30th September 2019

Tate River Gold Project (QLD) - Exploration Update

- **Assays received from recent field work program at the Tate River project returned further encouraging gold results at the Far North and Big Reef Prospects;**
- **Mapping and sampling at Far North outlined gold rich quartz vein breccias and sheeted quartz vein zones over 1.2km of strike, and widths up to 13 metres with individual spot samples grading up to 0.86 g/t Au. The new gold results complement previous Zenith sampling results up to 1.67 g/t Au. The Far North zone is likely to extend further west beneath younger surficial cover sequence;**
- **Sampling along strike from the historic Big Reef gold prospect now defines gold rich quartz veins over 4km of strike. New gold and silver results from Zenith sampling returned up to 1.59 g/t Au and 74.3 g/t Ag supporting historic costean sample results up to 14.1 g/t Au;**
- **Systematic geochemical sampling along with detailed mapping of the Big Reef target is required, prior to drill testing, whilst systematic rock chip channel sampling is required to assist in drill target definition at the Far North prospect.**

Zenith Minerals Limited ("Zenith" or "the Company") is pleased to announce that it has received results from a recent program of field work conducted at the Company's Tate River gold-silver project located in north Queensland (Figure 1). As previously announced (ASX Release 2nd August 2017) Zenith may earn up to a 70% interest in the Tate River gold project from private company Jumani Pty Ltd.

The Tate River gold project is located close to two known intrusion related gold deposits, it is 50km southwest of the Mungana/Red Dome gold deposit with total endowment of 3.2Moz gold and 11km southwest of the Mountain Maid gold deposit.

Excavator trenching by Zenith at the **Guppy Strike** prospect returned up to 5 m @ 3.92 g/t Au (ASX Release 21st September 2017).

New sampling, the subject of this ASX release, was focused in the Far North Prospect as well as at the new Big Reef target area located in the recently granted exploration permit for minerals that is to the south east of the existing licence.

Mapping and sampling at the **Far North** prospect outlined gold rich quartz vein breccias and sheeted quartz vein zones over 1.2km of strike, with widths up to 13 metres, with individual rock samples grading up to 0.86 g/t Au. This recent sampling compliments previous work by Zenith (refer to ASX release dated 2nd September 2018) that initially identified gold rich quartz veins zones hosted within mica rich schist and granite, grading up to 1.67 g/t Au. The gold rich quartz vein zone is likely to extend further west beneath a younger surficial cover sequence.

Sampling along strike from the historic **Big Reef** gold prospect now defines gold rich quartz veins over 4km of strike. New results to 1.59 g/t Au and 74.3 g/t Ag support historic costean sample results including 14.1, 13.0 and 2m @ 8.7 g/t Au. The quartz sulphide veins, hosted in mica schists based on surface mapping range from 1.5m to 5m in width (typically 2m) and have associated trace element geochemistry including

Corporate Details

ASX: ZNC

Issued Shares (ZNC)	212.8M
Unlisted options	4.15M
Mkt. Cap. ($0.06)	A$13M
Cash (30th Jun 19)	A$1.1 M
Debt	Nil

Directors

Michael Clifford:
Managing Director

Mike Joyce:
Non-Exec Chairman

Stan Macdonald:
Non-Exec Director

Julian Goldsworthy:
Non-Exec Director

Graham Riley:
Non-Exec Director

Major Shareholders

HSBC Custody. Nom.	13.4%
J P Morgan	6.8%
Nada Granich	5.4%
Miquilini	4.3%
Abingdon	4.1%

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strongly anomalous silver (Ag), bismuth (Bi), cadmium (Cd), copper (Cu), tellurium (Te), selenium (Se) & zinc (Zn).

Historic airtrack percussion drill holes at Big Reef returned encouraging drill results up to 3m @ 9.2g/t Au from surface, however the reader is cautioned that this type of open hole drill method is typically not suitable for sampling gold mineralisation and the result should be considered as encouraging but qualitative only. Later RC drilling returned up to 3m @ 2.24 g/t Au from an adjacent and only hole orientated correctly to intersect the northeast dipping veins, whilst four other shallow RC drill holes appear to have been drilled down-dip and under the target quartz veins and are unlikely to have been an effective drill test.

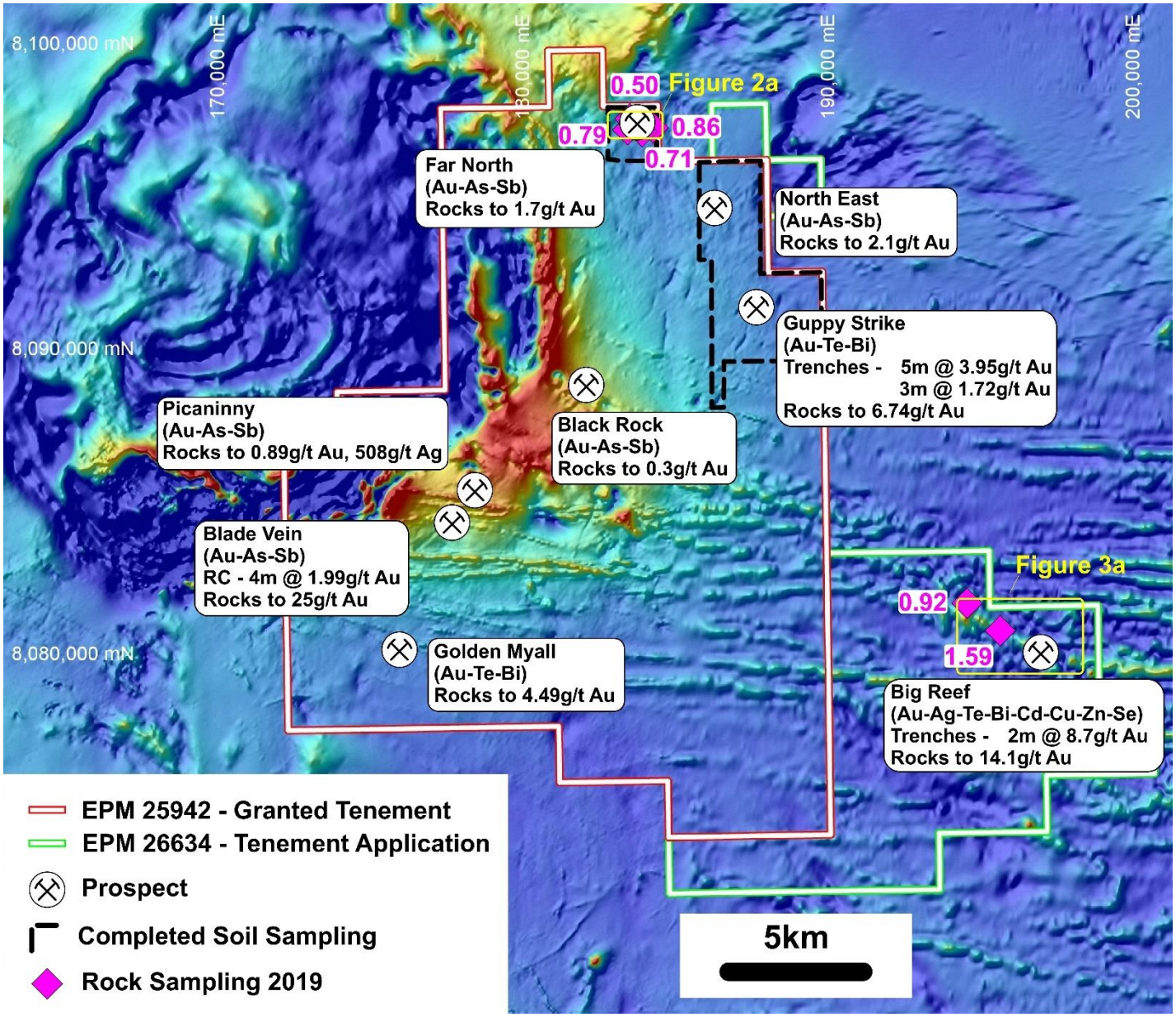


Figure 1- Tate River Project - Prospect Locations and Gold Rock Results over Aeromagnetic Image (TMI)

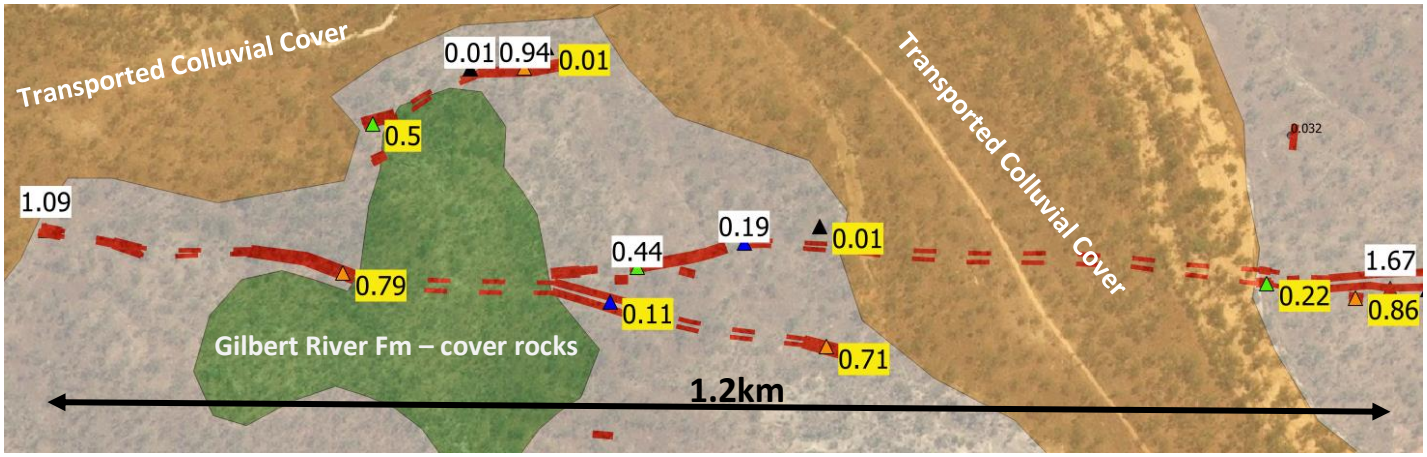
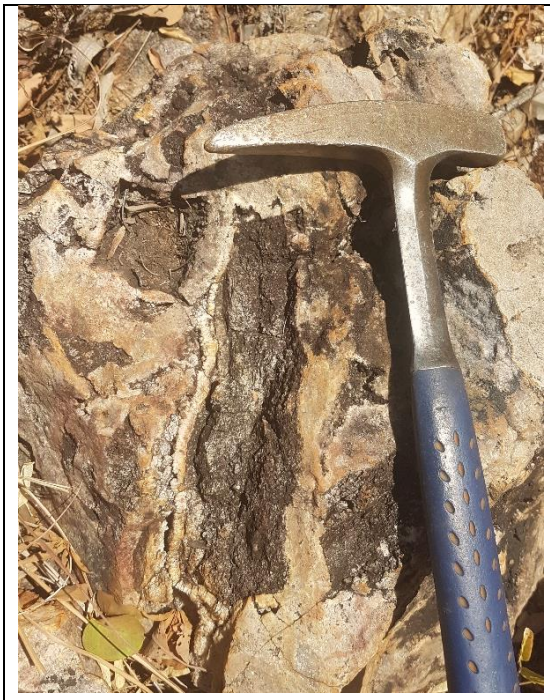


Figure 2a: Far North Prospect – Gold Rock Sample Results – Au g/t. Solid red lines are outline of outcropping quartz breccia and quartz vein zones, dashed red lines are inferred zones (yellow box new 2019 ZNC samples, white box 2018 ZNC samples)



Close up Photo of Far North prospect - Quartz Breccia Rock Sample (0.79 g/t Au)

Outcrop Photo of Far North Prospect - Quartz Breccia Rock Sample (0.79 g/t Au). Breccia observed over 5 – 6m width.

Figure 2b: Far North Prospect – Gold Rock Sample Photos

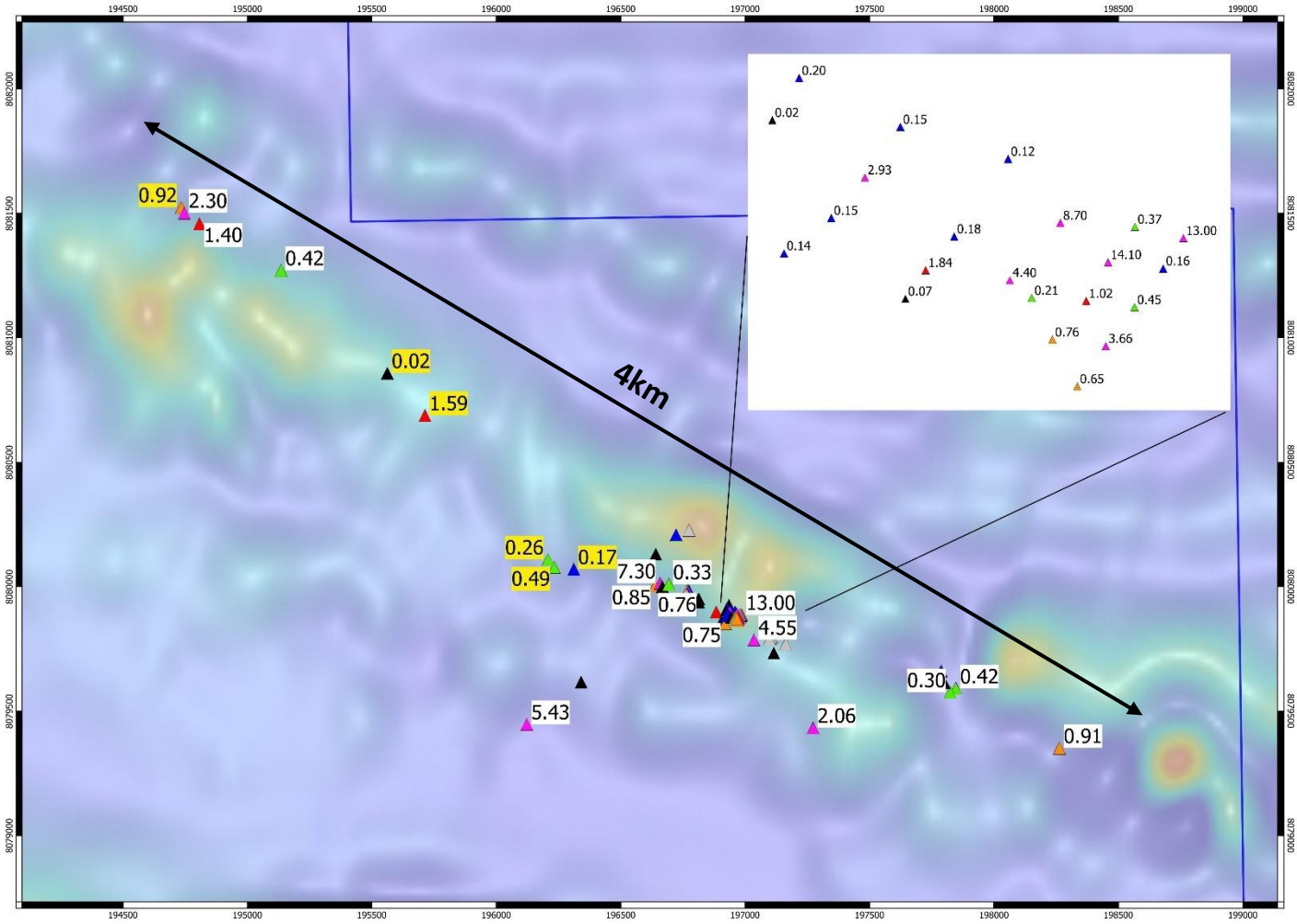
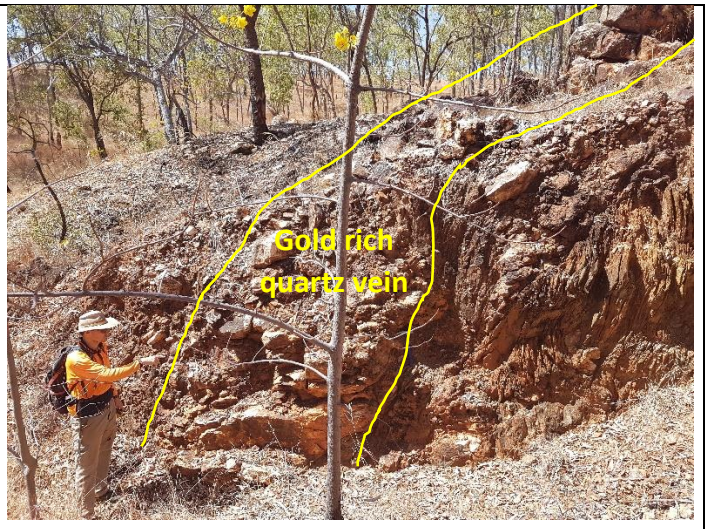


Figure 3a: Big Reef Prospect – Gold Rock Sample Results – Au g/t over Aeromagnetic Image (TMI). (yellow box new 2019 ZNC samples, white boxes historic rock samples)

Close up Photo of Big Reef Prospect West - Quartz Vein Rock Sample (ZNC new assay 1.59 g/t Au) – vein 1.5m wide



Big Reef Prospect – Historic Costeans with 2m Wide North Dipping Quartz Vein (historic rock sampling to 14.1g/t Au)

Figure 3b: Big Reef Prospect – Gold Rock Sample Photos

Background on the Tate River Gold Project

As previously announced (ASX Release 2nd August 2017) a wholly owned subsidiary of Zenith, Caldera Metals Pty Ltd signed a Farm-In agreement with private company Jumani Pty Ltd, whereby Caldera may earn up to 70% interest in the Tate River gold project.

The Tate River gold project is located close to two known intrusion related gold deposits, it is 50km southwest of the Mungana/Red Dome gold deposit with total endowment of 3.2Moz gold and 11km southwest of the Mountain Maid gold deposit with resources of 72Mt @ 0.23 g/t gold (0.5Moz gold) – AVQ ASX Release 10th Dec 2010 (Figure 4).

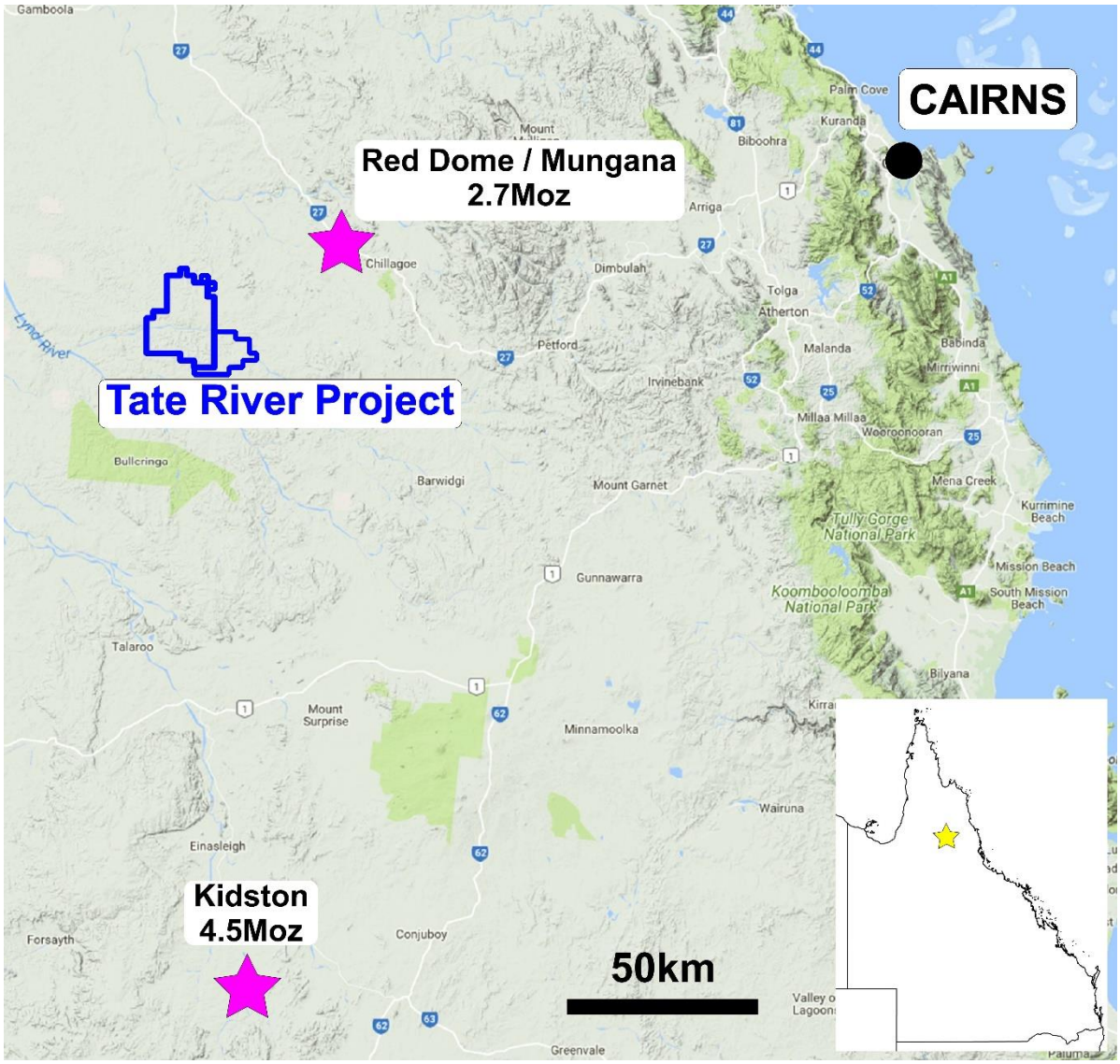


Figure 4: Tate River Project – Location Map

The project contains several gold and gold-silver prospects that are considered to be epithermal or intrusion related gold systems that have been subject to previous exploration (Figure 1) with Zenith's initial focus on the newly discovered Guppy Strike prospect and subsequently expanding to the large highly prospective land holding away from the known gold prospects.

As previously announced to the ASX (21st September 2017) a program undertaken by Zenith of continuous, horizontal channel sampling of 13 trenches dug by excavator has confirmed widespread bedrock gold mineralisation over an area 450m x 300m at the **Guppy Strike Prospect**. Results included: 5m @ 3.92g/t Au from mica schist, whilst ferruginous quartz vein zones hosted in amphibolite tested by 3 separate trenches returned: 3m @ 1.72 g/t Au, 3m @ 1.09 g/t Au and 2m @ 0.82g/t Au over a strike length of 150m. Widespread strongly anomalous gold zones such as in Trench GT12

(entire length averaging 166m @ 0.14g/t Au) in the southwest of the prospect area are associated with a felsic and pegmatite dyke swarm. The rock samples at Guppy Strike have a typical intrusion related gold deposit signature containing elevated levels of gold-bismuth-tellurium. In addition, a soil geochemical survey was completed over the Guppy Strike discovery area in order to assist in determining the extents of the gold mineralised system. Assay results from the soils program show a 550m long x 400m wide gold-bismuth-tellurium-copper-zinc soil anomaly coincident with and open to the south of the Guppy Strike gold zones. The prospect remains a valid target for drill testing.

In early September 2018 Zenith announced the discovery of two new prospects **Far North** and **North East** (refer to ZNC ASX Release 2nd September 2018).

At the North East prospect rock sample results returned up to 2.1g/t gold with associated high arsenic and antimony in colloform banded quartz veins and quartz breccia hosted by rhyolite, and schist whilst wide spaced (400m x 100m) soil sampling returned high-order gold results up to 0.2g/t gold.

In addition rock samples taken at the Far North prospect returned up to 1.7g/t gold also with strong arsenic & antimony hosted in quartz veins, whilst a single rock sample of a quartz vein in an area of soil cover 1.3km west of the Guppy Strike Prospect returned 1.17g/t gold in association with strong bismuth & tellurium.

Sampling, the subject of this ASX release, was focused in the **Far North Prospect** as well as the new **Big Reef** target area located in the recently granted exploration permit that is contiguous with the south eastern border of the existing permit.

Competent Persons Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Michael Clifford, who is a Member of the Australian Institute of Geoscientists and an employee of Zenith Minerals Limited. Mr Clifford has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Clifford consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

30th September 2019

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Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	*Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*	Selective rock chip samples were collected by an experienced geologist.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Rock samples were taken as either spot samples or chip channel samples across the strike of inferred mineralised zones and are considered representative of the material sampled.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Soil samples were sieved in the field to -2mm and then pulverised in the laboratory before analysis. Rock samples of 1-2kg were broken using a hammer from the outcrop. Samples were crushed in the laboratory and then pulverised before analysis.
Drilling techniques	*Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	No Drilling
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	No Drilling
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	No Drilling
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	No Drilling
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	Rock & soil sample sites were geologically described in including lithology, alteration, weathering, veining, structural measurements were made of the orientations of veins.

	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Qualitative logging only
	The total length and percentage of the relevant intersections logged.	All samples were logged
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	No Drilling
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	No Drilling
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Samples were analysed at ALS Laboratories in Townsville, the samples were crushed, pulverised and assayed for gold using fire assay
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	~2kg of rock was crushed and pulverised and a sub-sample was taken in the laboratory and sent for analysis.
Sub-sampling techniques and sample preparation - continued	*Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	Soil samples were taken systematically and are believed to be representative of the zones they come from, for each trench two duplicate field samples were taken. Rock samples were selective and may or may not be representative of the outcrops as a whole.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Each rock sample was 1kg to 2kg in weight which is appropriate to test for the grain size of material. 200g of sieved soil was taken from -20cm at each soil sample site.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	The samples were crushed and assayed by fire assay for gold (30g) with AA finish, selected samples were also analysed for 48 trace elements using 4 acid, ICP-MS
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No XRF or geophysical tools used
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Approximately 1 certified reference standard and one blank were submitted for per 50 samples. Standards and blanks returning appropriate levels.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	No significant intersections reported.
	The use of twinned holes.	No drilling
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Field data were all recorded on paper log sheets and sample sheets and then entered into a digital company database
	Discuss any adjustment to assay data.	No adjustments were made.
Location of data points	*Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other*	Sample location is based on GPS coordinates +/-5m accuracy

	locations used in Mineral Resource estimation.	
	Specification of the grid system used.	The grid system used to compile data was MGA94 Zone 55
Location of data points - continued	*Quality and adequacy of topographic control.*	Topography control is +/- 5m.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	All rock samples greater than 1g/t Au are shown on figure 1.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	The data alone will not be used to estimate mineral resource or ore reserve
	Whether sample compositing has been applied.	No compositing applied.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	Soil sampling lines were orientated approximately perpendicular to the assumed strike of mienralisation.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	No drilling.
Sample security	*The measures taken to ensure sample security.*	Samples were kept in numbered bags until delivered to the laboratory
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	Sampling techniques are consistent with industry standards

Section 2 Reporting of Exploration Results

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

Criteria	*JORC Code explanation*	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*	The Tate River Project is located within the 100% Jumani Pty Ltd owned exploration permit for minerals EPM 25942. Zenith Minerals Limited via a Farm-In agreement signed 1/08/17 may earn up to 70% equity by spending $800,000, with a minimum commitment before withdrawal of $150,000. The project is located within private grazing properties.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	All tenements are 100% held by Jumani and are in good standing with no known impediment to future granting of a mining lease.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Jumani Pty Ltd discovered gold rich ferruginous quartz veins/stockwork at the Guppy Strike prospect with assays up to 6.74 g/t Au (refer to Figure 2 in body of this report). Sovereign Resources previously reported 2 rock chip sample results in the SW of the Guppy Strike prospect area returning 0.93 g/t Au and 2.73 g/t Au. No other known exploration work has been conducted on this prospect area. Refer also to ZNC ASX Release 2nd August 2017.
Geology	*Deposit type, geological setting and style of mineralisation.*	Based on the initial site visit and preliminary evidence the geological setting and geochemical association at Guppy Strike is indicative of an intrusion related gold system.
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*	No drilling
	o easting and northing of the drill hole collar	
	o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar	
	o dip and azimuth of the hole	
	o down hole length and interception depth	
	o hole length.	
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*	No compositing applied.
	Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	Refer above

Data aggregation methods - continued	*The assumptions used for any reporting of metal equivalent values should be clearly stated.*	No metal equivalents used.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.*	
	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	No drilling.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	No drilling.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	Refer to descriptions and diagrams in body of text.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	Results reported on Figures 1 & 2.
Other substantive exploration data	*Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	No other meaningful or material exploration data to be reported at this stage
Further work	*The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*	Further infill & extension surface geochemical sampling to define the limits of the open gold soil anomalies is planned.
	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Refer to figures in body of report.