

# ASX

## ANNOUNCEMENT



# MAIDEN GOLD RESOURCE FOR TICK HILL TAILINGS

Diatreme Resources Limited is an Australian based diversified mineral explorer with significant projects in WA and QLD.

The Board and senior personnel exhibit wide experience, ranging through the exploration, development and financing phases of resource project management.

Australian Securities Exchange  
Codes: DRX, DRXO

Board of Directors:  
Non-Executive:  
William Wang - Chairman  
Andrew Tsang  
Daniel Zhuang

Executive:  
Neil McIntyre – Chief Executive  
Tuan Do – CFO & Co. Secretary  
Ian Reudavey – Chief Geologist

Key Projects:  
• Cyclone Zircon Project  
• Tick Hill Gold Project  
• Cape Bedford Silica/HMS Project  
• Clermont Copper Project

Postal Address:  
PO Box 10288  
Brisbane Adelaide Street  
QLD 4000

Registered Office:  
Level 2, 87 Wickham Terrace  
Spring Hill, QLD, 4000

Ph: +61 (0)7 3832 5660  
Website: [www.diatreme.com.au](http://www.diatreme.com.au)  
Email: [manager@diatreme.com.au](mailto:manager@diatreme.com.au)

**19th January 2016**

### HIGHLIGHTS

**\* Maiden Mineral Resource declared for Tick Hill Gold Project's tailings material, estimated at 630kt at 1.08 g/t Au containing 680kg (22,000 troy ounces) gold**

**\* Further work planned to determine optimal grind size to balance gold extraction and energy input, develop process flowsheet and complete capital and operating cost estimates at historically rich mine near Mount Isa, Qld.**

Diatreme Resources Limited (ASX:DRX) announced today a major milestone for its Tick Hill Gold Project, with a maiden Mineral Resource estimate for tailings material from the former mine near Mount Isa, Qld.

Diatreme's CEO, Mr Neil McIntyre said the resource estimate built on recent positive drilling results which confirmed significant gold mineralisation in the tailings dam at the historically rich mine, along with encouraging results from first stage metallurgical testwork which showed excellent cyanide leach recoveries from the regrinding of tailings material.

"Diatreme has been focused on progressing this attractive project as quickly as possible and the Mineral Resource estimate is another vote of confidence in Tick Hill's potential. We are now conducting further studies to determine the process flowsheet and develop capital and operating cost estimates," Mr McIntyre said.

"With Australian dollar gold prices currently climbing above \$1,500 an ounce, Tick Hill has great potential to deliver near-term cash flow for shareholders' benefit."

Mr McIntyre added: “The Company in conjunction with its Joint Venture partner Superior Resources Ltd (ASX:SPQ) is now examining methods for the full exploitation of Tick Hill’s gold potential, both internally and with input from external specialist advisers and mining contractors. These methods may include concurrently with the establishment of a tailings processing operation the de-watering of the existing mine workings to recover potentially available material from within the existing mine drives and stopes, and the commencement of new mining activity in high grade offshoots identified in historical mine exploration records but not mined during the final stages of full mine closure.”

## TICK HILL TAILINGS MINERAL RESOURCE ESTIMATE

Diatreme Resources has completed a Mineral Resource estimate for the tailings material located within the rehabilitated tailings dam at the Tick Hill Gold Project in northwest Queensland.

The Tick Hill Gold Mine operated from August 1991 through to March 1995, with the processing plant comprising crushing and milling circuits designed to deliver a product with a p80 of 70µm to a CIL circuit for gold recovery. Tailings were discharged into a tailings dam comprising two paddocks of a “turkeys nest” construction with a perimeter embankment with a clay core to retain tailings.

Following successful exploration drilling programs in July and September 2015, and completion of a comprehensive first stage metallurgical testwork program with positive results in December 2015, sufficient data is available to develop a resource model for the Tick Hill tailings material.

**The Mineral Resource estimate for Tick Hill tailings is 630 kt at 1.08 g/t Au at 0.5 g/t Au cut-off grade.**

TABLE 1: TICK HILL TAILINGS RESOURCE ESTIMATE

Category	Location	Au cut-off g/t	Material Volume '000 m <sup>3</sup>	Material Density	Material '000 t	Au g/t	Au kg	Au t oz
INDICATED	West Paddock	0.5	245	1.4	345	0.80	275	8,800
INDICATED	East Paddock	0.5	205	1.4	285	1.42	405	13,000
<b>INDICATED</b>	<b>TOTAL</b>	<b>0.5</b>	<b>450</b>	<b>1.4</b>	<b>630</b>	<b>1.08</b>	<b>680</b>	<b>21,800</b>

Table 2 lists the drill hole collars used for the resource estimate, Figure 1 shows the location of the Tick Hill tailings resource and the drill hole collars, and representative cross sections are presented as Figure 2. Technical details concerning the deposit, exploration drilling program and the resource estimation are presented in Appendix 1 (including JORC Table 1), and summarised below.

A summary of information material to understanding of the mineral resource estimate includes;

- Geology – the mineralisation comprises fine sand and silt tailings material within the two paddocks of the historical Tick Hill Gold Mine tailings dam.
- Sampling – 1m samples were collected via a cyclone from aircore drilling of the tailings dam and submitted to a commercial laboratory. Sub-sampling of samples >3.2kg in weight was by riffle splitting. Samples were pulverised and a split taken for analysis.
- Drilling – drilling was undertaken by the company owned and operated aircore drilling rig utilising NQ rods and a blade bit with 3m drill runs. All drill holes are vertical.
- Classification – the mineral resource is classified as Indicated based on the drill and assay data spacing (25m spaced offset grid with 1m downhole samples).
- Analysis – samples were analysed for gold only using a 50g charge for FA (ALS method AA26).
- Estimation – Micromine software was utilised to construct a 3D wireframe for each tailings paddock, using a combination of high resolution DEM data, drill logging data and reported tailings dam design parameters. A block model was generated within the wireframe, and gold values assigned by ID3 interpolation of the drill assay data.
- Cut-off grade – all material within the tailings dam is considered mineralised such that a defined cut-off grade has not been routinely applied to drill data. Evaluation of the resultant block model shows that a nominal cut-off grade of 0.5 g/t Au can be applied to the reported resource estimate.

- Mining and metallurgical parameters – possible mining methods include conventional truck and shovel mining or hydraulic mining. Mining will be relatively simple given the shallow depth/thickness of the mineralisation, lack of overburden, and the free-digging nature of the material. Metallurgical testwork shows that very high levels of gold extraction can be achieved by cyanide leaching of re-ground tailings material.

Based on exploration drilling results, the combined weighted average grade for the western paddock was calculated at 0.81 g/t Au (88.8m at 0.73 g/t Au from reconnaissance drilling and 107.1m at 0.88 g/t Au from infill drilling) and the combined weighted average grade for the eastern paddock was calculated at 1.42 g/t Au (74.1m at 1.42 g/t Au from reconnaissance drilling and 81.2m at 1.43 g/t Au from infill drilling). The tailings dam was calculated to have an average weighted grade of **1.08 g/t Au** based on the combination of reconnaissance and infill drilling (including a top cut of 4.0 g/t Au).

The metallurgical testwork completed indicates that very high levels of gold extraction can be achieved by cyanide leaching of re-ground tailings material, and this coupled with a significant proportion of water soluble gold provides encouragement that efficient processing of the Tick Hill tailings material can be achieved.

Further studies are being planned to help determine the optimal grain size required to balance leach extraction rates with energy requirements for regrinding of the tailings, which will then allow design of a process flowsheet, determination of capital and operating costs, and development of a financial model to assess the economic potential for mining and processing of the tailings material.

Mr McIntyre added: “Demand from Chinese and Indian consumers along with central banks is providing a favourable outlook for gold prices, and with the added advantage of a weak Australian dollar, Tick Hill represents a highly profitable opportunity for Diatreme Resources. The tailings material is just the first step as we unlock the potential of this well-located project for shareholders, adding to our pipeline of attractive mining projects around Australia, including our flagship Cyclone Zircon Project.”



**Neil McIntyre**  
CEO

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### **Competent Person Statement**

*The information in this report, insofar as it relates to Exploration Results and Mineral Resources is based on information compiled by Mr Ian Reudavey, who is a full time employee of Diatreme Resources Limited and a Member of the Australian Institute of Geoscientists. Mr Reudavey has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken 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 Reudavey consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.*

### **TICK HILL BACKGROUND**

The Tick Hill Gold Mine operated from August 1991 through to March 1995, with commissioning of the site processing plant in December 1991. The plant comprised crushing and milling circuits delivering a product with a p80 of 70µm to a CIL circuit. Tailings were discharged in to a tailings dam comprising two paddocks of a “turkeys nest” construction in which a perimeter embankment with a clay core retains tailings. Wall heights range from 6m to 10.5m. Since decommissioning the surface has been capped and both the surface and batters seeded, with good vegetation cover now present.

The total published production for the Tick Hill Gold Mine was 705,000t at 22.6 g/t Au for 15,900kg Au at 97% gold recovery. Some initial high grade open pit ore was mined and transported to the Carpentaria Gold operations at Ravenswood to provide early cash flow to the project, which has been estimated at 20,000t based on the reported 19,000oz produced at Ravenswood in the 1991/1992 financial year (with head grades for that year reported as 30.2 g/t Au).

The tailings dam covers approx. 8 ha and could contain between 600,000-650,000t of tailings material,

based on historical records.

Hole ID	Easting	Northing	RL	Hole Depth	Dip	Azi	Significant Intersection			
							From	To	Interval	Au g/t
THT001	388746	7605591	349.1	8.7	-90°	0°	0.5	8.7	8.2	1.20
THT002	388748	7605542	349.5	7.7	-90°	0°	0.6	7.6	7.0	1.34
THT003	388748	7605489	350.0	7.6	-90°	0°	0.6	7.6	7.0	1.36
THT004	388693	7605592	348.7	8.1	-90°	0°	0.6	8.1	7.5	0.97
THT005	388694	7605545	349.0	7.1	-90°	0°	0.6	7.1	6.5	1.54
THT006	388697	7605491	349.8	6.7	-90°	0°	0.5	6.7	6.2	1.85
THT007	388702	7605442	350.7	6.6	-90°	0°	0.6	6.6	6.0	1.58
THT008	388650	7605593	348.1	6.2	-90°	0°	0.6	6.2	5.6	1.15
THT009	388646	7605543	348.6	6.3	-90°	0°	0.6	6.3	5.7	1.62
THT010	388647	7605493	349.2	6.1	-90°	0°	0.6	6.1	5.5	1.27
THT011	388649	7605443	349.9	5.7	-90°	0°	0.6	5.6	5.0	1.82
THT012	388648	7605398	350.5	4.5	-90°	0°	0.6	4.5	3.9	1.51
THT013	388550	7605590	348.8	6.6	-90°	0°	0.6	5.6	5.0	0.66
THT014	388545	7605544	349.3	7.6	-90°	0°	0.6	6.6	6.0	0.48
THT015	388546	7605493	350.3	8.6	-90°	0°	0.6	8.6	8.0	0.85
THT016	388549	7605444	350.5	8.3	-90°	0°	0.6	8.3	7.7	0.79
THT017	388549	7605391	351.2	8.6	-90°	0°	0.6	8.6	8.0	1.08
THT018	388499	7605591	349.0	7.6	-90°	0°	0.6	7.6	7.0	0.62
THT019	388497	7605543	349.9	8.8	-90°	0°	0.6	8.8	8.2	0.58
THT020	388495	7605493	350.4	9.1	-90°	0°	0.6	9.1	8.5	0.82
THT021	388495	7605446	350.7	9.1	-90°	0°	0.6	9.1	8.5	0.74
THT022	388449	7605593	349.3	6.8	-90°	0°	0.8	6.8	6.0	0.46
THT023	388446	7605537	350.3	8.8	-90°	0°	0.8	8.8	8.0	0.64
THT024	388447	7605493	350.6	8.7	-90°	0°	0.8	8.7	7.9	0.83
THT033	388722	7605615	348.8	5.4	-90°	0°	0.4	4.4	4.0	1.15
THT034	388722	7605564	349.2	8.2	-90°	0°	0.5	8.1	7.6	1.51
THT035	388722	7605515	349.6	6.7	-90°	0°	0.5	6.7	6.2	1.86
THT036	388722	7605464	350.4	7.0	-90°	0°	0.2	7.0	6.8	1.67
THT037	388672	7605615	348.1	6.7	-90°	0°	0.6	6.6	6.0	0.93
THT038	388671	7605564	348.6	6.4	-90°	0°	0.4	6.4	6.0	1.23
THT039	388670	7605515	349.1	6.3	-90°	0°	0.6	6.3	5.7	1.68
THT040	388671	7605464	349.9	6.4	-90°	0°	0.6	6.4	5.8	1.55
THT041	388672	7605415	350.5	5.6	-90°	0°	0.7	5.6	4.9	1.54
THT042	388623	7605612	347.2	5.8	-90°	0°	0.6	4.6	4.0	0.79
THT043	388622	7605561	348.1	6.1	-90°	0°	0.6	6.1	5.5*	1.33
THT044	388622	7605513	348.7	6.2	-90°	0°	0.7	6.2	5.5	1.42
THT045	388622	7605462	349.3	6.2	-90°	0°	0.6	6.2	5.6	1.41
THT046	388622	7605411	350.1	6.4	-90°	0°	0.6	6.4	5.8	1.49
THT047	388624	7605367	350.8	4.0	-90°	0°	0.5	4.0	3.5	1.87
THT048	388568	7605618	349.4	7.4	-90°	0°	0.5	7.4	6.9	0.38
THT049	388570	7605567	348.6	7.3	-90°	0°	0.7	7.3	6.6	0.60
THT050	388571	7605516	350.3	8.5	-90°	0°	0.8	8.5	7.7	0.95
THT051	388573	7605465	350.5	8.2	-90°	0°	0.5	8.2	7.7	1.08
THT052	388574	7605414	350.9	8.0	-90°	0°	0.5	8.0	7.5	0.96
THT053	388574	7605365	351.3	3.7	-90°	0°	0.9	3.7	2.8	2.59^
THT054	388521	7605612	349.0	8.8	-90°	0°	0.4	8.8	8.4*	0.98
THT055	388522	7605565	349.0	7.2	-90°	0°	0.4	7.2	6.8*	0.45
THT056	388522	7605515	349.9	9.1	-90°	0°	0.6	9.1	8.5	0.85
THT057	388520	7605469	350.3	8.7	-90°	0°	0.6	8.6	8.0	0.93
THT058	388520	7605415	351.1	8.8	-90°	0°	1.0	8.8	7.8	1.02
THT059	388474	7605611	348.9	7.9	-90°	0°	1.4	7.9	6.5*	0.55
THT060	388474	7605563	349.7	8.3	-90°	0°	0.6	8.3	7.7*	0.82
THT061	388474	7605511	350.3	8.5	-90°	0°	0.6	8.5	7.9	1.03
THT062	388473	7605464	350.7	8.4	-90°	0°	0.6	8.4	7.8	0.94
THT063	388448	7605445	351.0	5.7	-90°	0°	1.2	5.7	4.5	0.98

- Coordinates are UTM, Zone 54, GDA94 from handheld GPS
- Hole Depth and Intervals in metres
- RL assigned from high resolution project DTM
- Intervals marked with \* have missing samples (no sample return from drilling)
- Intervals marked with ^ have had a top cut of 4.0 g/t applied

**Table 1: Tailings Mineral Resource Drill Hole Information**

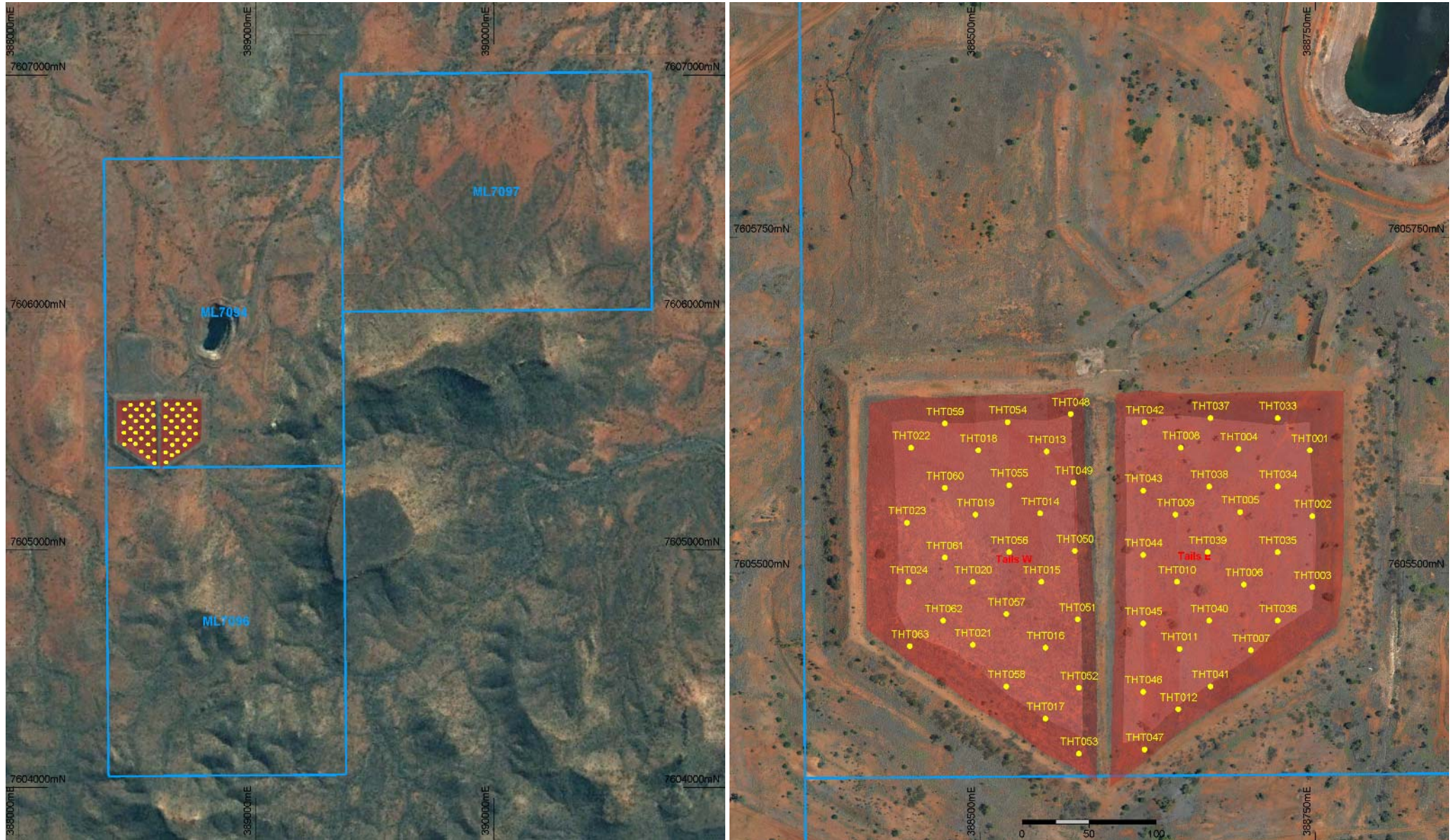
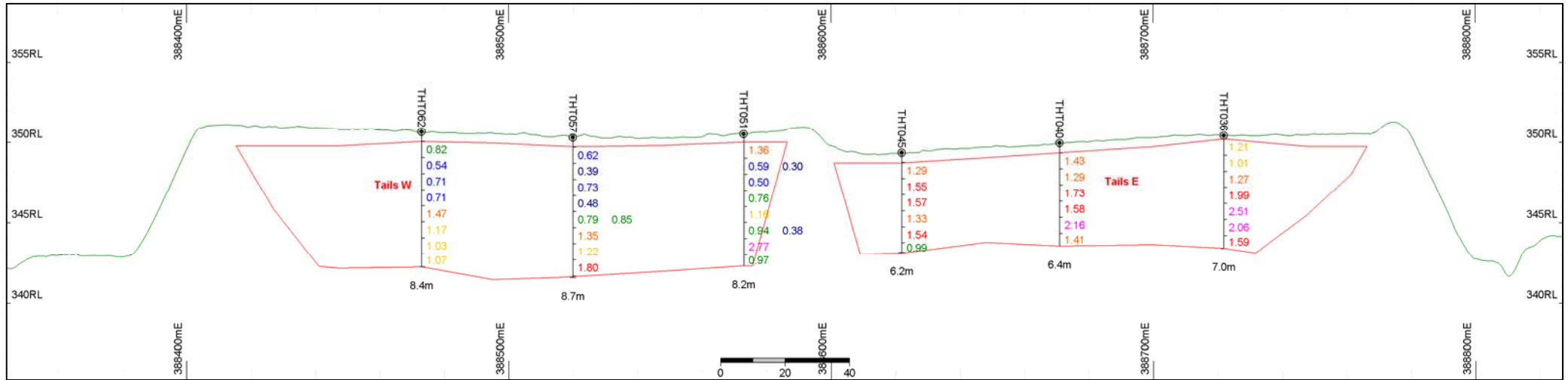
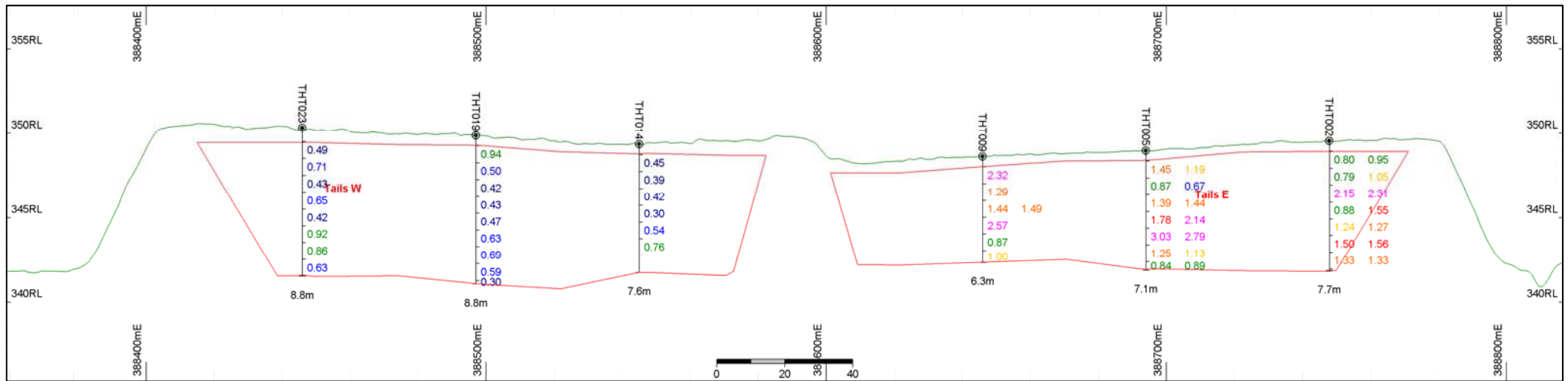


Figure 1: Location Map, Tick Hill Tailings resource outline and drill collars on Google Earth

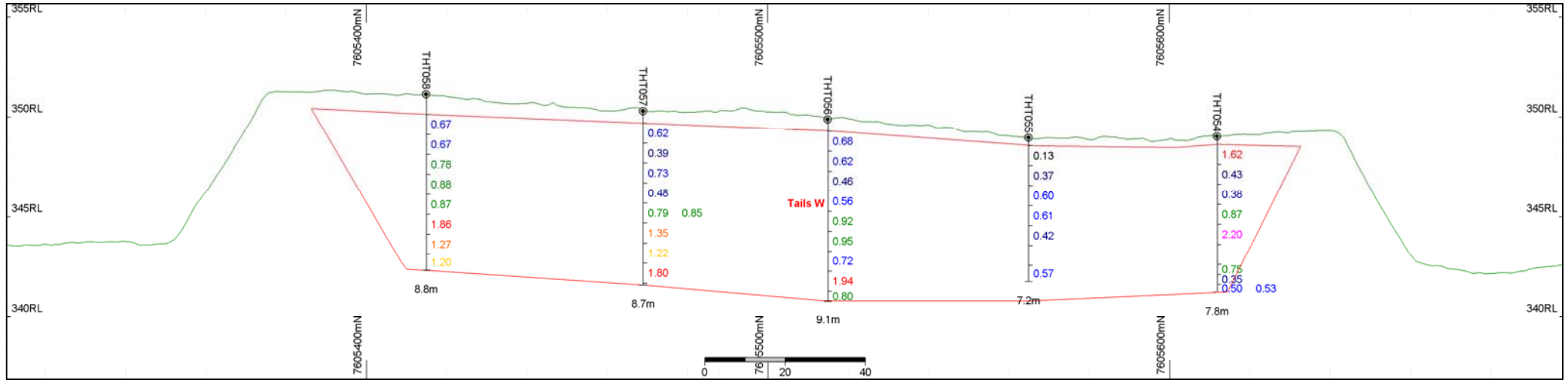


Southern end

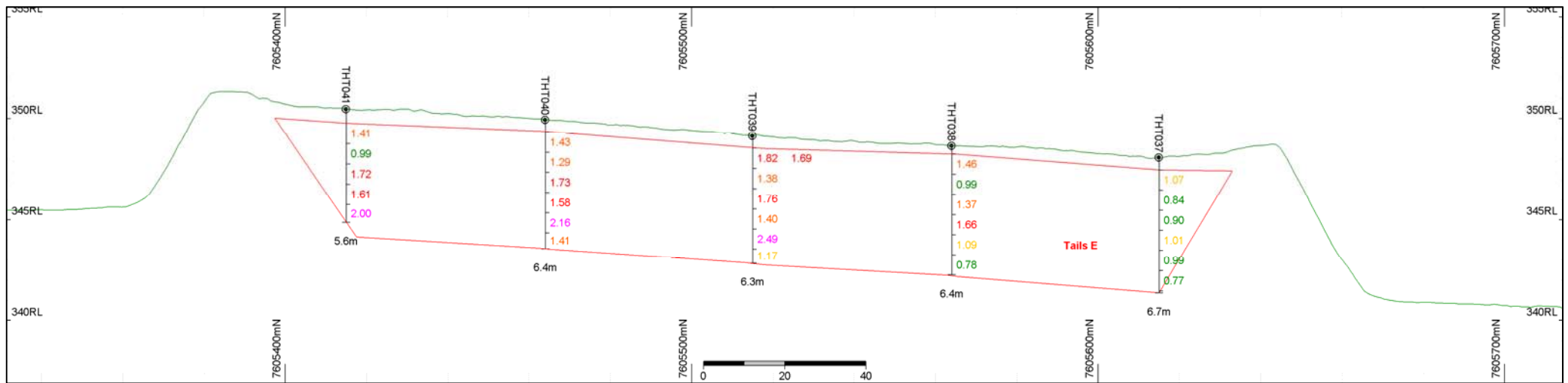


Northern end

Figure 2a: Drill Section (E – W, looking N), Tick Hill Tailings resource outline and drill trace (5x vertical exaggeration)



Western paddock



Eastern paddock

Figure 2b: Drill Section (N – S, looking W), Tick Hill Tailings resource outline and drill trace (5x vertical exaggeration)



## Appendix 1: JORC Code, 2012 Edition - Table 1

## Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Air core drilling was used to obtain 1m samples from which ~1.5kg was pulverized to produce a 50g charge for fire assay.</li> <li>Samples are 1m down hole intervals of air-core drill cuttings collected from rig-mounted cyclone, the entire sample was collected on site and later riffle split, with half retained for reference (and bulk sample) and half submitted to the laboratory, with further riffle splitting of those samples &gt;3.2kg in weight prior to pulverizing.</li> <li>1m sample intervals are considered appropriate for drilling of mineralised tailings.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).</li> </ul>	<ul style="list-style-type: none"> <li>Vertical NQ air-core drilling utilizing blade bit, 3m drill runs.</li> <li>Drilling technique was continually adjusted to suit the prevailing drilling conditions (e.g. dry, moist, wet with variable clay content).</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Field assessment and logging of sample recovery and sample quality.</li> <li>Sample weight from laboratory used to assess sample recovery.</li> <li>Clearance of drill string after every 1m drill interval.</li> <li>Sample chute cleaned between samples and regular cleaning of cyclone to prevent sample contamination.</li> <li>No relationship is evident between sample recovery and grade.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Geological logging of the total hole by field geologist, with retention of sample in chip trays to allow subsequent re-logging / re-interpretation of data.</li> <li>Tailings dam is capped by ~0.6m rock and topsoil, with a clay base – both were readily identifiable from the tailings material.</li> <li>Qualitative logging includes material lithology and colour.</li> <li>Logging data stored in both hardcopy and digital format.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Sub-sampling was undertaken off site after samples had air dried, by riffle splitting (25mm aperture) with half sample submitted to ALS laboratory in Townsville for sample preparation, and half sample retained for reference and/or bulk sample.</li> <li>• Sample was oven dried, weighed, riffle split if &gt;3.2kg, and pulverized.</li> <li>• 50g sub-sample for assay is riffle split from homogenized pulverised sample.</li> <li>• Two field duplicates were submitted from this exploration program, results are within reasonable ranges.</li> <li>• Sample size is considered appropriate for the material sampled.</li> </ul>
<i>Quality of assay data and laboratory tests</i>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></li> <li>• <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Analysis undertaken by ALS Townsville utilizing AA26 (50g Fire Assay), with a 0.01 ppm Au detection limit.</li> <li>• Assaying and laboratory procedures are considered appropriate for gold, technique is considered a total analysis.</li> <li>• No external quality control procedures have been adopted at this time.</li> </ul>
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Significant intersections have been verified by company personnel from both Diatreme Resources and Superior Resources.</li> <li>• No twinned holes have been drilled at this time.</li> <li>• Geological data captured on paper and stored in electronic format, assay data stored in electronic format.</li> <li>• An adjustment was made to one sample assay, with an assay grade of 43.4 g/t Au being cut to 4.0 g/t Au (based on maximum assay from reconnaissance drilling) for calculation of significant intersections.</li> </ul>
<i>Location of data points</i>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Handheld GPS survey of drill hole collars, accurate to within 4m.</li> <li>• UTM coordinates, Zone 54, GDA94 datum.</li> <li>• Topographic control was established by applying RL values from a high resolution DTM included with technical data package from previous owner.</li> </ul>
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and</i></li> </ul>	<ul style="list-style-type: none"> <li>• Drill holes spaced at 50m x 50m, with the infill drilling offset 25m E-W and N-S from the reconnaissance drilling.</li> <li>• Drill spacing and distribution is sufficient to allow reporting of exploration results.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>classifications applied.</i></p> <ul style="list-style-type: none"> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Downhole sample compositing has been applied for reporting of exploration results as a length weighted total hole intersection.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li><i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></li> </ul>	<ul style="list-style-type: none"> <li>Vertical drill holes are considered appropriate for unbiased sampling of the target mineralisation .</li> <li>Exploration drilling has been completed on a regular grid within each paddock of the tailings dam.</li> <li>The dam was filled from the southern end, with tailings and water flowing north along the natural slope of the ground surface.</li> <li>There are no comprehensive records available for the operation / utilisation of the tailings dam.</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>Sample collection and transport from the field was undertaken by company personnel, with samples delivered directly to the laboratory.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>No audits or reviews of the sampling techniques and data have been undertaken at this time.</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li><i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></li> <li><i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Tick Hill tailings dam occurs within ML7094 and ML7096 in Queensland, adjoining mining leases held by Diatreme Resources.</li> <li>The Tick Hill Gold Project (incorporating ML's 7094, 7096, 7097) is operated as a Joint Venture between Diatreme Resources Ltd and Superior Resources Ltd.</li> <li>Exploration was conducted under an approved Plan of Operations for exploration and rehabilitation activity.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>No exploration of the tailings dam has been undertaken by other parties.</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Tick Hill tailings dam comprises tailings material from the Tick Hill Gold Mine CIL processing plant, which operated from 1992 to 1995</li> <li>Mineralisation occurs within silt and clay tailings material.</li> </ul>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li><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> <ul style="list-style-type: none"> <li><i>easting and northing of the drill hole collar</i></li> <li><i>elevation or RL (Reduced Level) of the drill hole collar</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Drill hole collar table with significant intersections is included in the main body of the announcement.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>○ dip and azimuth of the hole</li> <li>○ down hole length and interception depth</li> <li>○ hole length.</li> </ul> <ul style="list-style-type: none"> <li>● 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.</li> </ul>	
Data aggregation methods	<ul style="list-style-type: none"> <li>● In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>● 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.</li> <li>● The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>● Exploration results are reported as a length weighted average of the total hole intercept, as the basal sample was truncated at the intersection of the clay base and is typically &lt;1m.</li> <li>● A top cut of 4.0 g/t Au was applied to one high grade assay of 43.4 g/t Au, as this is believed to represent an outlier in the database which may reflect coarse gold. The top cut of 4.0 g/t Au is based on the maximum assay returned from reconnaissance drilling.</li> <li>● Drill intervals with no sample return were treated as blanks / gaps in the data with no assay value assigned. Two such drill intervals were reported from the reconnaissance drilling, and seven from infill drilling.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>● These relationships are particularly important in the reporting of Exploration Results.</li> <li>● If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>● If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>● As the mineralization is associated with tailings fill a maximum beaching slope of 2° can be assumed.</li> <li>● All drilling is vertical; hence the drill intersection is essentially equivalent to the true width of mineralisation.</li> <li>● However, the geometry and controls of grade distribution within the tailings are unknown at this time.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>● 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.</li> </ul>	<ul style="list-style-type: none"> <li>● A map of the drill collar locations and the tailings dam is included in the main body of the announcement. Representative cross sections of the drilling are included in the main body of the announcement.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>● 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.</li> </ul>	<ul style="list-style-type: none"> <li>● Not applicable, all results have been reported.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>● 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.</li> </ul>	<ul style="list-style-type: none"> <li>● Geological observations suggest an increase in clay content down the tailings profile and towards the northern end of the tailings dam.</li> <li>● No bulk density measurements have been undertaken.</li> <li>● Water was encountered at the base of the tailings on the northern margin of the tailings dam and two holes could not be completed.</li> <li>● First stage metallurgical testwork completed using ~40kg bulk samples from each paddock. Calculation of bulk sample head feed grades from this work was slightly lower (&lt;10%) than grades calculated from the</li> </ul>

Criteria	JORC Code explanation	Commentary
		contributing drill samples (E paddock 1.27 g/t Au cf. 1.33 g/t Au, W paddock 0.71 g/t Au cf. 0.77 g/t Au). Results have indicated that with re-grinding very high levels of gold extraction can be achieved by cyanide leaching.
<i>Further work</i>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Metallurgical testwork will continue with a focus on optimal grind size to allow development of a preliminary process flow sheet.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

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

Criteria	JORC Code explanation	Commentary
<i>Database integrity</i>	<ul style="list-style-type: none"> <li><i>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</i></li> <li><i>Data validation procedures used.</i></li> </ul>	<ul style="list-style-type: none"> <li>Drill data logged manually in the field, uploaded to Micromine and validated during loading in to master database.</li> <li>General database validation using Micromine prior to resource estimation.</li> <li>Detailed database validation by manual/visual checking using Micromine.</li> </ul>
<i>Site visits</i>	<ul style="list-style-type: none"> <li><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></li> <li><i>If no site visits have been undertaken indicate why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>Competent Person planned and supervised the exploration drilling campaigns and is familiar with the layout, mineralisation and material characteristics of the tailings dam.</li> </ul>
<i>Geological interpretation</i>	<ul style="list-style-type: none"> <li><i>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</i></li> <li><i>Nature of the data used and of any assumptions made.</i></li> <li><i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i></li> <li><i>The use of geology in guiding and controlling Mineral Resource estimation.</i></li> <li><i>The factors affecting continuity both of grade and geology.</i></li> </ul>	<ul style="list-style-type: none"> <li>There is high confidence in the geological interpretation given the mineralisation comprises tailings material within a tailings dam.</li> <li>The geological interpretation of the mineralisation is based upon reported operations, historical photographs of the tailings dam, and drill logging.</li> <li>Alternative interpretations on Mineral Resource estimations have limited effect.</li> <li>Geology has limited use in guiding and controlling Mineral Resource estimation for tailings mineralisation.</li> <li>Continuity of grade is believed to be affected by feed grades of the mill, placement and sequencing of tails outlets in the tailings dam and sedimentary processes relating to deposition of tailings slurry.</li> </ul>
<i>Dimensions</i>	<ul style="list-style-type: none"> <li><i>The extent and variability of the Mineral Resource expressed as length</i></li> </ul>	<ul style="list-style-type: none"> <li>The Mineral Resource is confined to two cells of a polygonal tailings</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>(along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</i>	dam. The tailings dam fill has a surface area of approximately 8 ha and maximum dimensions of 360m E-W (each cell 170m) and 290m N-S. The tailings material is capped by 0.4 to 1.2m of rocky soil and ranges in thickness from 4 to 8.5m.
<i>Estimation and modelling techniques</i>	<ul style="list-style-type: none"> <li><i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i></li> <li><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></li> <li><i>The assumptions made regarding recovery of by-products.</i></li> <li><i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></li> <li><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li><i>Any assumptions behind modelling of selective mining units.</i></li> <li><i>Any assumptions about correlation between variables.</i></li> <li><i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li><i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li><i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<ul style="list-style-type: none"> <li>Resource estimation was undertaken using Micromine software, with inverse distance cubed interpolation method used for Au.</li> <li>Au grades were cut to 4.0 g/t Au (applicable to one sample only).</li> <li>Mine production records suggest that 685,000t of tailings was generated on-site with a total gold recovery of 97% from ore averaging 22.6 g/t Au (i.e. 0.7 g/t Au in tailings).</li> <li>No assumptions have been made regarding recovery of by-products.</li> <li>There has been no estimation of deleterious elements (none known).</li> <li>A block size of 15m x 15m x 1m has been used, with a search ellipse of 50m x 35m x 3m used, minimum 2 and maximum 8 samples.</li> <li>The resource estimate shows good correlation with wireframe volumes and raw drill assay data.</li> <li>The block model was validated visually and statistically against drillhole data.</li> </ul>
<i>Moisture</i>	<ul style="list-style-type: none"> <li><i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li> </ul>	<ul style="list-style-type: none"> <li>Tonnages are estimated on a dry basis.</li> </ul>
<i>Cut-off parameters</i>	<ul style="list-style-type: none"> <li><i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>A nominal 0.5 g/t Au cut-off grade has been applied, but all of the tailings within the tailings dam is considered mineralised.</li> </ul>
<i>Mining factors or assumptions</i>	<ul style="list-style-type: none"> <li><i>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>Possible mining methods include hydraulic mining and conventional truck and shovel mining. No assumptions have been made regarding mining dilution as it is considered that all tailings will be able to be mined from within the confining boundaries (clay lined walls and floor) of the tailings dam.</li> </ul>
<i>Metallurgical</i>	<ul style="list-style-type: none"> <li><i>The basis for assumptions or predictions regarding metallurgical</i></li> </ul>	<ul style="list-style-type: none"> <li>Preliminary metallurgical testwork has demonstrated that the gold in</li> </ul>

Criteria	JORC Code explanation	Commentary
factors or assumptions	<i>amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</i>	the tailings includes a water soluble component that will be readily recoverable, and that conventional cyanide leaching of re-ground tailings achieves very high levels of gold extraction. There is no evidence of refractory or 'locked' gold in the tailings. While a process flow sheet has yet to be developed, the metallurgical testwork to date has not identified any significant issues.
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>The potential environmental impacts have yet to be determined in detail, but will largely be confined to existing disturbance associated with previous mining operations on the site.</li> <li>No waste rock disposal will be required.</li> <li>Process residue (tailings) can be confined to existing disturbance on site (e.g. decant pond or returned to tailings dam as a staged backfill).</li> </ul>
Bulk density	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>An assumed bulk density of 1.4 has been utilized for tonnage estimates, based on the theoretical density of silty tailings material.</li> <li>The assumed bulk density correlates with the defined volume of the tailings dam (generated from high resolution DTM, site surveys and drill data) and the reported mine production.</li> <li>The bulk density is assumed to be constant for both the silt and silty clay material.</li> </ul>
Classification	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul style="list-style-type: none"> <li>The primary factor for resource classification is drill spacing i.e. Au assay data density, as the mineralisation comprises mill tailings deposited in a tailings dam.</li> <li>Gold assays have shown some variability, but there are believed to be sufficient assays to give confidence to global gold grades.</li> <li>The result and classification used reflects the Competent Persons understanding of the deposit.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>There have been no audits or reviews of the Mineral Resource estimate at this time.</li> </ul>
Discussion of relative accuracy/	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the</li> </ul>	<ul style="list-style-type: none"> <li>A high level of confidence is placed on tonnage estimates as the volume of mineralisation is well defined and previous mine production has been reported.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>confidence</i>	<p><i>application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i></p> <ul style="list-style-type: none"> <li>• <i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i></li> <li>• <i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A high level of confidence is placed on the global grade estimates due to drill spacing and sample quantity. However, there has been some variability in gold assays and poor repeatability of some samples. Head feed grades for the bulk sample were calculated to be slightly lower (&lt;10%) than expected grades calculated from contributing drill samples.</li> <li>• A moderate level of confidence is placed on the local grade estimates as there has been poor repeatability of some samples and short range grade variability may result from 'alluvial' processes during emplacement and deposition of tails slurry.</li> </ul>