



21st September 2017

Tate River – Widespread Bedrock Gold Mineralisation

- ✦ Excavator trenches completed by Zenith at the Guppy Strike prospect have confirmed widespread bedrock gold mineralisation over an area 450m x 300m, with results up to 5m @ 3.92g/t Au hosted in 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;
- ✦ Wide zones of strongly anomalous gold associated with pegmatite and felsic dyke swarms- Trench GT12 (entire length averaging 166m @ 0.14g/t Au);
- ✦ Soil sampling over an expanded area at Guppy Strike has defined additional untested gold-bismuth+ tellurium and copper soil anomalies to the southwest and south east that require follow-up field assessment.
- ✦ Setting and geochemical association is indicative of an intrusion related gold system. Nearby deposits of this type include Mungana / Red Dome gold mine that had gold endowment of 2.7Moz Au;
- ✦ Review of trace element zonation and alteration assemblages in progress to assess deeper drill targeting, as well as further surface geochemical sampling to define the limits of the open ended Guppy Strike gold soil anomalies is planned.

Zenith Minerals Limited (“Zenith” or “the Company”) is pleased to advise that assay results have now been received from a program of trenching at the Tate River gold project in north Queensland prospect which was designed to test a zone of sub-cropping quartz veins that at surface returned assays up to 6.74 g/t Au (Figure 1). 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 project contains several gold and gold-silver prospects that are considered to be epithermal or intrusion related gold deposit systems (Figure 2).

Continuous, horizontal channel sampling of 13 trenches dug by excavator has confirmed widespread bedrock gold mineralisation over an area 450m x 300m, with results including 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 (Figure 3). 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.

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 the Guppy Strike gold zones (Figure 4). Additional untested and open ended gold-bismuth+ tellurium-copper soil anomalies occur to the southwest and south east that require follow-up field assessment.

A tabulation of significant gold trench results is included in Table 1.

Corporate Details

ASX: ZNC

Issued Shares (ZNC)	189 M
Listed options (ZNCO)	24 M
Unlisted options	3.5M
Mkt. Cap. (\$0.10)	A\$19 M
Cash (Jun 2017)	A\$2.0 M
Debt	Nil

Directors

Michael Clifford:
Managing Director

Mike Joyce:
Non Exec Chairman

Stan Macdonald:
Non Exec Director

Julian Goldsworthy:
Non Exec Director

Major Shareholders

HSBC Custody, Nom.	6.6%
City Corp Nom	6.2%
Nada Granich	6.1%
Abingdon	4.1%
Miquilini	4.1%

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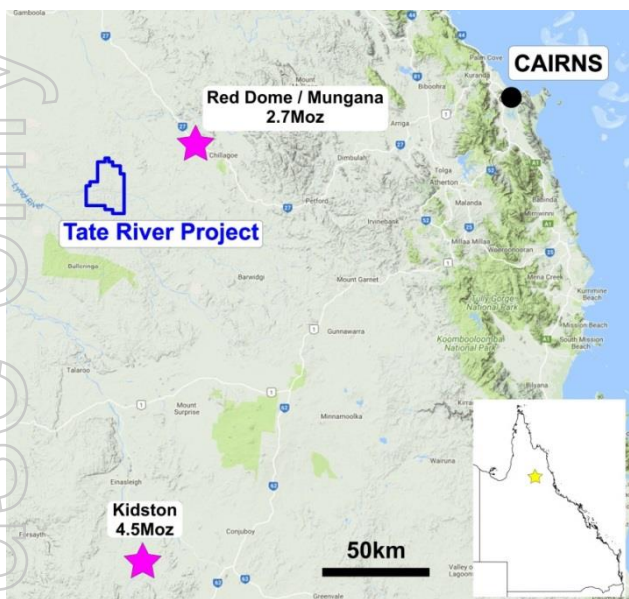


Figure 1: Tate River Project – Location Map
(Showing Past production plus current published resources)

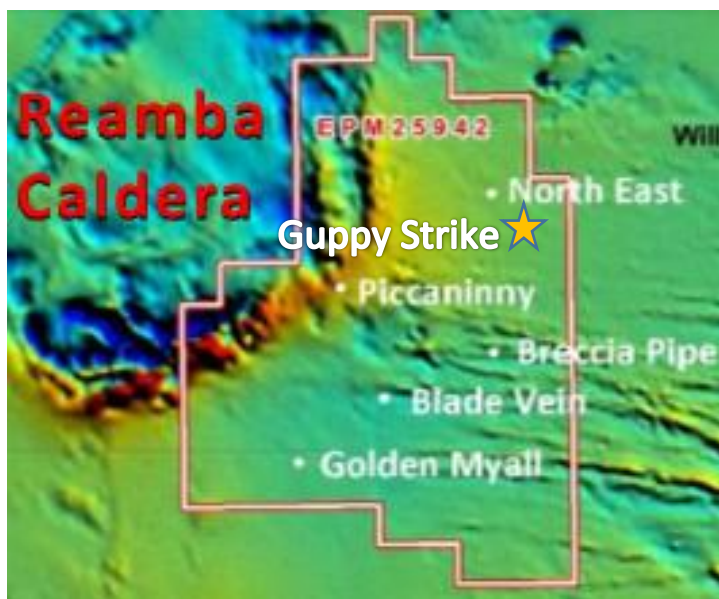


Figure 2: Tate River Prospects

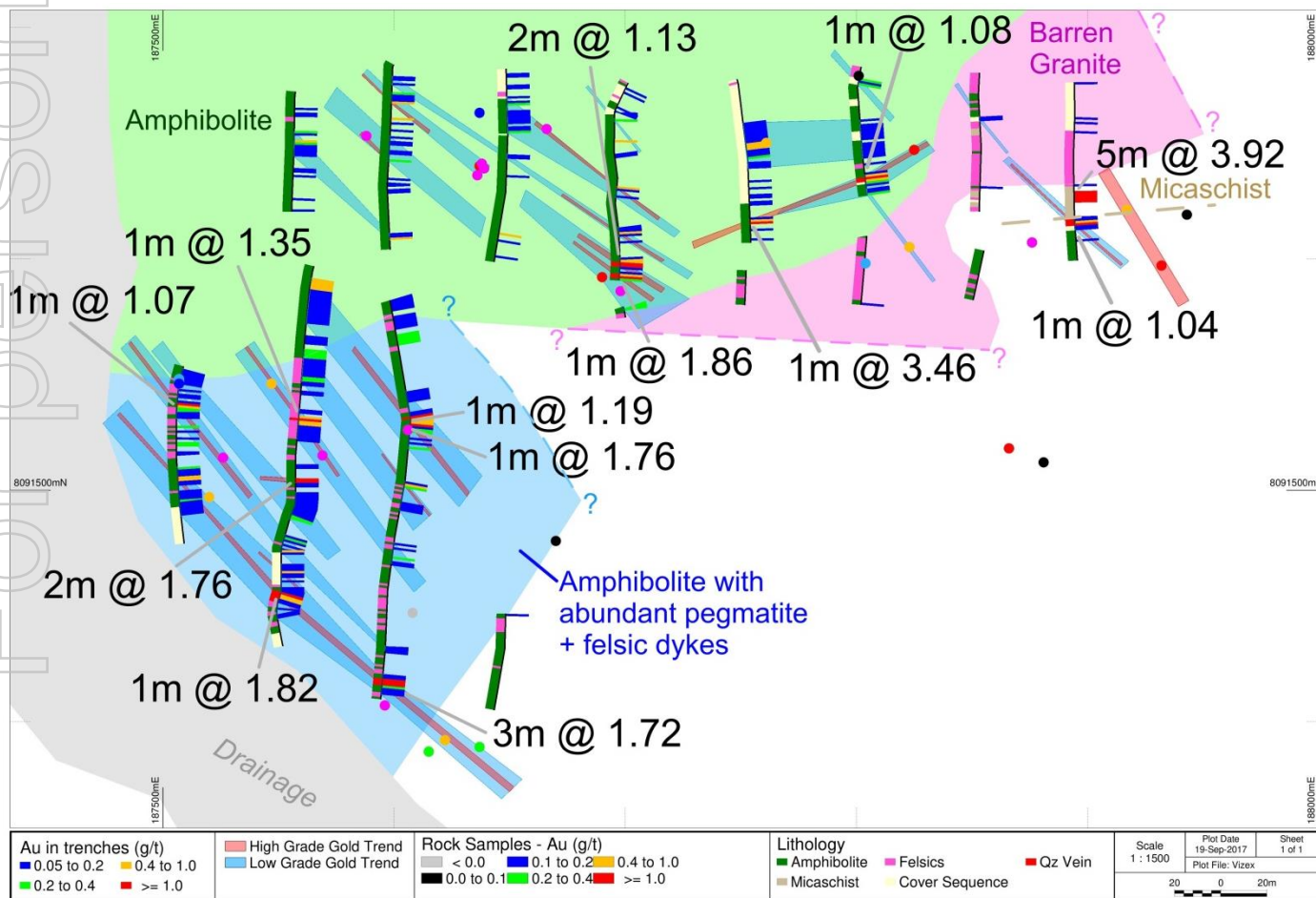
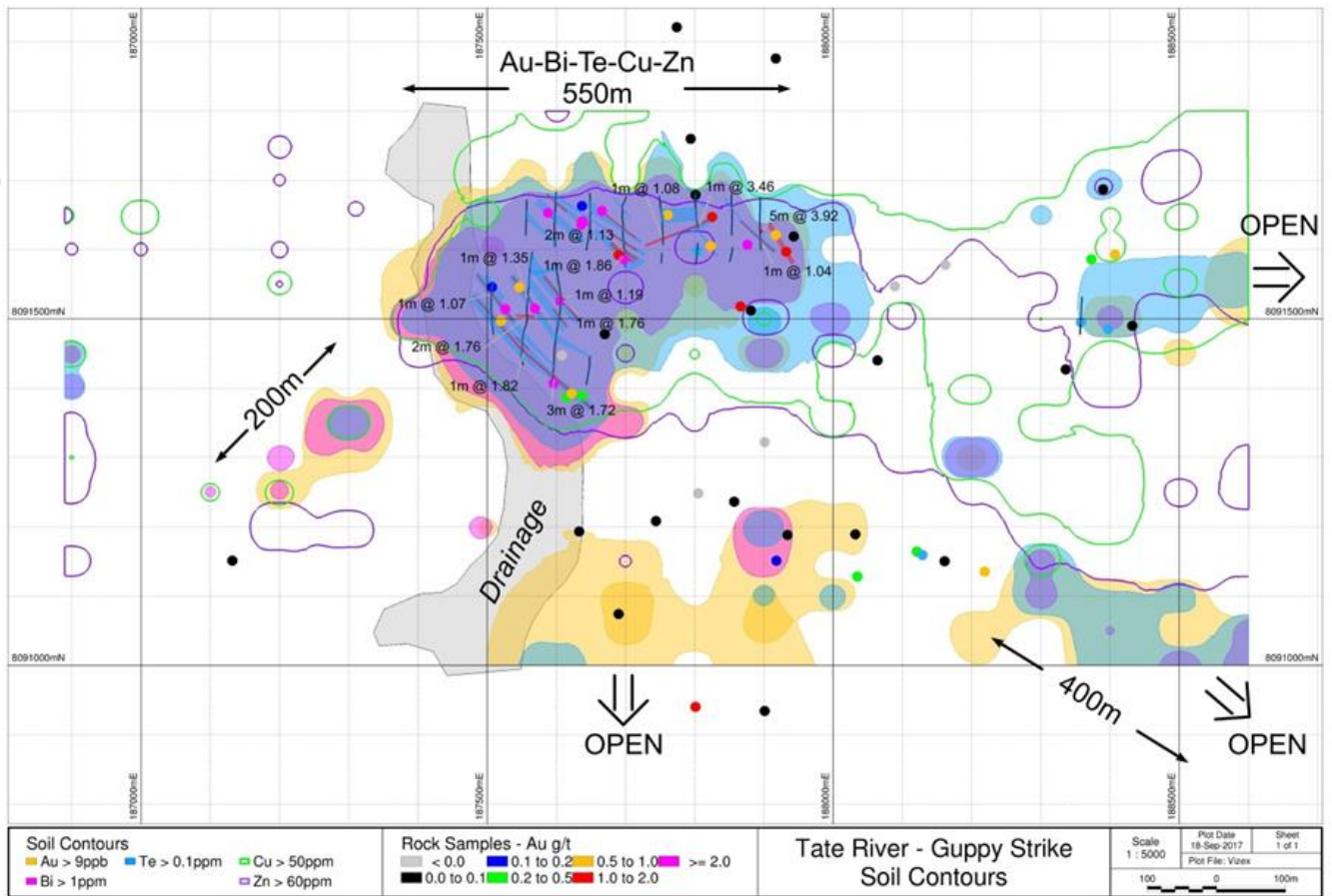


Figure 3: Guppy Strike Prospect Gold Trench Results



(Note: Gold zone orientations based on structural measurements by field geologist)
Figure 4: Guppy Strike Prospect Soil Geochemistry Overlain by Gold Trench Results

Table 1: Guppy Strike Significant Gold Trench Results

(*Note that as all horizontal continuous rock samples were taken at depths of 1.0 to 1.5m depth in the western wall of each trench, the intervals From and To are horizontal distances starting from the northern end of each trench and therefore are not to be confused with downhole depths.)

Trench	FROM*	TO*	Interval	Au_ppm	0.4 g/t Au cut-off				1 g/t Au cut-off				
					From (m)	To (m)	Length (m)	Au (g/t)	From (m)	To (m)	Length (m)	Au (g/t)	
GT1	21	22	1	0.41	21	22	1	0.41					
GT2	16	17	1	0.58	16	17	1	0.58					
GT2	23	24	1	0.57	23	24	1	0.57					
GT2	75	76	1	0.71	75	76	1	0.71					
GT3	71	72	1	0.64	71	72	1	0.64					
GT4	26	27	1	0.8	26	27	1	0.8					
GT4	46	47	1	0.96	46	47	1	0.96					
GT4	66	67	1	0.86	66	67	1	0.86					
GT4	78	79	1	0.68									
GT4	79	80	1	1.13									
GT4	80	81	1	1.13	78	81	3	0.98	including	79	81	2	1.13
GT4	84	85	1	0.5									
GT4	85	86	1	1.86	84	86	2	1.18	including	85	86	1	1.86



GT5	28	29	1	0.58										
GT5	29	30	1	0.49										
GT5	30	31	1	0.93	28	31	3	0.67						
GT5	61	62	1	0.75										
GT5	62	63	1	3.46	61	63	2	2.105	including	62	63	1	3.46	
GT6	47	48	1	0.4										
GT6	48	49	1	1.08						48	49	1	1.08	
GT6	49	50	1	0.52	47	50	3	0.67						
GT8	47	48	1	2.33										
GT8	48	49	1	5.45										
GT8	49	50	1	2.14										
GT8	50	51	1	1.66										
GT8	51	52	1	8.03						47	52	5	3.92	
GT8	60	61	1	0.45										
GT8	61	62	1	1.04	60	62	2	0.75	including	61	62	1	1.04	
GT10	16	17	1	1.07						16	17	1	1.07	
GT10	17	18	1	0.96	16	18	2	1.02						
GT10	48	49	1	0.98										
GT10	49	50	1	0.65	48	50	2	0.82						
GT11	5	10	5	0.41	5	10	5	0.41						
GT11	65	66	1	0.65										
GT11	66	67	1	1.35						66	67	1	1.35	
GT11	67	68	1	0.41										
GT11	68	69	1	0.47	65	69	4	0.72						
GT11	92	93	1	2.44										
GT11	93	94	1	1.07						92	94	2	1.76	
GT11	124	125	1	0.4	124	125	1	0.4						
GT11	133	134	1	0.91	133	134	1	0.91						
GT11	142	143	1	1.82						142	143	1	1.82	
GT11	143	144	1	0.48										
GT11	144	145	1	0.96	142	145	3	1.09						
GT12	51	52	1	1.19						51	52	1	1.19	
GT12	52	54	2	0.43										
GT12	54	55	1	1.76	51	55	4	0.95	including	54	55	1	1.76	
GT12	80	81	1	0.69	80	81	1	0.69						
GT12	165	166	1	1.04										
GT12	166	167	1	2.44										
GT12	167	168	1	1.67						165	168	3	1.72	

For more details visit: www.orsini.com



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.

21st September 2017

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Zenith is advancing its project portfolio of high-quality, gold, lithium and base metal projects:

Kavaklitepe Gold Project, Turkey (ZNC 30%, Teck 70%)

- Recent (2013) grass roots gold discovery in Tethyan Belt
- Continuous rock chip sampling to: 54m @ 3.33g/t gold, including 21.5m @ 7.2 g/t gold
- Initial 2016 drill results include: 9 m @ 5.2 g/t Au from surface, 7.8 m @ 7.3 g/t Au from 3.3 m and 16.4m @ 4.7 g/t Au from 82.1m depth. Drilling to recommence in mid September 2017.

American Lithium Projects (Bradda Head earning initial 55%)

Zacatecas Lithium Brine Project, Mexico

- New tenure (26,000 acres) over extensive system of salt lakes within an emerging lithium brine district
- Lithium brines to 2.1% lithium reported in sampling conducted by the Mexican Government from solar evaporation ponds for salt production (10km west of Zenith's new tenure).
- Near surface drilling completed - results awaited, electrical geophysical surveys planned

San Domingo Lithium, Arizona USA

- 9km x 1.5km lithium pegmatite field, initial surface sampling returned: 5m @ 1.97%Li₂O including 2.4m @ 2.49% Li₂O - Surface sampling and mapping prior to drill testing

Spencer & Wilson Salt Flat Lithium Brine Projects, Nevada USA

- Two lithium brine targets in producing lithium region - Geophysical surveys & infill sampling prior to drilling

Burro Creek Lithium, Arizona USA (ZNC option to acquire)

- Large scale lithium (Li) clay target under exclusive option - Metallurgical testwork to assess ease of extracting lithium – ongoing, permitting for trenching and drilling in progress

Australian Projects

Develin Creek Copper-Zinc-Silver-Gold, QLD (ZNC 100%)

- 3 known VHMS massive sulphide deposits - JORC resources, 50km of strike of host rocks.
- 2011 drilling: 13.2m @ 3.3% copper, 4.0% zinc, 30g/t silver & 0.4g/t gold - Drilling planned to extend known deposits, geophysics, geochemistry to detect new targets

Split Rocks Lithium & Gold, WA (ZNC 100%)

- 100% owned exploration licences covering 500km² in emerging Forresteria lithium district - Surface sampling



defined two new gold drill targets, permitting in progress.

Red Mountain Gold-Silver Project QLD (ZNC 100%)

- Initial reconnaissance rock chip sampling results up to 114 g/t silver and 0.69 g/t gold, associated with strong, open ended silver soil anomaly. Follow-up sampling planned

Waratah Well Lithium -Tantalum Project WA (ZNC 100%)

- Extensive outcropping pegmatites (3km x 2km) in north east of tenure, encouraging lithium rock chip sample results up to 0.34% Li₂O as well as widespread, high-grade tantalum up to 1166ppm Ta₂O₅.

Earaheedy Manganese Project, WA (ZNC 100%) - Manganese province discovered by ZNC, potential DSO drill intersections (+40%Mn)

Mt Alexander Iron Ore, WA (ZNC 100%) - JORC magnetite Resource 566 Mt @ 30.0% Fe close to West Pilbara coast, 50% of target untested - Seeking development partner/ buyer for iron project

Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i>	Samples were collected by a field technician under the supervision of a field geologist. 1 to 5m continuous, horizontal, rock chip, channel samples were taken at depths from 0.5m to 1.5m depth selected on geological criteria along the western wall of each excavator trench.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	Samples are believed to be representative of the trench intervals they come from, for each trench two duplicate field samples were taken over two selected intervals to assess field sample repeatability.
	<i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.</i>	Generally 1m but locally up to 5m continuous, horizontal, rock chip, channel samples of 1-2kg were broken using a hammer from the trench wall. Samples were crushed in the laboratory and then pulverised before analysis.

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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.	Trenches were geologically described in detail including lithology, alteration, weathering, veining, structural measurements were made of the orientations of veins, faults, shears, foliation and geological contacts.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Quantative logging each one metre trench interval was also photographed
	The total length and percentage of the relevant intersections logged.	1153m of trenching, 100% 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 AIS Laboratories inTownsville, 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.	Samples were taken systematically and are believed to be representative of the trench intervals they come from, for each trench two duplicate field samples were taken over two selected intervals to assess field sample repeatability. The field duplicates returned gold assays with reasonable field repeatability.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Each sample was 1kg to 2kg in weight which is appropriate to test for the grain size of material.
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, duplicate 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



	<i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i>	Approximately 1 certified reference standard and one blank were submitted for per batch of each trench samples. Standards and blanks returning appropriate levels.
Verification of sampling and assaying	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Two company personnel have observed the assayed samples
	<i>The use of twinned holes.</i>	No drilling
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Field data were all recorded on paper log sheets and sample sheets and then entered into a digital company database
	<i>Discuss any adjustment to assay data.</i>	No adjustments were made.
Location of data points	<i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	Sample location is based on GPS coordinates +/-5m accuracy
	<i>Specification of the grid system used.</i>	The grid system used to compile data was MGA94 Zone 55
Location of data points - continued	<i>Quality and adequacy of topographic control.</i>	Topography control is +/- 5m.
Data spacing and distribution	<i>Data spacing for reporting of Exploration Results.</i>	All samples greater than 0.05g/t Au are shown on figure 3.
	<i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i>	The data alone will not be used to estimate mineral resource or ore reserve
	<i>Whether sample compositing has been applied.</i>	Simple arithmetic weighted average mathematical compositing applied.
Orientation of data in relation to geological structure	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	Trenches were orientated at angles of approximately 70° to 80° to the main ferruginous quartz vein zones and as such does not unduly bias samples. Flat lying tension veins have been under sampled.
	<i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i>	No significant bias based on information to date
Sample security	<i>The measures taken to ensure sample security.</i>	Samples were kept in numbered bags until delivered to the laboratory
Audits or reviews	<i>The results of any audits or reviews of sampling techniques and data.</i>	Sampling techniques are consistent with industry standards

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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	<i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i>	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.
	<i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i>	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	<i>Acknowledgment and appraisal of exploration by other parties.</i>	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 2 nd August 2017.
Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	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	<i>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:</i>	No drilling
	<i>o easting and northing of the drill hole collar</i>	
	<i>o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i>	
	<i>o dip and azimuth of the hole</i>	
	<i>o down hole length and interception depth</i>	
	<i>o hole length.</i>	
<i>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.</i>		
Data aggregation methods	<i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</i>	Simple arithmetic weighted average mathematical compositing applied. Significant results are reported for their individual assay results as well as at a 1g/t Au and 0.4 g/t Au cut-off grades in Table. No high grade cuts applied.
	<i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i>	Refer above

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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.	Trenches were orientated at angles of approximately 70° to 80° to the main ferruginous quartz vein zones and as such does not unduly bias samples. Flat lying tension veins have been under sampled.
	If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	The intercepts reported are considered to be approximately 75% of true width intervals.
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. Significant results shown in Table 1.
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 Figure 3. Significant results shown in Table 1. Example of whole trench gold interval reported in text.
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).	Review of trace element zonation and alteration assemblages in progress to assess deeper drill targeting, as well as further surface geochemical sampling to define the limits of the open ended Guppy Strike 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.

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