisation which, under assumed and justifiable technical, economic, and developmental conditions, might, in whole or in part, become economically extractable.

The initial assessment of mining and engineering factors was carried out using a re-blocking approach. RPEEE categories were assigned after re-blocking the model to a regular 2.5 mW x 2.5 mH x 5 mL block size and converting the block centroid extents to wireframe solids, thereby generating MMUs or ‘stopes’. Due to the fixed strike direction and vertical orientation in the block model, in combination with the narrow nature of the ore zones, the MMUs are regarded as being analogous to inclined and variable-strike sub-level open-stope wireframes. The re-blocking width is thus equivalent to a minimum mining width of 2 m.

MMUs reporting above a 2.3 g/t Au threshold were flagged as meeting RPEEE (Figure 14-73). RPEEE categories were further assigned to the MMU wireframes by manually identifying areas and regions where the MMUs consistently meet this RPEEE threshold. This resulted in exclusion of isolated high-grade blocks and zones considered too deep or too far from other zones of mineralisation to be reasonably expected to be economically extractable. MMUs located inside or close to modelled historical workings were also excluded, while some with grades between 1.6 and 2.3 g/t Au and located between wide zones of higher grade were included.

The QP (Abraham Whaanga) notes there are no known factors related to environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other issues that could materially affect the mineral resource estimates.

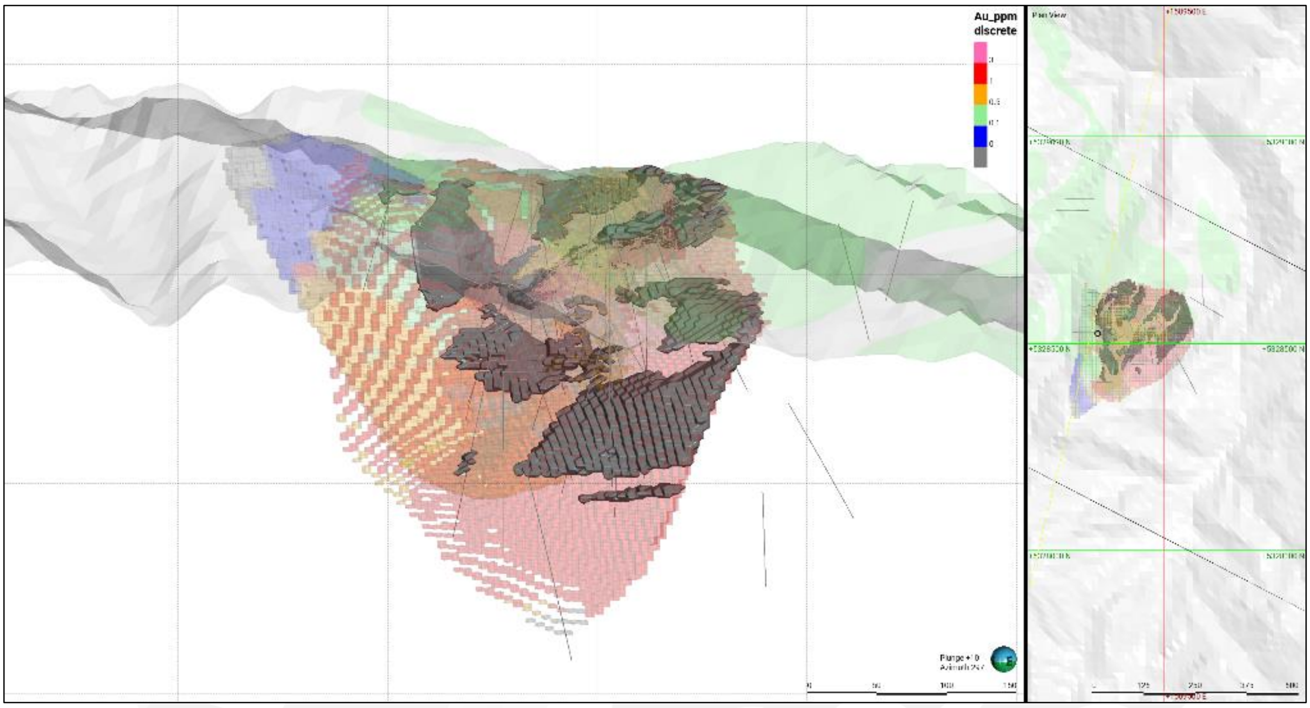


Figure 14-73: Supreme, with the 2.3-g/t reported volume illustrated in grey.

14.4.10.3 Comparison With Historical Estimate

The current MRE for Supreme is 61% lower on mass, 16% lower on Au grade, and 71% lower on Au ounces compared with the Supreme historical estimate disclosed in Section 6.4 of this Report (McCulloch, 2023a).

The likely reasons for the difference are due to:

- The use of a 2.3 g/t Au cut-off and reporting RPEEE within a re-blocked minable shape;
- top-cuts being applied to the Supreme domain to mitigate the logging issue of drillhole RDD0023; and
- less extrapolation when classifying inferred blocks.

14.5 Risks

In line with best practices, the QPs (Sean Aldrich and Abraham Whaanga) undertook a risk assessment for the Project. RSC's risk assessment considers the availability of data and gives a performance scorecard and risk rating (Table 14-60). RSC's risk score matrix is given in Figure 14-74. The risks involved in the modelling and estimations for all prospects are summarised in (Table 14-61). The most pertinent risks have also been noted throughout this report.

Table 14-60: Guide to the rating system used in this report.

Availability of Data	
Absent	Entirely absent
Poor	Incomplete MS Excel/export files

	Briefly described in report
Average	Basic MS Excel/export files
	Briefly described in report
Good	Advanced MS Excel/export files
	Well described in report and supporting appendices available
Excellent	Industry best practice SQL or MS Access database
	Well described and supported by extensive SOPs
Performance Score Card	
0	Complete failure or erroneous
0–3	Largely incorrect
3–5	Largely correct
5–8	Correctly undertaken and industry standard
8–10	Exceeds industry standard and is best practice
Risk Rating	
None	No risk to Mineral Resource or project
Low	Minimal risk to Mineral Resource, Ore Reserves, or project viability, within the ranges of Measured Mineral Resources or Proved Ore Reserves
Moderate	Moderate risk, within the ranges of Indicated Mineral Resources or Probable Ore Reserves
High	Notable or consequential risk, within the range of Inferred Mineral Resources
Extreme	Significant risk to Mineral Resource, ranges of error could prevent the classification of Mineral Resources or result in a non-viable project

			Impact Score				
	Score	**Risk***	**1**	**2**	**3**	**4**	**5**
Performance Score	**10**	**1**	1	2	3	4	5
	9	**2**	2	4	6	8	10
	8	**3**	3	6	9	12	15
	7	**4**	4	8	12	16	20
	6	**5**	5	10	15	20	25
	5	**6**	6	12	18	24	30
	4	**7**	7	14	21	28	35
	3	**8**	8	16	24	32	40
	2	**9**	9	18	27	36	45
	1	**10**	10	20	30	40	50

Combined Score	0-12.5	12.5-25	25-37.5	37.5-50
Risk Rating	Low	Moderate	High	Extreme

* Performance Risk is the inverse of the Performance Score

Figure 14-74: RSC's risk score matrix.

Table 14-61: Overview of risk factors impacting the MREs.

Item	Data/Info Availability	Score (1–10)	Impact Factor (1–5)	Risk Factor	Comments
Database Format	Average	5	3	Moderate	The project does not have a centralised database, and data were collated by RRPL geologists from digital drillhole logging files into Excel. Data collected by RRPL were comprehensive and semi-validated at the point of collection. Checks completed by the QP (Sean Aldrich) uncovered several errors in the Excel workbooks provided by RRPL, which were corrected. The QP (Sean Aldrich) recommends that all data for the Project is moved from the Excel workbooks into a modern and secure database before any further drilling is undertaken.
Drilling and Primary Sampling Techniques	Good	8	1	Low	Sampling was nominally 1 m; composite widths were adjusted for veins and contacts. Drilling was a mixture of PQ, HQ, and NQ, all using triple-tube techniques. An SOP detailing the drilling of diamond core was available for review. The SOP briefly covered aspects of logistics, preparation, safety around the drilling campaign, downhole surveying, and core recovery. However, it did not note the minimum recovery required or provide guidance for dealing with low recoveries.
Drilling and Primary Sampling Recovery	Good	8	1	Low	DD sample recovery averaged ~95% across the projects and core sizes. No correlation between recovery and grade.
Logging	Good	6	2	Low	The QP (Sean Aldrich) inspected RRPL drill core for Alexandrer River, Auld Creek, Big River, and Supreme. The QP (Sean Aldrich) visually inspected the core and noted the lithologies. Only minor variations were noted. A logging SOP was available for review. Logging detail was comprehensive and at a level of detail that provided good-quality geological domains. The QP (Sean Aldrich) recommends updating the logging procedure and integrating it into a data management system.
Subsampling Techniques and Sample Preparation	Average	5	3	Moderate	An SOP regarding the first split of diamond core was available to review and stated that core was sampled along 1-m intervals, except in zones of distinct mineralisation. The SOP stated core should be cut perpendicular to features of interest, and where these features were absent, core should be cut perpendicular to the rock fabric. During the site visit, the QP (Sean Aldrich) reviewed sections of cut core, which indicated the SOP was followed. However, the QP (Sean Aldrich) notes it is best practice to mark and cut core along the orientation line (or a few degrees off it to preserve the line), and it is important to always sample the same half of the core to ensure no sampling bias is introduced. Based on the SOP and observations made by the QP (Sean Aldrich), the QP (Sean Aldrich) considers that the first splitting process poses a moderate risk with respect to the DQO. The QP (Sean Aldrich) recommends changes are made to the core-cutting procedures at the Project to minimise the risk of introducing selection bias. No second-split duplicates of core samples were collected. The QP (Sean Aldrich) recommends collecting second-split repeat samples for any future resource delineation drilling programmes. The QP (Sean Aldrich) recommends that the subsampling SOP is updated and includes detailing the

Item	Data/Info Availability	Score (1-10)	Impact Factor (1-5)	Risk Factor	Comments
					process for integration the data into a data management system.
Quality of Assay Data and Laboratory Tests	Average	5	2	Low to moderate	RRPL inserted Rocklabs CRMs. While the CRM are mostly accurate and precise, the QP (Sean Aldrich) notes that the CRMs were not matrix matched with the rock type and mineralisation. Future CRMs should be sourced from similar metasediments with elevated Sb and As, or the project can consider making a CRM from mineralised samples. The QP (Sean Aldrich) recommends that the analytical SOP is updated and details the process for integrating the data into a data management system.
Verification of Sampling and Assaying	Good	7	2	Low	RRPL did not conduct umpire assays. During the site visit, the QP (Sean Aldrich) collected a representative number of check samples from Alexander River, Big River, Auld Creek, and Supreme to verify mineralisation and grade tenure. The QP (Sean Aldrich) collected a total of 216 check samples (mix of half-core and pulp samples). The Au samples demonstrate an exact bias towards the original sample that is likely to be in the order of 4%, which falls within the realms of the DQO.
Location of Data Points	Good	6	2	Low	There was no SOP for collar set out, pickup, or downhole surveying. Collars have been picked up using DGPS and downhole survey tools. Collar heights have been adjusted onto a LiDAR surface. The QP (Sean Aldrich) notes some data management issues with some of the location data provided, these were noted, adjusted, and changed. The QP (Sean Aldrich) recommends that a collar-location SOP is developed, detailing the process for integrating the data into a data management system.
Data Spacing and Distribution	Good	6	3	Moderate	Due to DOC consent restrictions, numerous drillholes were often drilled from one pad resulting in inconsistent data spacing. However, the QP (Sean Aldrich) notes that the drillhole spacing is appropriate to assume and infer the geological and grade continuity for the classification of Inferred Mineral Resources.
Bulk Density	Good	5	2	Low	An SOP for bulk density was available for review. The SOP confused SG with bulk density; however, the procedure undertaken was consistent with the water displacement method described by Lipton and Horton (2014). The QP (Sean Aldrich) also recommends collecting duplicate measurements. The method used by RRPL was also prone to selection bias, and the QP (Sean Aldrich) recommends collection of larger cores with defects and trying alternative methods.
Orientation of Data/Drilling	Good	4	2	Moderate	Due to DOC consent restrictions, numerous drillholes were often drilled from one pad. This resulted in many drillholes intersecting the mineralisation at high angles. While the QP (Sean Aldrich) recommends optimising the drill pattern for the reef orientation where possible, it is unlikely that this risk can be mitigated.
Sample Security	Average	5	1	Low	An SOP for the security or chain of custody was not available.

Item	Data/Info Availability	Score (1–10)	Impact Factor (1–5)	Risk Factor	Comments
					Samples collected for laboratory analysis were securely packaged on-site and transported to SGS Westport for sample preparation. All samples were stored in a locked core shed until dispatch.
Database Integrity	Average	5	3	Moderate	The Project did not have a centralised database. Data were provided via a series of Excel files. This made validating and querying data difficult and time-consuming. Where errors in the Excel workbooks were noted by the QP (Sean Aldrich), they were communicated to RRPL and corrected. As noted above, the QP (Sean Aldrich) recommends that the Project develops a centralised database management system.
Geological Interpretation	Good	7	3	Moderate	Geological logging plus surface observations from outcrops and trenching were used to develop the geological model. The measured vein and reef orientations near the surface and orientation of historical workings at depth provide an understanding of mineralisation control. Subsequent drilling has provided detailed core logging to support the continuing understanding of the mineralisation at depth. In general, the mineralisation can be visually logged as veins, faults, and breccias surrounded by broad zones of disseminated arsenopyrite and stibnite. Logging was supported by pXRF to help confirm mineralised and unmineralised zones.
Estimation and Modelling: Domaining	Good	6	4	Moderate	The estimation domains are considered robust, being based on geological observations that align with the understanding of controls on mineralisation. In general, the CVs were below 2; however the CVs were high in one domain at Alexander River and several at Auld Creek. This was managed by top-cutting the high grade at Alexander River and indicator kriging at Auld Creek for the Sb estimate.
Estimation and Modelling: Compositing	Good	7	2	Low	A composite length of 2 m was selected owing to the high angle at which the drilling intersects the mineralisation in many domains. This offers an acceptable compromise between capturing the desired precision of the geological and estimation domain modelling and matching the likely selectivity of the UG operation.
Estimation and Modelling: Grade Capping	Excellent	7	2	Low	Most domains had no top-cuts. Top-cuts were applied for the McVicar West (30 g/t Au), Loftus-Mckay (25 g/t Au), Shoot 4 lower (24 g/t Au), Shoot 4 Upper (12 g/t), Shoot A2 (7 g/t), and Supreme (10 g/t) domains to limit the influence of extreme values on the estimate.
Estimation and Modelling: Variography	Excellent	7	2	Low	Experimental and modelled variograms display satisfactory structure and an acceptable level of confidence for the estimation of Inferred Mineral Resources.
Estimation and Modelling: Interpolation and Extrapolation	Excellent	7	3	Low to Moderate	Grades were estimated using ordinary kriging and validated against nearest neighbour and inverse distance estimation methods. Sensitivity testing indicated the estimation was not sensitive to the number of samples, variogram models, or compositing length. Extrapolation is typically 50% of the drillhole spacing laterally, and the QP (Abraham Whaanga) considers the extrapolation distance reasonable.

Item	Data/Info Availability	Score (1–10)	Impact Factor (1–5)	Risk Factor	Comments
Estimation and Modelling: Checks and Validation	Excellent	7	3	Low to Moderate	The QP (Abraham Whaanga) considers the block models to be robustly estimated, based on a comparison of input mean grades with the block model mean grade using swath plots and visually on cross-sections.
Estimation and Modelling: Cut-Off	Good	8	4	Low to Moderate	Cut-off grades between 2.0 and 2.1 g/t Au (Alexander River, Big River, and Supreme) and 2.3 g/t AuEq (Auld Creek) were selected for the reporting of the Mineral Resource based on a high-level initial assessment of potential modifying factors.
Estimation and Modelling: Density	Average	6	2	Low	Bulk density assessments were conducted based on drilling in Big River, Alexander River, and Auld Creek. No data were available for Supreme. The procedure was consistent with the water displacement method described by Lipton and Horton (2014). The metasediment host and mineralisation style results in a narrow bulk density range for the prospects (2.65–2.75 g/cm3). Estimations were completed using an RBF interpolant rather than OK due to the widely spaced clustered data.
Estimation and Modelling: Classification	Good	8	4	Low to Moderate	The wide drill spacing, assumed continuity of mineralisation, and indications of a sample selection bias samples have limited the Mineral Resource from being classified at a higher level of confidence at the time of reporting. None of the material has been classified as Indicated or Measured. A cut-off grade was selected for the reporting of the Mineral Resources based on a high-level initial assessment of potential modifying factors. The assessment of RPEEE was carried out using a re-blocking approach. RPEEE categories were assigned after re-blocking the model to regular minimum mining units.

23. Adjacent Properties

There are numerous active permits adjacent to the Project area. These permits include coal, building material, and non-metal and/or metal mineral groups and range from small, privately owned prospecting permits to larger, company-owned mining permits. There are three significant hard-rock Au properties in the Buller region: Federation Mining's Snowy River Project, the RUA Reefton Project, and the Reefton Restoration Project, which involves rehabilitation of the Globe Progress Mine.

The QP (Sean Aldrich) has not verified the scientific and technical information related to the adjacent properties discussed in Sections 1 to 23.2, and this information is not necessarily indicative of the mineralisation potential at the Reefton Project.

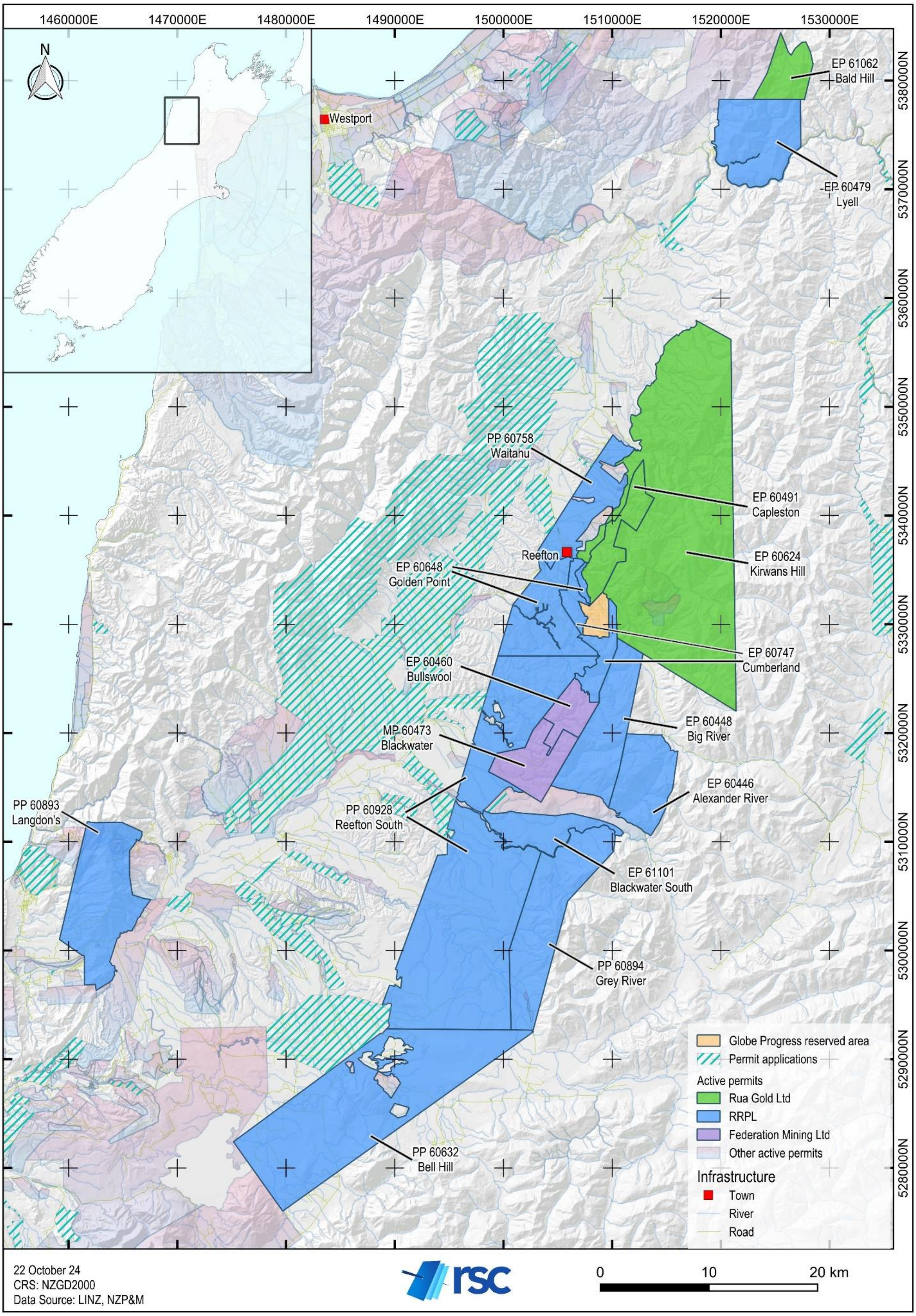


Figure 23-1: Significant properties in the Reefton area.

23.1 Federation Mining: Snowy River (Blackwater) Project

In January 2024, Federation Mining agreed to exercise the option to buy the Snowy River Mine Project (formerly the Blackwater Mine) asset from OGL. The project is located 20 km south of Reefton (Figure 5-1), and Federation Mining's objective is to establish an underground mine at the site. Construction of two 3.3-km twin declines is complete and will provide a site for underground drilling. OGL previously reported an Inferred Mineral Resource of 700,000 oz Au, although no cut-off grade was applied (Table 23-1) (Madambi and Moore, 2013; Federation Mining, 2022). A 20-year mining permit has been granted, and the company aims to start mining in 2024, with a 10-year mine life.

Table 23-1: Mineral Resources reported at Snowy River (Federation Mining, 2022).

Company	Project	Classification	Cut-off (g/t)	Ore (Mt)	Au Grade (g/t)	Au (koz)
OGL	Snowy River	Inferred	Not reported	0.9	23.0	700

Required disclosure under Section 2.4 of NI 43-101 (Disclosure of Historical Estimates)

- The 2022 Snowy River historical estimate was reported in accordance with the JORC Code (JORC Code, 2012) and included in a Competent Person's report with an effective date of 30 September 2022 (Federation Mining, 2022).
- The 2022 Snowy River historical estimate is considered reliable and relevant by the QP (Abraham Whaanga), as it was the maiden resource estimate for the Snowy River prospect.
- The 2022 Snowy River historical estimate was not reported at a cut-off and was geologically constrained.
- The 2022 Snowy River historical estimate uses similar categories to those set out in section 1.2 of NI 43-101 but was classified using the JORC Code (2012), in which resource classifications are similar to the resource classifications under the CIM Definition Standards (May 2014).
- The QP (Abraham Whaanga) has not done sufficient work to classify the 2022 Snowy River historical estimate as current mineral resources, and RUA is not treating the historical estimate as current mineral resources. The purpose of stating this historical estimate in the Report is to fully disclose nearby historical estimates.
- The QP (Abraham Whaanga) is not aware of any other recent historical estimates for the Snowy River prospect.

23.2 Globe Progress: Reefton Restoration Project

The former Globe Progress Mine is located 7 km southeast of the Reefton township, adjacent to the Cumberland and Golden Point permits (Figure 5-1). Commercial operations commenced in 2007, producing 610,000 oz Au over the eight-year life of the open-pit operation. The mine transitioned from operation to closure and rehabilitation in 2016 and is now known as the Reefton Restoration Project. Restoration has included a comprehensive closure and rehabilitation program, with works involving:

- removal of the processing plant and infrastructure;
- water treatment;
- waste-rock reshaping and landscaping; and
- spreading topsoil and planting trees.

The Globe Progress Mine is the first modern large-scale Au mine in the South Island of New Zealand to move into closure.

24. Other Relevant Data & Information

There are no other known relevant data or information other than those presented in this Report.

25. Interpretation & Conclusions

The Project comprises four PPs and seven EPs, all of which are held by RRPL, which is now a wholly owned NZ subsidiary of RUA. As of the effective date of this Report, RGL has not undertaken any exploration work on the Project, other than that conducted by the QPs (SA, AW).

Previous exploration work includes stream sampling, soil sampling, mapping, geophysical surveys, trenching, 3D modelling, and diamond drilling. Extensive diamond drilling was undertaken by RRPL at Alexander River, Auld Creek, and Big River. OGL also undertook diamond drilling on these prospects, plus Supreme. RRPL completed a number of historical estimates (Alexander River, Auld Creek, Big River, and Supreme). In addition to this work, RRPL has conducted initial metallurgical test work that indicates the potential for >90% Au and Sb recoveries.

The QP (Sean Aldrich) has visited the sites, collected validation samples, reviewed the SOPs, and independently assessed the QC for diamond core sampling. Based on this review, the QP (Sean Aldrich) considers the historical and recent exploration programmes including sampling, preparation, and analytical data to be fit for the purposes of estimating MREs for the Project.

The QP (Abraham Whaanga) has classified all of the MREs (Alexander River, Auld Creek, Big River, and Supreme) in the Inferred category in accordance with NI 43-101 and the CIM. For the Inferred MREs, geological evidence is sufficient to imply but not verify geological and grade continuity. The Mineral Resource is based on exploration, sampling, and assaying information gathered from drillholes using appropriate techniques. In assessing the RPEEE, the QP (Abraham Whaanga) evaluated preliminary mining, metallurgical, and environmental parameters. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

Uncertainties and risks related to informing data, modelling, and resource estimations are discussed in detail in Section 14.5. One of the key risks is that the Project does not have a centralised database, and data were collated by RRPL geologists from digital drillhole logging files into Excel. The QP (Sean Aldrich) recommends that all data for the Project are moved from the Excel workbooks into a modern and secure database before any further drilling is undertaken. The QP (Sean Aldrich) recommends changes are made to the core-cutting procedures to minimise the risk of introducing first-split selection bias, and second-split duplicates of core samples should be collected in any future resource delineation drilling programmes. CRMs were not matrix matched with the rock type and mineralisation. Future CRMs should be sourced from similar metasediments with elevated Sb and As. There is additional geological uncertainty in places due to many drillholes intersecting the mineralisation at high angles and inconsistent data spacing.

26. Recommendations

A subsequent programme of works is recommended by the QP (Sean Aldrich). In addition, the QP (Sean Aldrich) makes the following recommendations.

Data Management

1. Move all drilling data (collar, survey, assay, lithology, bulk density, recovery, geotechnical, etc.) from Excel workbooks to a secure database before any further drilling is undertaken.
2. All QC data, including duplicate measurements (e.g. from soil sampling, trenching, drilling, bulk density, and pXRF analysis) should be collected to allow quantitative assessment of data quality.
3. Undertake a full core-shed sample and core inventory.

Quality Assurance

Soil:

1. Revise the soil sampling SOP to provide specific instructions.
2. Develop an SOP for ionic leach sampling that is specific to RRPL, including only relevant information and instructions.

Drilling:

1. Revise the drilling SOP to clearly document the procedure to be followed in the event of poor core recovery, including guidelines on what is considered acceptable recovery.
2. All core sizes (PQ, HQ, and NQ) were half-core sampled. The QP (Sean Aldrich) recommends updating the SOP to include different procedures for cores with different diameters. NQ core should be sampled in full, rather than half core.
3. Mark all core with an orientation line and cut core a few degrees off the line to preserve it. Always collect the same half of the core to reduce sample selection bias.
4. Update the core logging SOP (*RRL_SWP Core logging_draft)* to include regular check logging to ensure consistency of logging between geologists.
5. Create an SOP covering sample transport and chain-of-custody details to fully capture the process once drilling details and logistics have been confirmed.

pXRF:

1. Update the pXRF SOP to include instructions on reviewing the QC data including calibrating the PXRF data using the CRM results.

Quality Control

Bulk Density:

1. Collect duplicate bulk density measurements.
2. When selecting bulk density samples, select core samples with a range of defects, and alternative methods should be tested.

Drilling/Sampling:

1. Collect repeat GPS measurements for all collars and trench locations in order to assess the quality of the location data.
2. Resurvey all drillholes for drill-pad 14 at Auld Creek using DGPS.
3. Resurvey trench locations using DGPS.
4. Supreme drill collars should be located, and core should be located and relogged where possible.
5. Collect second-split (coarse crush) repeat samples for any future resource delineation drilling programmes from the same samples used for core-split duplicates.
6. For pulp samples, the QP (Sean Aldrich) recommends instructing the relevant laboratory to homogenise samples before collecting subsamples to avoid bias caused by settling during storage and transport.
7. Undertake further investigation to identify the source of the bias in core and pulp check sample analyses.

Analytical

1. Analyse all intervals of interest for Sb using multielement laboratory methods.
2. Calibrate all pXRF data based on the CRM results.
3. Source new, matrix-matched CRMs.

Other

1. For Sb at Auld Creek, the QP (Abraham Whaanga) recommends reviewing the two estimation domains containing high- and low-grade populations and determining if two geological domains can be defined.
2. The QP (Abraham Whaanga) notes that no metallurgical samples have been collected from the Supreme deposit and recommends that a metallurgical sampling programme is undertaken.

26.1 Phase 1

Following the review of historical and recent exploration undertaken in the Project, the QP (Sean Aldrich) recommends a staged and success-driven exploration programme.

26.1.1 Exploration Target Interpretation

The QP (Sean Aldrich) recommends undertaking a targeting programme over the Project. This work will require a comprehensive process of data compilation, data processing, and the creation of new interpretations and exploration targets for the Project area. Using a mineral systems approach, coupled with new datasets and new processing technology associated with those datasets, RGL plans to conduct an AI (artificial intelligence) system of machine learning using the VRIFY AI targeting process to provide new insights and potential new exploration targets which will be prioritised on potential and confidence, to inform the exploration program. This phase of work will require the compilation of all existing geological data in a Project-wide database and GIS workspace. This phase will also fulfil a number of CMA permit obligations, such as data compilation and targeting.

26.1.2 Geophysical Surveys

RGL has its own proprietary ultra-detailed magnetic surveying equipment (the UAV-based MagArrow system) that it plans to use extensively to assist in structural interpretation associated with specific target areas. The magnetic surveying will also fulfil the geophysical component of the CMA permit obligations across all the permits.

26.1.3 Drilling

In addition to the development of a broader exploration approach assessing the whole of the southern portion of the Reefton Goldfield using the VRIFY AI-assisted systems approach to target development, several important resource evaluations are standout targets for immediate modelling and further drilling.

Using the MRE evaluations completed on Alexander River, Big River, Auld Creek, and Supreme, RGL plans to carry out additional comprehensive geological modelling of Auld Creek and Alexander River, with the plan to re-commence drilling at Auld Creek being a priority. Following additional surface mapping, surface geochemistry, and modelling of Alexander River, RGL should consider detailed infill drilling on the high-grade lodes, as well as testing southerly extensions of the system.

The Cumberland area, south of the Globe Progress mine, which includes the Supreme MRE, also warrants immediate evaluation. This area will require comprehensive data re-evaluation and immediate surface exploration to expand the surface soil geochemistry, rock sampling, and trenching, with additional structural mapping to consolidate data from numerous sources. UAV ultra-detailed magnetic surveying will assist in this process, as the regional magnetic data suggest a significant number of mafic intrusives may play an important structural role in mineralisation.

Drilling on the Supreme-Cumberland system is planned for early 2025 to meet the CMA permit obligations.

26.1.4 Regional Exploration

On completion of the mineral systems evaluation and targeting of the whole Project area, assisted by the VRIFY AI targeting; a comprehensive surface geochemical and field geological mapping program is envisaged to bring additional opportunities to the table to provide a pipeline of exploration targets for modelling and drilling. This work will fulfil the CMA work program obligations in the 2025 exploration program.

26.2 Phase 2

The Phase 2 exploration programmes will be dependent on the exploration success of the Phase 1 programmes. The QP (Sean Aldrich) notes that the bulk of the Phase 2 expenditure will be associated with the diamond drilling in and around known MREs. The timing of these programmes will vary based on exploration success and consenting for access.

26.3 Budget

The QP's (Sean Aldrich) recommended budget and exploration tasks for the Phase 1 and 2 exploration programmes are presented in Table 26-1. Estimated costs are in Canadian dollars (CAD).

Table 26-1: Proposed exploration budget (CAD) for Phase 1 and 2 expenditures.

Category	Phase	Exploration Task	Estimated Cost (CAD)
Prospecting and Exploration Expenditures	1	Targeting and Data Compilation	90,000
	1	Mapping	110,000
	1	Geochemistry	93,000
	1	Geophysics	89,000
	1	Drilling	1,705,500
Other Expenditures	1	Consenting	160,000
	1	Administration	287,000
	1	Corporate	115,000
Total Phase 1			2,649,500
Prospecting and Exploration Expenditures	2	Data Compilation	38,000
	2	Mapping	92,000
	2	Geochemistry	148,000
	2	Geophysics	42,000
	2	Drilling	2,200,000
Other Expenditures	2	Consenting	184,000
	2	Administration	287,000
	2	Corporate	81,000
Total Phase 2			3,072,000

27. References

Abraham, P., 1995. PL 31-2172, Capleston – Final report on Prospecting Activities, 1989–1995. *Macraes Mining Co Ltd*, **MR3406**.

Adams, C., 2004. Rb-Sr age and strontium isotope characteristics of the Greenland Group, Buller Terrane, New Zealand, and correlations at the East Gondwanaland margin. *New Zealand Journal of Geology and Geophysics*, **47**, 189–200.

Adams, C. J. D. & Nathan, S., 1978. Cretaceous chronology of the Lower Buller Valley, South Island, New Zealand. *New Zealand Journal of Geology and Geophysics*, **21**, 455-462.

Aliprantis, M., 1988. Progress report on PL 31-1320 Langdons Creek, Stillwater, Westland, to 15 April 1988. *Tasman Gold Development Ltd*, **MR1528**.

Allibone, A., 2010. Geological setting and prospectivity of the Crushington and Capleston areas. *OceanaGold (NZ) Ltd*.

Allibone, A., Blakemore, H., Gane, J., Moore, J., MacKenzie, D. & Craw, D., 2018. Contrasting Structural Styles of Orogenic Gold Deposits, Reefton Goldfield, New Zealand. *Economic Geology*, **113**, 1479-1497.

Allibone, A., Blakemore, H., Jongens, R., Scott, J., Moore, J., MacKenzie, D. & Craw, D., 2020. Structural settings of gold deposits within the Reefton goldfield, western New Zealand. *New Zealand Journal of Geology and Geophysics*, **63**, 342-362.

Allibone, A., Jones, P., Petrie, H., Moore, J., Mustard, R. & Brooker, M., 2012. Targeting gold deposits on the Hyde-Macraes Shear Zone, East Otago. *OceanaGold Ltd*.

Barry, J. M., 1993. The history and mineral resources of the Reefton Goldfield. *Ministry of Commerce*, **15**.

-, 1996. Mining history and geology of the Alpine Reef, Lyell Goldfield. *Proceedings of the 29th annual conference of the Australasian Institute of Mining and Metallurgy*, New Zealand, AusIMM, 3-46.

Bassett, K., Ettmuller, F. & Bernet, M., 2006. Provenance analysis of the Paparoa and Brunner Coal Measures using integrated SEM-cathodoluminescence and optical microscopy. *New Zealand Journal of Geology and Geophysics*, **49**, 241-254.

Begg, J. & Foster, J. T., 1983. Report on prospecting results for 12 months to October 1982, Reefton Goldfield. *CRA Exploration Co Ltd*, **MR1384**.

Bierlein, F., Christie, A. & Smith, P. K., 2004. A comparison of orogenic gold mineralisation in central Victoria (AUS), western South Island (NZ) and Nova Scotia (CAN): Implications for variations in the endowment of Palaeozoic metamorphic terrains. *Ore Geology Reviews*, **25**, 125-168.

Bierlein, F. P. & Maher, S., 2001. Orogenic disseminated gold in phanerozoic fold belts—examples from Victoria, Australia and elsewhere. *Ore Geology Reviews*, **18**, 113-148.

Bolitho, W. J., 1930. Report on the Bell Hill Reefing Area. *Department of Labour Report*, **MR2854**.

Christie, A., Barker, R. G. & Brathwaite, R., 2010. Mineral resource assessment of the West Coast region, New Zealand, GNS Science Lower Hutt, New Zealand.

Christie, A. B. & Brathwaite, R. L., 2003. Hydrothermal alteration in metasedimentary rock-hosted orogenic gold deposits, Reefton goldfield, South Island, New Zealand. *Mineralium Deposita*, **38**, 87-107.

Christie, T. & Brathwaite, B., 1992. Mineral Commodity Report 2 — Antimony. *GNS Science*, https://www.nzpam.govt.nz/assets/Uploads/doing-business/mineral-potential/antimony.pdf [accessed on 9/8/2024].

-, 1999. Mineral commodity report 19-beryllium, gallium, lithium, magnesium, uranium and zirconium.

Comeskey, B., 2011. Exploration activity report for Capleston EP 50438 – March to September 2011. *OceanaGold (NZ) Ltd*, **MR4777**.

Cooper, R. & Tulloch, A., 1992. Early Palaeozoic terranes in New Zealand and their relationship to the Lachlan Fold Belt. *Tectonophysics*, **214**, 129–144.

Cooper, R. A., 1989. Early Paleozoic terranes of New Zealand. *Journal of the Royal Society of New Zealand*, **19**, 73-112.

Corner, N. G., 1987. Final report on PL 31 860 (Larry River) and PL 31 861 (Waitahu River), Reefton Goldfield, New Zealand. *CRA Exploration Co Ltd*, **MR1503**.

-, 1990. Progress report to December 1989 on exploration at Specimen Hill in Prospecting Licence 31-2172, Reefton Goldfield, New Zealand. *CRA Exploration Co Ltd*, **MR2842**.

Cotton, R. J. & Stewart, M., 1989. Final report Langdons reefs area, PL 31-1320, PLA 31-1848 Grey Valley, Westland. *Tasman Gold Development Ltd*, **MR2589**.

Cox, S., Wall, V., Etheridge, M. & Potter, T., 1991. Deformational and metamorphic processes in the formation of mesothermal vein-hosted gold deposits—examples from the Lachlan Fold Belt in central Victoria, Australia. *Ore geology reviews*, **6**, 391–423.

Craven, B., 1996. Reefton Project Aeromagnetic Interpretation. *Macraes Mining Company Ltd*, **Unpublished internal report for MMCL**.

Dominy, S., Annels, A. E., Johansen, G. & Cuffley, B., 2000. General considerations of sampling and assaying in a coarse gold environment. *Applied Earth Science : IMM Transactions section B*, **109**, 145-167.

Downey, J. F., 1928. Quartz Reefs of the West Coast. Wellington, New Zealand Government Printer, p. 160.

Dunphy, M. C., 1998. 1998 West Inkerman Prospect Manual Polygonal Resource Estimate (WIEX98a). *Macraes Mining Co Ltd*, **MR3883**.

Edwards, P., 2020. MP41 164 Globe-Progress relinquishment report. *OceanaGold (NZ) Ltd*, **MR5742**.

Erceg, M. & Barnes, C., 1982. Final report on the Croesus area, Westland, New Zealand prospecting licence 31813. *Amoco Minerals NZ Ltd*, **MR1367**.

Federation Mining, 2022. Internal Technical Report for the Snowy River Gold Project. *Federation Mining*, **Unpublished company report**.

Finlayson, A. M., 1909. The Geology of the Reefton Gold-veins. *Transactions of the New Zealand Institute*, **41**, 85–89.

Fisher, L., Gazley, M. F., Baensch, A., Barnes, S. J., Cleverley, J. & Duclaux, G., 2014. Resolution of geochemical and lithostratigraphic complexity: a workflow for application of portable X-ray fluorescence to mineral exploration. *Geochemistry: Exploration, Environment, Analysis*, **14**, 149–159.

Fyfe, W. S. & Henley, R. W., 1973. Some thoughts on chemical transport processes with particular reference to gold. *Minerals Science and Engineering*, **5**, 295-303.

Gaboury, D., 2019. Parameters for the formation of orogenic gold deposits. *Applied Earth Science: Transactions of the Institute of Mining and Metallurgy*, **128**, 124–133.

Gage, M., 1948. The geology of the Reefton quartz lodes. *New Zealand Department of Scientific and Industrial Research*, **42**.

Gardener, T., 2013. EP 50438 Capleston technical report – 2013. *OceanaGold (NZ) Ltd*, **MR5028**.

Gazley, M. & Fisher, L., 2014. A review of the reliability and validity of portable X-ray fluorescence spectrometry (pXRF) data. *Mineral resource and ore reserve estimation–The AusIMM guide to good practice*, **69**, 82.

GDR Macraes, 2001. Technical Report EP 40183 Reefton North. *GRD Macraes Limited*, **MR3885**.

Giejsztowt, J., Richards, L., Henry, B., Meikle, K. & Smith, D., 2023. Bat survey of a Proposed Gold Mining Exploration Area at Lyell Prospect, Reefton. *Wildlands, NZ*, **Unpublished report to Reefton Resources Ltd**.

Green, D. C. & Rosengren, P. G., 1984. Report on Reefton Prospecting Licences. PL 31860 Larry River, PL 31861 Waitahu River, PL 31862 Crushington, PL 31863 Merrijigs, PL 31864 Big River, PL 31865 Snowy River, PL 311222 Inglewood, PLA 311245 Alexander River, PL 311247 Auld Creek, PL 311310 Waiuta (Blackwater Gold Ltd JV). *CRA Exploration Ltd*, **12640**.

Grove, C. & Binks, M., 2023. Mineral Resource Estimate, Alexander River Gold Project. *Measured Group Pty Ltd*, **MG1040 Report 001 AO1**, Competent Person: Christopher Grove.

Groves, D. I., 1993. The crustal continuum model for late-Archaean lode-gold deposits of the Yilgarn Block, Western Australia. *Mineralium deposita*, **28**, 366–374.

Groves, D. I., Goldfarb, R. J., Gebre-Mariam, M., Hagemann, S. G. & Robert, F., 1998. Orogenic gold deposits: A proposed classification in the context of their crustal distribution and relationship to other gold deposit types. *Ore Geology Reviews*, **13**, 7-27.

Groves, D. I., Goldfarb, R. J., Robert, F. o. & Hart, C. J. R., 2003. Gold Deposits in Metamorphic Belts: Overview of Current Understanding, Outstanding Problems, Future Research, and Exploration Significance. *Economic Geology*, **98**, 1-29.

Hamisi, J., MacKenzie, D., Pitcairn, I., Blakemore, H., Zack, T. & Craw, D., 2017. Hydrothermal footprint of the Birthday reef, Reefton goldfield, New Zealand. *New Zealand Journal of Geology and Geophysics*, **60**, 59–72.

Hazeldene, R. K., 1993. Reefton Gold Project - Prospecting Licence 31-2530, Report on work completed during first term of the licence. *Macraes Mining Co Ltd*, **MR3242**.

Hector, J., 1879. Progress report, 1878-79. *New Zealand Geological Survey Reports of Geological Explorations*, **12**, 1-41.

Henderson, J., 1917. The geology and mineral resources of the Reefton subdivision: Westport and North Westland divisions. Wellington, New Zealand Geological Survey, p. 298.

Hills, S. H., 2011. EP 40604 Big River Annual Report 2011. *OceanaGold (NZ) Ltd*, **MR4720**.

Jongens, R., Christie, A., Leybourne, M., Timm, C., Smith-Lyttle, G. & Rattenbury, M., 2012. Mineral potential of the Tapuaenuku and Blue Mountain Igneous Complexes, Kaikoura: Desktop studies and Geochemical Survey. *Ministry of Business, Innovation & Employment*, **MR 5062**.

JORC Code, 2012. Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code). http://www.jorc.org

Laird, M. & Shelley, D., 1974. Sedimentation and early tectonic history of the Greenland Group, Reefton, New Zealand. *New Zealand journal of geology and geophysics*, **17**, 839–854.

Lawrence, S. D., 1988. Final report on exploration licence 33-296, Brunner, Buller, New Zealand. *CRA Exploration Co Ltd*, **MR1527**.

-, 1989. Progress report to September 1989 on prospecting licences 31-1222 Inglewood and 31-2174 Murray Creek, Buller, New Zealand. *CRA Exploration Co Ltd*, **MR2623**.

Lew, J. H., 1986. Report on Reefton Goldfield Project - work undertaken 1/8/84 to 31/1/86 - PLs 31-860 to 31-865, 31-1222, 31-1247, 31-1310. *CRA Exploration Co Ltd*, **MR1437**.

-, 1987a. Final report on exploration in Crushington PL 31 862, Reefton, New Zealand, 15/10/81 to 15/10/87. *CRA Exploration Co Ltd*, **14920**.

-, 1987b. Report on Reefton Goldfield Project - work undertaken 1/2/86 to 31/12/86. *CRA Exploration Co Ltd*, **MR1495**.

-, 1988. Final report on exploration in limited impact prospecting licence 30024 Alexander River, Reefton, New Zealand. *CRA Exploration Co Ltd*, **MR1550**.

Lew, J. H. & Agnew, P. D., 1990. Report on reconnaissance sampling programme over the Reefton Goldfield, New Zealand. *CRA Exploration Co Ltd*, **MR2960**.

Lipton, I. T. & Horton, J. A., 2014. Measurement of Bulk Density for Resource Estimation – Methods, Guidelines and Quality Control, Mineral Resource and Ore Reserve Estimation - The AusIMM guide to good practice, *Carlton Victoria 3053, Australia*, The Australasian Institute of Mining and Metallurgy, 902.

MacKenzie, D., 2014. Multi-stage ore formation at the Reefton goldfield, New Zealand.

MacKenzie, D., Blakemore, H. & Craw, D., 2016. Paragenesis of orogenic mineralisation in the Reefton goldfield, West Coast region. *in* Christie, A., ed., Mineral deposits of New Zealand: exploration and research. Monograph 31, The Australasian Institute of Mining and Metallurgy, 125-132.

Madambi, K. & Moore, J., 2013. Technical Report for the Reefton Project. *OceanaGold*.

Magner, P. & Winward, S., 1996. PL 31-2175, Cumberland, Progress and final report on prospecting activities, 1995 - 1996. *Macraes Mining Co Ltd*, **MR3460**.

Maw, L. A., 2000. Greenland Group deformation and the structural controls on mineralisation within the Reefton Goldfield. PhD Thesis, *University of Otago*.

McClelland, D. A., 1973. Lyell Shear Interim Report. *Otter Minerals Exploration Ltd*, **MR1311**.

McCulloch, M., 2023a. Mineral Resource Estimate Report Supreme Gold Project. *Reefton Resources Pty Ltd*.

-, 2023b. Mineral Resource Estimate, Auld Creek Project. *Reefton Resources Pty Ltd*.

McCulloch, M., 2023c. Mineral Resource Estimate, Big River Gold Project. *Reefton Resources Pty Ltd*.

McKay, A., 1883. On antimony lode and quartz reefs at Langdon's Hill, Grey County. *New Zealand Geological Survey Reports of Geological Explorations*, **15**, 83-85.

McLelland, R., 2011. EP 50438 Capleston Annual Report 2011. *OceanaGold (NZ) Ltd*, **MR4722**.

Milham, L. & Craw, D., 2009. Two-stage structural development of a Paleozoic auriferous shear zone at the Globe-Progress deposit, Reefton, New Zealand. *New Zealand Journal of Geology and Geophysics*, **52**, 247-259.

Monteiro, K., 2023. Siren Gold Limited Alexander Rover and Sam's Creek Projects Sighter Test. *Steinert Global*, **Project TW202210-354**.

Morgan, P. G., 1911. The geology of the Greymouth subdivision, north Westland. *New Zealand Geological Survey Bulletin*, **13**.

Mortimer, N., 2004. New Zealand's geological foundations. *Gondwana Research*, **7**, 261–272.

Mortimer, N., Nathan, S., Jongens, R., Kawachi, Y., Ryland, C., Cooper, A. F., Stewart, M. & Randall, S., 2013. Regional metamorphism of the Early Palaeozoic Greenland Group, South Westland, New Zealand. *New Zealand Journal of Geology and Geophysics*, **56**, 1-15.

Muir, R., Weaver, S., Bradshaw, J., Eby, G., Evans, J. & Ireland, T., 1996. Geochemistry of the Karamea Batholith, New Zealand and comparisons with the Lachlan fold belt granites of SE Australia. *Lithos*, **39**, 1–20.

Nathan, S., Rattenbury, M. & Suggate, R., 2002. Geology of the Greymouth area (compilers). *Institute of Geological and Nuclear Sciences. Geological Map*, **12**.

Patterson, G. W., 1987. Gold prospects, Reefton, New Zealand. *CRA Exploration Co Ltd*, **MR1496**.

Petchey, P., 2022. Archaeology Assessment for Reefton Resources Pty Ltd. Drilling Programme Lyell Gold Project EP 60479. *Southern Archaeology Ltd*, **Unpublished report to Reefton Resources Ltd**.

Pettigrew, N., Thomas, D. & Penna, D., 2017. NI 43-101 Independent Technical Report Goldenville Project, Guysborough County, Nova Scotia. *Fladgate Exploration Consulting Corporation*.

Phillips, D., Fu, B., Wilson, C. J. L., Kendrick, M. A., Fairmaid, A. M. & Miller, J. M., 2012. Timing of gold mineralisation in the western Lachlan Orogen, SE Australia: A critical overview. *Australian Journal of Earth Sciences*, **59**, 495-525.

Phillips, G. N. & Hughes, M. J., 1996. The geology and gold deposits of the Victorian gold province. *Ore Geology Reviews*, **11**, 255-302.

Phillips, G. N. & Powell, R., 2009. Formation of gold deposits: Review and evaluation of the continuum model. *Earth-Science Reviews*, **94**, 1–21.

-, 2010. Formation of gold deposits: A metamorphic devolatilization model. *Journal of Metamorphic Geology*, **28**, 689–718.

Pilcher, T. & Cutovinos, A., 2008. Prospecting and Exploration Report EP 40732 'Lyell' 1 April 2007 - 31 May 2008. *Auzex Resources Ltd*, **MR4323**.

Rattenbury, M. S., 1994. Structural geology of the Globe Hill area, Reefton. *Macraes Mining Company Limited*, **Unpublished GNS report**.

Rattenbury, M. S. & Stewart, M., 2000. Structural setting of the Globe-Progress and Blackwater gold mines, Reefton goldfield, New Zealand. *New Zealand Journal of Geology and Geophysics*, **43**, 435-445.

Reefton Resources Pty Ltd, 2023a. EP 60446 Alexander River Final Report. *Siren Gold*.

-, 2023b. EP 60448 Big River Final Report. *Siren Gold*.

-, 2023c. EP 60479 Lyell Final Report. *Siren Gold*.

-, 2023d. EP 60648 Auld Creek 3-Year Technical Report. *Siren Gold 2023*.

-, 2023e. PP 60632 Bell Hill Final Report. *Siren Gold*.

-, 2024. EP 60648 Auld Creek 3-Year Technical Report. *Siren Gold*.

Riley, P. & Ball, J. H. T., 1971. Murray Creek antimony. *Lime & Marble Ltd*, **MR1283**.

Ritchie, T. W., Scott, J. M., Muhling, J. R. & Kennedy, A. K., 2015. Cretaceous metamorphism, magmatism and shearing in the Waipuna Valley, directly south of the Reefton Goldfield. *New Zealand Journal of Geology and Geophysics*, **58**, 89-103.

Robert, F. & Brown, A. C., 1986. Archean gold-bearing quartz veins at the Sigma Mine, Abitibi greenstone belt, Quebec; Part I, Geologic relations and formation of the vein system. *Economic Geology*, **81(3)**, 578-592.

Rosengren, P. G., 1984. Final report on Prospecting Licences to 31/07/84. PL 31 860 Larry River, PL 31 861 Waitahu River, PL 31 862 Crushington, PL 31 863 Merrijigs, PL 31 864 Big River, PL 31 865 Snowy River. *CRA Exploration Co Ltd*, **MR1404**.

Ryan, R. J. & Smith, P. K., 1998. A review of the mesothermal gold deposits of the Meguma Group, Nova Scotia, Canada. *Ore Geology Reviews*, **13**, 153-183.

Salier, B., Groves, D., McNaughton, N. & Fletcher, I., 2004. The world-class Wallaby gold deposit, Laverton, Western Australia: An orogenic-style overprint on a magmatic-hydrothermal magnetite-calcite alteration pipe? *Mineralium Deposita*, **39**, 473-494.

Siren Gold Limited, 2021. Maiden Exploration Target at Big River. 23.09.2021, *ASX announcement*, https://announcements.asx.com.au/asxpdf/20210923/pdf/450st2wnxrrrrw.pdf.

-, 2022a. New 3km Gold Zone Discovered at Lyell. 28.04.2022, *ASX announcement*, https://announcements.asx.com.au/asxpdf/20220428/pdf/458dk5qp91vj3y.pdf.

-, 2022b. Siren Pegs High Grade Langdons Reef at Reefton. 10.05.2022, *ASX announcement*, https://announcements.asx.com.au/asxpdf/20220510/pdf/458vfvzhr37b3m.pdf.

-, 2023a. Big River Maiden Mineral Resource increases Siren to 1.1 Moz. 20.04.2023, *ASX announcement*, https://announcements.asx.com.au/asxpdf/20230420/pdf/45nttqnw2hsw0f.pdf.

-, 2023b. Metallurgical Results and Process Plant Scoping Study Update. 20.01.2023, *ASX announcement*, https://www.sirengold.com.au/site/PDF/790f0e28-eac4-46a9-955b-96cfd738a49c/MetallurgicalResultsandProcessPlantScopingStudyUpdate.

-, 2023c. Re-opening the Reefton Goldfield, New Zealand: AGM Presentation. https://www.sirengold.com.au/site/pdf/6fc800c5-2af4-4f17-b99e-efa82392e0a0/AGM-Presentation.pdf [accessed on 30/08/2024].

-, 2023d. Siren Gold Limited Annual Report 2023. https://www.sirengold.com.au/site/pdf/809de454-7b12-457c-8282-851f891baad8/Annual-Report-to-shareholders.pdf [accessed on 12/08/24].

-, 2024a. +95% Gold and Antimony Recoveries at Auld Creek. 05.09.2024, *ASX announcement*, https://announcements.asx.com.au/asxpdf/20240905/pdf/067jnrv7bb9nzn.pdf.

-, 2024b. Antimony Resource increases 66% to 14,500 t & Global MRE exceeds 1.4 Moz AuEq. 17.09.2024, *ASX announcement*, https://announcements.asx.com.au/asxpdf/20240917/pdf/067ysjst7w5qzl.pdf.

Southern Geoscience Consultants, 1996. Reefton Project aeromagnetic interpretation. *Unpublished Report*.

Sterk, R., 2015. Quality control on assays: addressing some issues. *AusIMM New Zealand Branch Annual Conference, Dunedin*.

Stewart, M., 1996. Structural mapping Waiuta surrounds. *Macraes Mining Company Limited*, **MR3487**.

Tavares Nassif, M., Monecke, T., Reynolds, T. J., Kuiper, Y. D., Goldfarb, R. J., Piazolo, S. & Lowers, H. A., 2022. Formation of orogenic gold deposits by progressive movement of a fault-fracture mesh through the upper crustal brittle-ductile transition zone. *Scientific Reports*, **12**, 17379.

Tulloch, A., 1988. Batholiths, plutons, and suites: nomenclature for granitoid rocks of Westland—Nelson, New Zealand. *New Zealand journal of geology and geophysics*, **31**, 505–509.

Turnbull, R., Tulloch, A., Ramezani, J. & Jongens, R., 2016. Extension-facilitated pulsed S-I-A-type “flare-up” magmatism at 370 Ma along the southeast Gondwana margin in New Zealand: Insights from U-Pb geochronology and geochemistry. *GSA Bulletin*, **128**, 1500-1520.

USGS, 2024. Antimony. https://pubs.usgs.gov/periodicals/mcs2024/mcs2024-antimony.pdf [accessed on 14 10 2024].

Vandenberg, A., 1978. The Tasman fold belt system in Victoria. *Tectonophysics*, **48**, 267–297.

Vidanovich, P., 2013. Summary Report on the West Coast Airborne Geophysical Survey 2011–2013. *Ministry of Business, Innovation & Employment*, **MR 5000**.

Vielreicher, R. M., Groves, D. I., Ridley, J. R. & McNaughton, N. J., 1994. A replacement origin for the BIF-hosted gold deposit at Mt. Morgans, Yilgarn Block, W.A. *Ore Geology Reviews*, **9**, 325-347.

Westgard, J. O., Barry, P. L., Hunt, M. R. & Groth, T., 1981. A multi-rule Shewhart chart for quality control in clinical chemistry. *Clinical Chemistry*, **27**, 493–501.

Whetter, N., 2006. Supreme Prospect Drilling Program. *OceanaGold (NZ) Ltd*, **MR4230**.

Whetter, N. & McCulloch, M., 2008. Supreme Prospect Drilling Program. *OceanaGold (NZ) Ltd*, **MR4452**.

Wood Mackenzie, 2024. New Zealand Draft Critical Mineral List. *New Zealand Ministry of Business, Innovation & Employment*.

Yu, H.-C., Qiu, K.-F., Deng, J., Zhu, R., Mathieu, L., Sai, S.-X. & Sha, W.-J., 2022. Exhuming and Preserving Epizonal Orogenic Au-Sb Deposits in Rapidly Uplifting Orogenic Settings. *Tectonics*, **41**, e2021TC007165.

Zuckerman, M. B., 1972. Final report - Economic potential of the northern MPW areas (Little Wanganui, Glenroy, Victoria Range, Marnia, Lyell, Shenandoah, Mokihinui, Rahu and Upper Grey). *New Zealand Petroleum and Minerals*, **MR731**.

28. Certificate of Qualified Person: <<Sean Aldrich>>

I, **Sean Aldrich**, MSc MAusIMM MAIG of 20 Park Road, Warrington 9471, New Zealand do hereby certify that:

1. I am a Principal Geologist at RSC Consulting Ltd, located at 245 Stuart Street, Dunedin 9016, New Zealand.
2. The Technical Report to which this certificate applies is titled *'Reefton Resources Pty Ltd Reefton Project, New Zealand'* with an effective date of 30 October 2024.
3. I graduated with an MSc from the University of Waikato in 1996.
4. I am a Member, registered and in good standing, with the AIG (MAIG) in Australia (recognised overseas professional organisation) as member 8521.
5. Throughout my career, I have practiced continuously as an underground and open pit mining geologist, exploration geologist, exploration manager, and consultant for mining and exploration firms in a range of commodities. I have undergone continuing professional development with recognised courses and training seminars.
6. I have read the definition of 'qualified person' set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with professional associations (as defined in NI 43-101), and past relevant work experience, I fulfil the requirements to be a 'qualified person' for the purposes of NI 43-101.
7. I completed a site visit (personal inspection) of the Reefton Project between 12 and 15 August 2024.
8. I am responsible for Sections 1–13, and 23–27 of this Technical Report.
9. I am independent of the issuer, Rua Gold Inc and RRPL, applying all of the tests in section 1.5 of National Instrument 43-101.
10. I have no prior involvement with the Project that is the subject of this Technical Report.
11. I have read National Instrument 43-101 and Form 43-101F1, and this Technical Report has been prepared in compliance with that Instrument and Form.
12. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make this Technical Report not misleading.

Signed this 30 October 2024 in Dunedin, New Zealand:

/Sean Aldrich/

Sean Aldrich, MSc MAusIMM MAIG

Principal Geologist Exploration, RSC Consulting Ltd

29. Certificate of Qualified Person: <<Abraham Whaanga>>

I, **Abraham Whaanga**, BSc MAusIMM (CP) of 2 Grenadier Lane, Waihi, Waikato 3610, New Zealand do hereby certify that:

1. I am a Senior Resource Geologist at RSC Consulting Ltd, located at 245 Stuart Street, Dunedin 9016, New Zealand.
2. The Technical Report to which this certificate applies is titled *'Reefton Resources Pty Ltd Reefton Project, New Zealand'* with an effective date of 30 October 2024.
3. I graduated with a BSc from Victoria University of Wellington in 2000.
4. I am a Member and Chartered Professional (CP) registered with the Australasian Institute of Mining & Metallurgy (AusIMM) in Australia (recognised overseas professional organisation) as member 304495, in good standing.
5. Throughout my career, I have practiced continuously as an exploration geologist, underground mining geologist, geology manager, and consultant for mining and exploration firms in the following commodities: epithermal and orogenic gold, komatiite-hosted nickel sulphide, and iron ore. I have undergone continuing professional development with recognised courses and training seminars.
6. I have read the definition of 'qualified person' set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with professional associations (as defined in NI 43-101), and past relevant work experience, I fulfil the requirements to be a 'qualified person' for the purposes of NI 43-101.
7. I have not undertaken a site visit to the Reefton Project.
8. I am responsible for Sections 6.4, 14, and 23.1 of this Technical Report.
9. I am independent of the issuer, Rua Gold Inc and RRPL, applying all of the tests in section 1.5 of National Instrument 43-101.
10. I have no prior involvement with the Project that is the subject of this Technical Report.
11. I have read National Instrument 43-101 and Form 43-101F1, and this Technical Report has been prepared in compliance with that Instrument and Form.
12. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make this Technical Report not misleading.

Signed this 30 October 2024 in Waihi, New Zealand:

/Abraham Whaanga/

Abraham Whaanga, BSc MAusIMM (CP)
Senior Resource Geologist, RSC Consulting Ltd