Saracen Mineral Holdings Limited

Saracen set for further growth in production and mine life following more outstanding drilling results across the board

Organic growth strategy continues to deliver exceptional results

11th November 2019

HIGHLIGHTS

- **Strong start to the FY20 exploration campaign, with outstanding drilling results from Carosue Dam and Thunderbox**
- **The results highlight the substantial potential for further growth in mine life and production at both centres**
- **A$50m FY20 exploration budget is the centrepiece of Saracen's highly successful organic growth strategy**
- **This strategy saw Reserves grow by 32% to 3.3Moz in FY19 at a discovery cost of just A$30 per Reserve ounce**

Carosue Dam

- At **Karari - Dervish**, thick high-grade drill results included:

Karari:
- **51m @ 8.5g/t**
- **24m @ 14.3g/t**
- **33m @ 7.5g/t**
- **18m @ 6.0g/t**

Dervish:
- **20m @ 4.6g/t**
- **21m @ 4.5g/t**
- **26m @ 3.5g/t**
- **17m @ 4.0g/t**

- At the **Atbara discovery (just 4km from the Carosue Dam mill),** framework drill results included (aggregated):
  - **139m @ 1.1g/t** (including 122m @ 1.1g/t, 8m @ 2.6g/t and 9m @ 1.1g/t)
  - **127m @ 1.3g/t** (including 90m @ 1.1g/t, 10m @ 1.0g/t and 27m @ 2.2g/t)
- At the **Carosue Dam Seismic Project**, 3D seismic survey completed with **results anticipated during the current quarter**
- At **Mt Celia regional**, air core drilling has identified another strong anomaly south of the previously reported Okavango prospect, with **new results up to 1640ppb**

Thunderbox

- At **Thunderbox A Zone underground**, drill results included **89m @ 2.0g/t** and **72m @ 2.4g/t**
- At **Thunderbox D Zone open pit**, drill results included **86m @ 1.7g/t** and **72m @ 2.4g/t**
- At **Otto Bore**, drill results included **8m @ 27.2g/t** and **13m @ 7.9g/t**

Saracen Managing Director Raleigh Finlayson said the latest results highlighted the significant growth potential at the Company's existing assets.

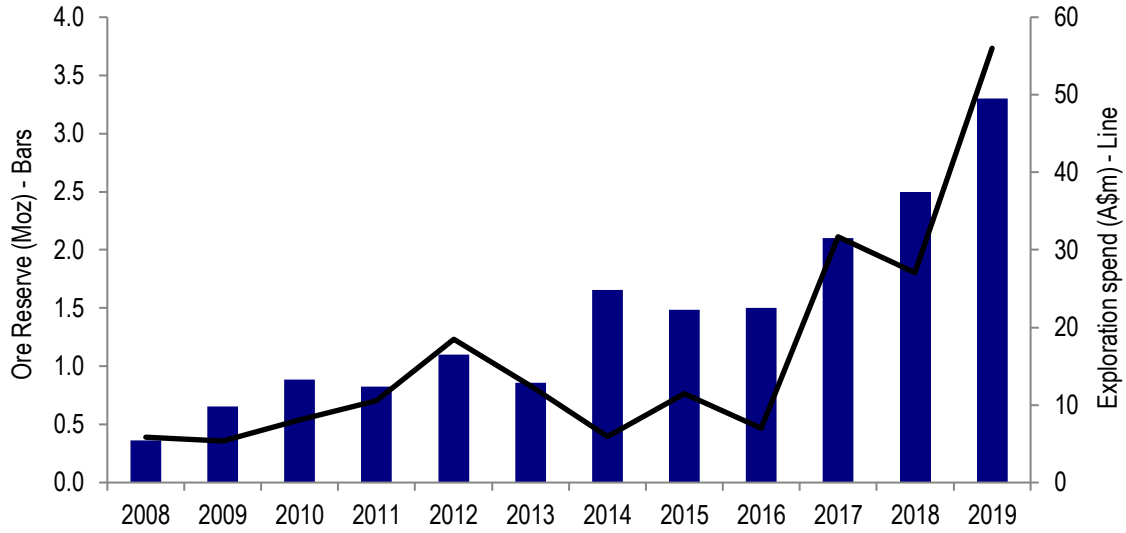
"Our organic growth strategy continues to deliver exceptional returns on our investment by any measure," he said. "There is still immense potential to grow production and mine life at our assets, which also allows us to capitalise on our existing infrastructure. This combination of extremely low discovery costs and access to existing infrastructure ensures we generate outstanding returns on our capital, which is our overall objective."

More growth in FY20

Western Australian gold miner Saracen Mineral Holdings (ASX: SAR) is pleased to report another round of strong drilling results.

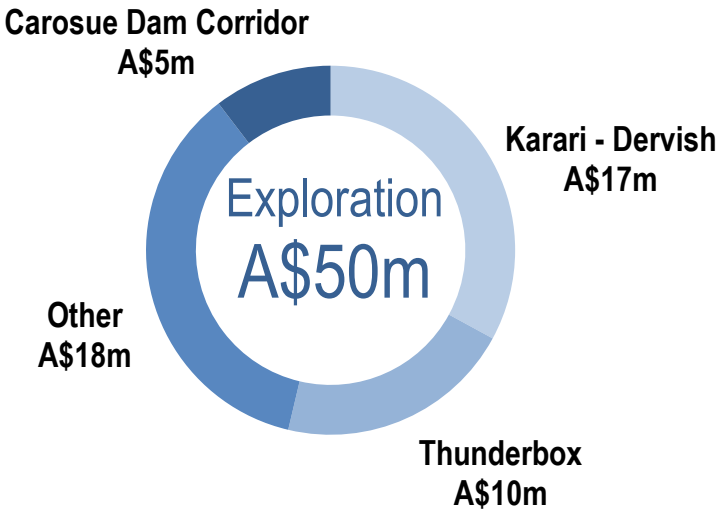
Saracen's increased exploration spend in recent years has delivered global-leading growth, with Reserves doubling over the past three years (after mining depletion) to a **record 3.3Moz** at 30 June 2019. FY19 was particularly successful, with a Reserve increase of 800,000oz despite 330,000oz mining depletion.

Figure 1 - Track record of exploration investment delivering growth



This track record of success (FY19 discovery cost of A$30 per Reserve oz) has motivated FY20 exploration guidance of A$50m.

Figure 2 – FY20 group exploration spend



The FY20 campaign has started very strongly, with A$16m invested on exploration activities in the recent September quarter and a host of impressive results returned across the portfolio.

Carosue Dam Operations - Drilling update

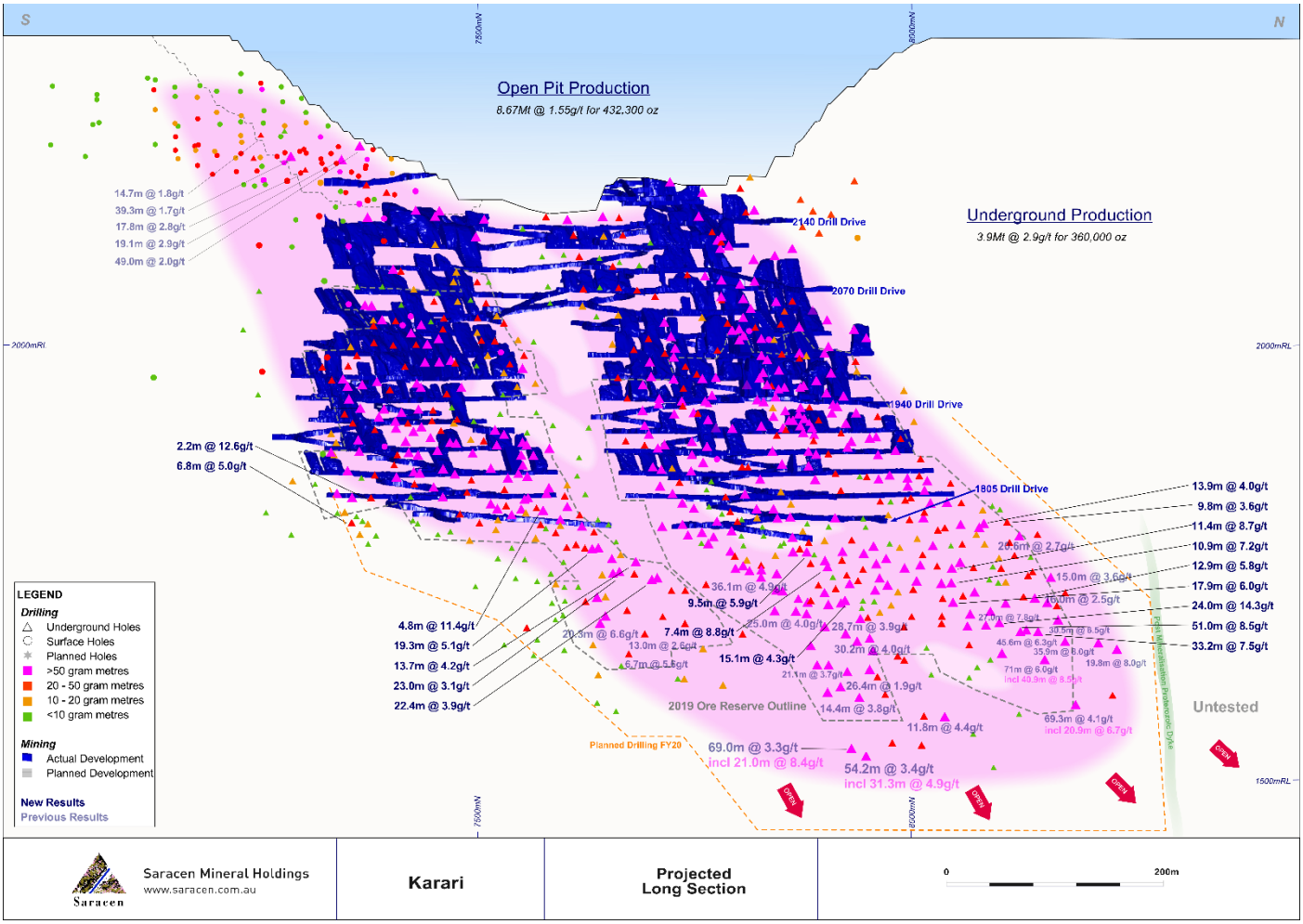
Karari - Dervish underground

The Karari - Dervish underground mine comprises two sister deposits, Karari and Dervish, adjacent to the Carouse Dam mill.

Karari drilling has focused on infill grade control following a significant increase in Ore Reserves at 30 June 2019. Drilling has continued with two underground rigs from the 1940 and 1916 drill drives. Multiple thick high grade results have confirmed the increasing grade profile with depth.

Significant results include **51m @ 8.5g/t**, **33m @ 7.5g/t** and **24m @ 14.3g/t**. The high grade shoots remain open at depth and will be tested further during FY20.

Figure 3 - Karari Long Section, New Drill Results (Karari-Dervish mine)



Drilling will revert to extensional exploration and Resource definition early in the March quarter 2020, when the new 1805 drill drive is fully developed. This will be located 135m below the existing drill platform to facilitate the next phase of Reserve growth, weighted to FY21. This will be counterbalanced by enhanced contributions in FY20 from other areas within the portfolio.

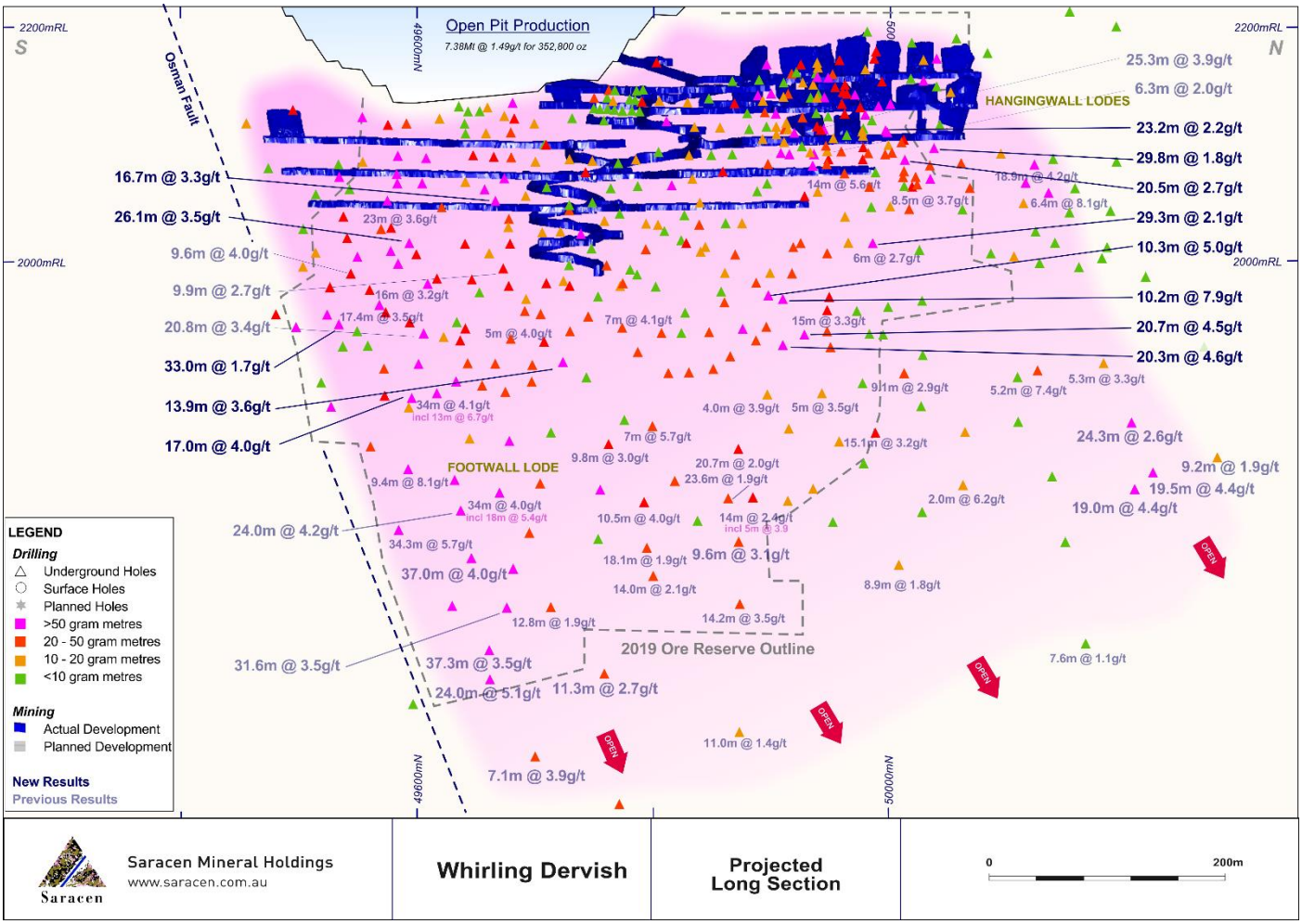
Below is a table of significant Karari infill intercepts:

Significant drill results include:	
KRGC681	51.0m @ 8.5g/t
KRGC677	33.2m @ 7.5g/t
KRGC682	24.0m @ 14.3g/t
KRGC702	17.9m @ 6.0g/t
KRGC655	11.4m @ 8.7g/t
KRGC676	19.3m @ 5.1g/t

At the sister **Dervish** deposit, drilling in the south has continued to define the thick high grade shoot bound by the Osman Fault, with strong results including **17.0m @ 4.0g/t**, **26.1m @ 3.5g/t** and **13.9m @ 3.6g/t.**

Drilling in the north similarly has defined thick high grade mineralisation within the current Ore Reserve. Significant new results include **20.3m @ 4.6g/t**, **20.7m @ 4.5g/t** and **10.2m @ 7.9 g/t**.

Figure 4 - Dervish Long Section, New Drill Results (Karari-Dervish mine)



Extensional drilling from the existing drill platform is largely complete, with a hiatus planned in the June half 2020 whilst drilling capacity is deployed to Deep South to commence infill drilling ahead of ore development.

The next extensional exploration and Resource definition program at Dervish will commence when a new drill drive is established at depth, anticipated late in the June quarter 2020.

Below is a table of significant Dervish intercepts:

Significant drill results include:	
WDGC271	20.3m @ 4.6g/t
WDGC272	20.7m @ 4.5g/t
WDGC254	26.1m @ 3.5g/t
WDGC211	17.0m @ 4.0g/t
WDGC229	29.3m @ 2.1g/t
WDGC292A	20.5m @ 2.7g/t

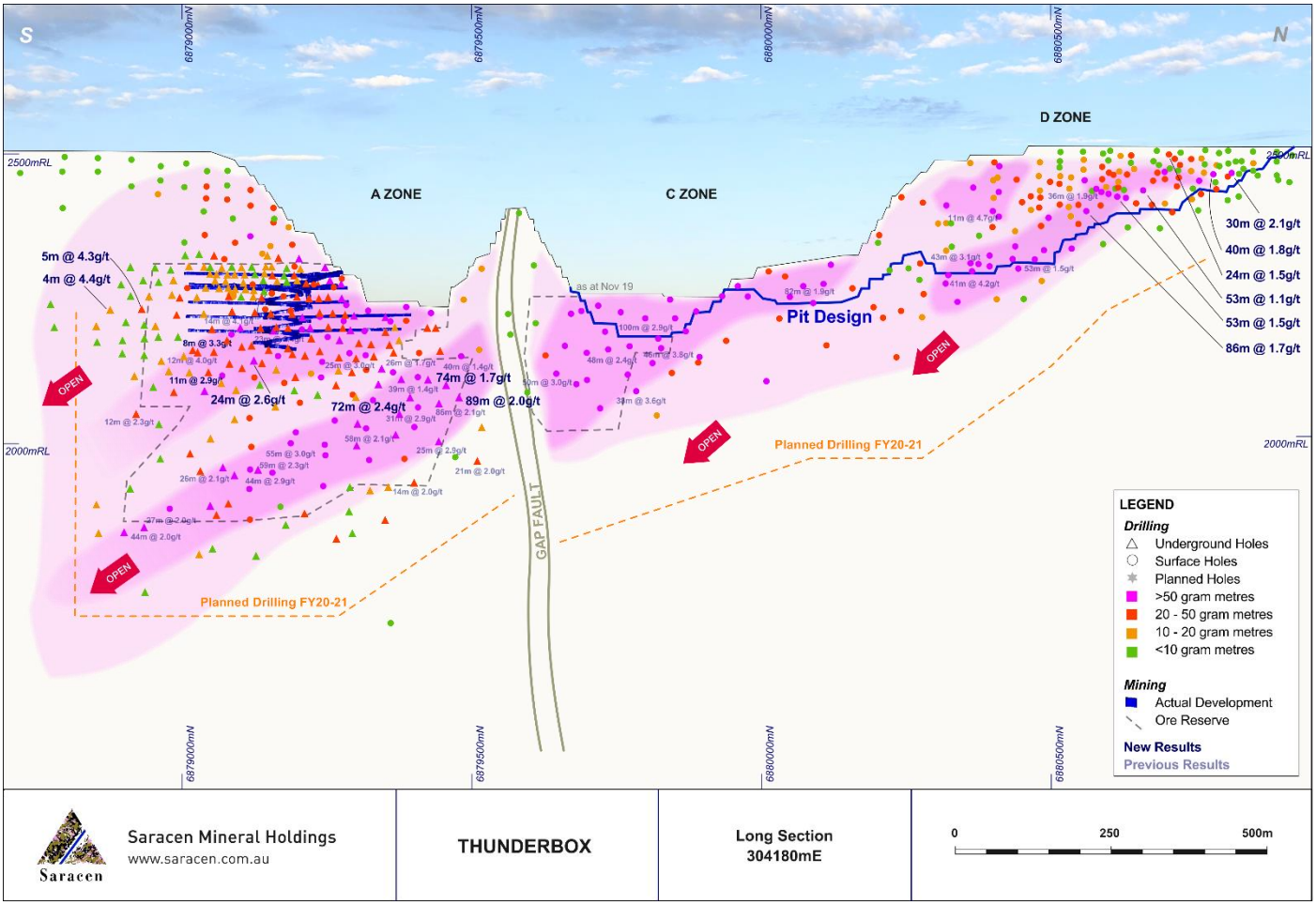
Thunderbox Operations - Drilling update

Thunderbox underground

Recent drilling has been testing the margins of the mineralisation to optimise the extents of the Ore Reserve ahead of underground mining. The latest results have continued to demonstrate the **consistent and persistent** nature of the Thunderbox mineralisation, boding well for future underground stoping.

Significant new A Zone underground results include **89m @ 2.0g/t** and **72m @ 2.4 g/t**.

Figure 5 - Thunderbox Long Section, New Drill Results



Thunderbox D Zone

A small surface RC program has been completed in the D Zone to increase the definition of the high grade shoot. Previous drilling highlighted the prominence of the shoot with the new drilling adding further confidence.

Significant new D Zone open pit results include **86m @ 1.7g/t** and **72m @ 2.4 g/t**.

Below is a table of significant Thunderbox intercepts:

Significant drill results include:	
THGC147	89.1m @ 2.0g/t
THGC150	72.0m @ 2.4g/t
THGC148	74.0m @ 1.7g/t
TBRC127	86.0m @ 1.7g/t
TBRC125	53.0m @ 1.5g/t
TBRC124	53.0m @ 1.1g/t

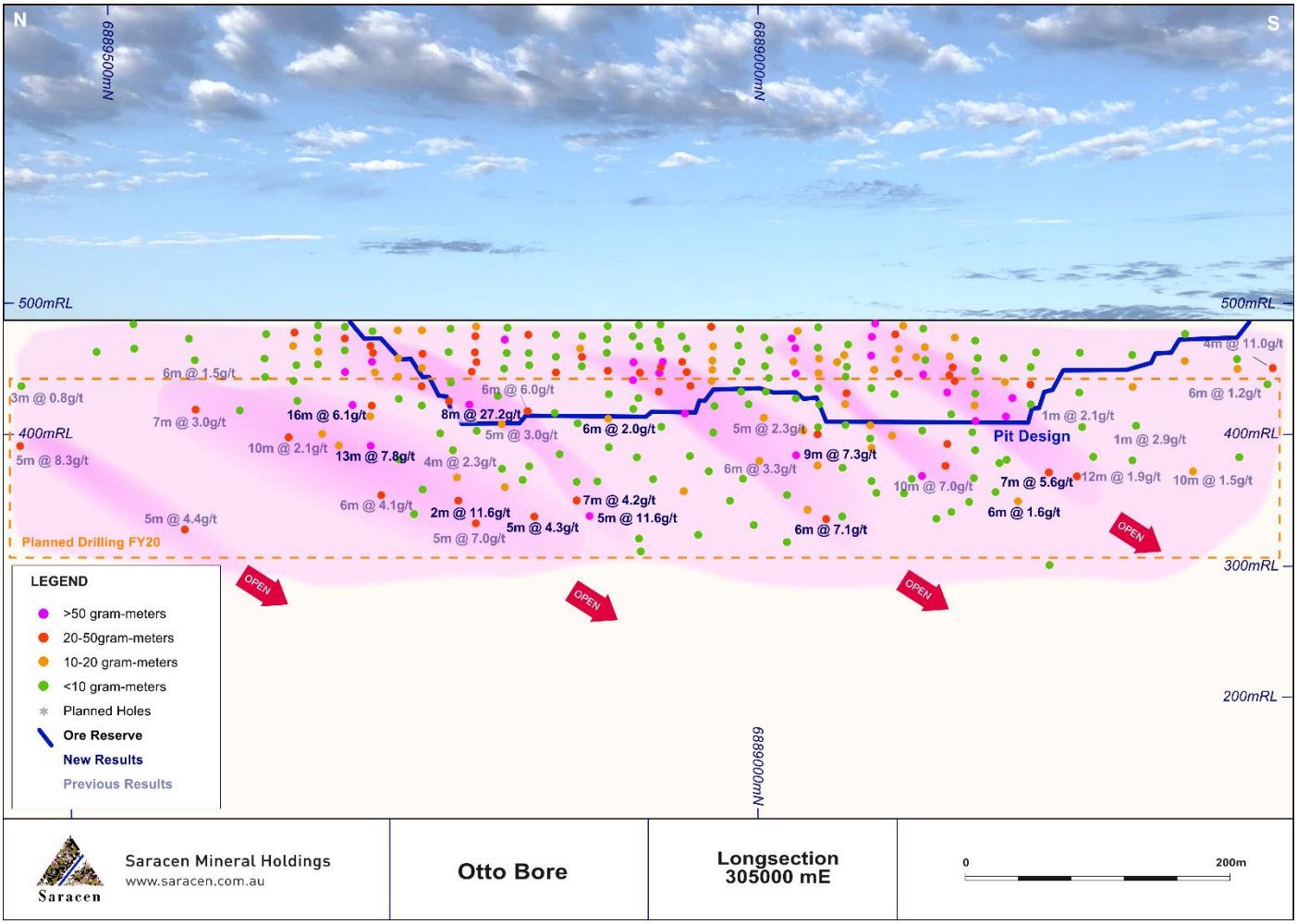
Otto Bore

Extensional infill RC drilling has resumed at Otto Bore following the successful maiden Ore Reserve of **950kt at 2.0g/t for 60,000 ounces** at 30 June 2019. The extensional drilling has focused on further defining the high grade shoots proximal to the Ore Reserve.

The recent drilling has further demonstrated the growth potential of the project with some impressive results being returned.

Significant new Otto Bore results include **8m @ 27.2g/t, 13m @ 7.8g/t** and **16m @ 6.1 g/t**.

Figure 6 – Otto Bore Long Section, New Drill Results



The recent program is only partially complete, with drilling set to resume when the Thunderbox D Zone program is finished later this month. The program will then focus on testing north of the Ore Reserve.

Below is a table of significant Otto Bore intercepts:

Significant drill results include:	
OBRC0096	8.0m @ 27.2g/t
OBRC0106	5.0m @ 11.6g/t
OBRC0089	13.0m @ 7.9g/t
OBRC0088	16.0m @ 6.1g/t
OBRC0120	9.0m @ 7.3g/t

Regional Exploration - Update

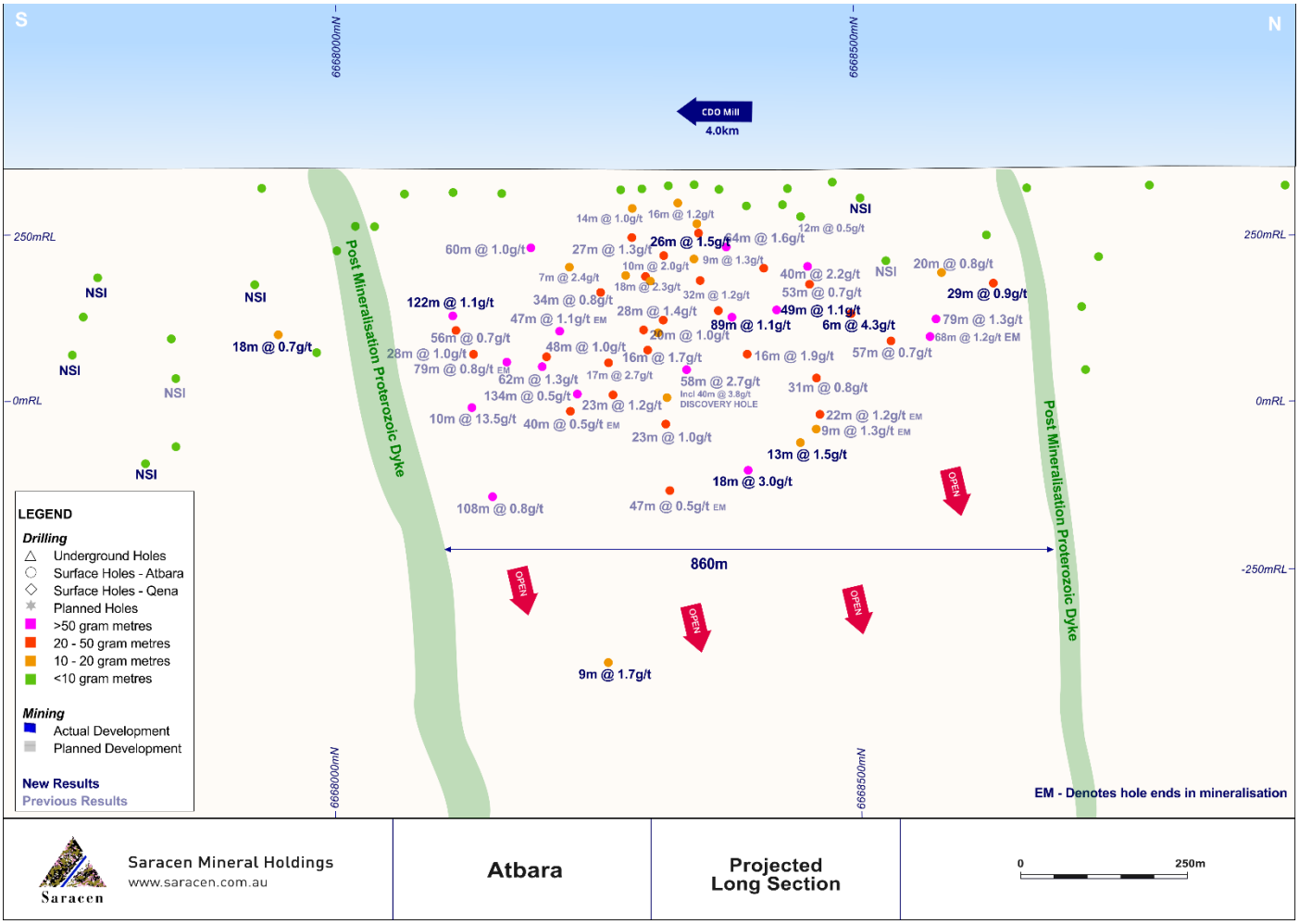
Atbara (Carosue Dam Corridor)

Drilling along the highly prospective Carosue Dam Corridor has delivered early success, with a **significant discovery at Atbara** (announced in November 2018), only 4km north of the mill.

Broad 160m x 160m framework drilling has recently been completed, aimed at understanding the size of the system. **A large system has been identified**, with the majority of the mineralisation occupying a strike length of 860m between two major post mineralisation Proterozoic dykes. The system remains **open at depth**.

Significant new framework results include **122m @ 1.1g/t** and **89m @ 1.1 g/t**.

Figure 7 - Atbara Long Section, New Drill Results



Following completion of the framework drilling, a tight spaced 20m x 20m program has commenced. This program will assess the close space variability and continuity of the mineralisation, and assist in optimising the drill spacing required to define and build a future Mineral Resource estimate.

Detailed re-logging of the copper-molybdenum minerals with respect to gold has not identified any direct correlations, indicating the gold and copper-molybdenum may be from separate mineralising events. Recently over 15,000 pulp samples have been submitted for copper and molybdenum assay to determine if the copper-molybdenum is a key element of the overall system.

Below is a table of significant Atbara exploration intercepts:

Significant drill results include:		
	Aggregated	Primary (or including)
ATEX027	**139.2m @ 1.1g/t**	122.0m @ 1.1g/t
		7.7m @ 2.6g/t
		9.5m @ 1.1g/t
ATEX035	**126.7m @ 1.3g/t**	89.5m @ 1.1g/t
		10.0m @ 1.0g/t
		27.2m @ 2.2g/t
ATEX079	**60.0m @ 1.3g/t**	26.0m @ 1.5g/t
		7.0m @ 1.4g/t
		5.0m @ 1.2g/t
		22m @ 1.2g/t
ATEX075	**49.0m @ 1.1g/t**	49.0m @ 1.1g/t
ATEX061	**29.0m @ 0.9/t**	29.0m @ 0.9/t

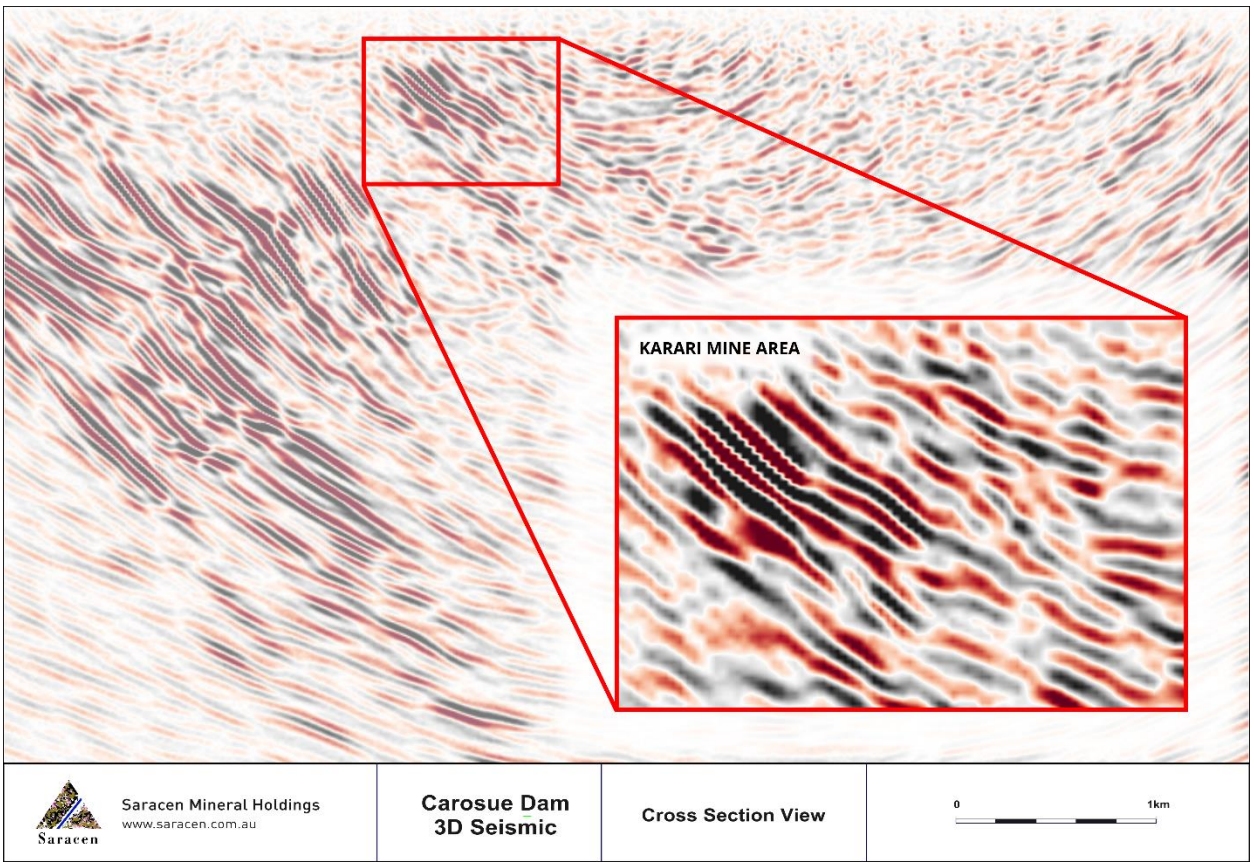
Carosue Dam Seismic Project

Completion of the 3D seismic survey data processing is anticipated in the current December quarter.

The high-resolution fully nodal acquisition recorded 263 million traces of seismic data over 50km^2 including Karari, Dervish and Atbara. This is **the highest resolution hard rock survey in Australia** and the second largest by area to date. The majority of the survey has a 400-fold cover in a 7.5m x 7.5m bin size. Each depth slice of the final 3D cube will have about 1 million data points. Early indications suggest resolution of geological features in the 3D cube will be excellent.

Early review of the processed data confirms the high geological resolution that has been mapped by the survey. The fine detail that will be resolved will facilitate the construction of a highly definitive 3D geology model. This model will be extremely valuable when defining new drilling targets proximal to the existing mines and along the Carosue Dam corridor north to Atbara.

Figure 8 - Carosue Dam, 3D Seismic data



Mt Celia

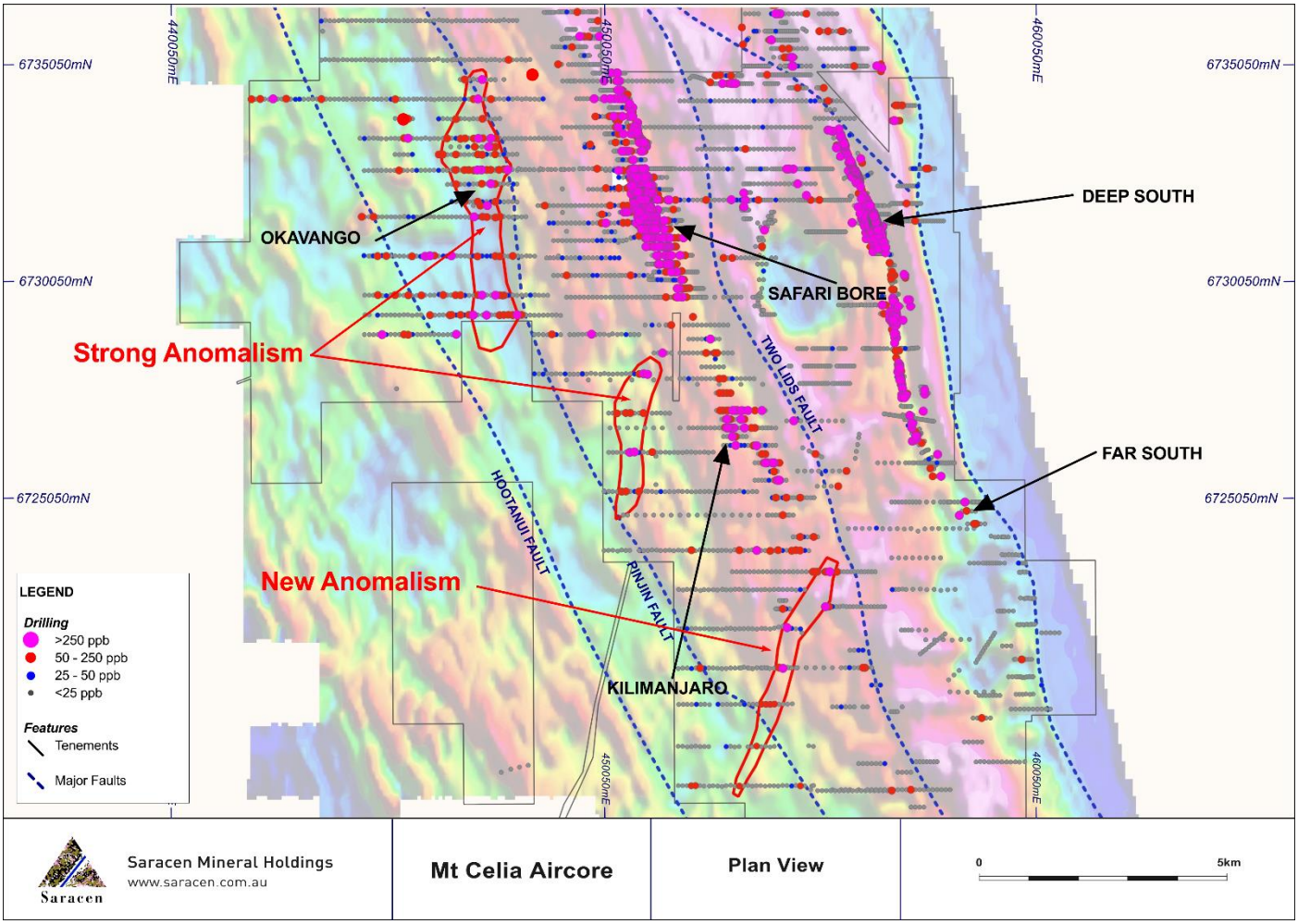
Broad pattern drilling (900m x 100m) has continued to progress south along the previously unexplored corridor proximal to the Pinjin Fault (approximately 80km north of the Carosue Dam mill).

The aircore drilling which commenced in FY19 has **successfully identified a large anomaly (Okavango)** to the west of Safari Bore. This significant anomaly is **now defined over a strike length of 6.0km** and is **up to 1.2km wide**. The Okavango prospect is a strong basement anomaly that is coincident with albite-sericite alteration and key pathfinder elements including; As, Bi, Mo, Sb, Te and Ce.

The aircore drill spacing at Okavango will be closed in to 200m lines during the remainder of the December quarter to better understand the geology and define the core of the anomaly. This will then form the basis of the initial deep test for primary mineralisation.

The recent wide spaced air core drilling further south has **identified a new anomaly** that strikes north-northwest between the Two Lids Fault and the Pinjin Fault. This new anomaly has been **defined over a strike length of 6km**.

Figure 9 - Mt Celia, Air core drilling results



Further air core drilling is planned during FY20 to complete the full program to the south and infill significant zones of anomalism defined during FY19 and FY20.

Corporate Structure:

Ordinary shares on issue:	833.1m
Unvested employee performance rights:	17.2m
Market Capitalisation:	A$2.8b (share price A$3.41)
Cash, bullion and investments (30 September):	A$196.1m
Debt:	Nil
Substantial Shareholders:	Van Eck Global 12.1% BlackRock Group 9.8% Mitsubishi UFJ 5.0%

For further information please contact:

Investors:
Troy Irvin
Corporate Development Officer
Email: info@saracen.com.au
Contact (08) 6229 9100

Media Enquiries:
Read Corporate
Paul Armstrong / Nicholas Read
Email: info@readcorporate.com
Contact: (08) 9388 1474

Competent Person Statements

The information in the report to which this statement is attached that relates to Exploration Results and Mineral Resources related to Gold is based upon information compiled by Mr Daniel Howe, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Daniel Howe is a full-time employee of the company. Daniel Howe has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being 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'. Daniel Howe consents to the inclusion in the report of matters based on his information in the form and context in which it appears.

Table 1 – Karari Drill Results

KARARI DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
KRGC632A	438621.5	6663775	-63.8198	123	299.4	-30.61		**275**	**284.8**	**9.8**	**3.56**
KRGC634	438621.7	6663775	-64.0198	315	300	-41.09		276	277	1	3.08
							and	279	280.1	1.1	2.72
							and	289	289.6	0.6	3.68
KRGC638	438730.7	6663301	-93.6925	177.36	188.7	-41.12	no significant results				
KRGC639	438730.9	6663301	-93.716	206.5	172.8	-35.94		163.6	164.2	0.6	3.66
							and	171.6	172.55	0.95	8.07
KRGC641	438640.7	6663720	-61.34	204	246.2	-56.3		144.3	147.7	3.4	2.70
KRGC642	438640.8	6663720	-61.39	222	211.6	-65.15		156.75	158.3	1.55	3.85
							and	168	169.1	1.1	2.55
							and	179.3	183	3.7	3.63
KRGC643	438640.5	6663720	-61.39	215	237.1	-62.46		132	134	2	2.77
							and	150.6	157	6.4	2.99
							and	162	162.4	0.4	3.65
							and	188.8	189.45	0.65	5.34
							and	**193.6**	**203.05**	**9.45**	**5.88**
KRGC644	438640.7	6663720	-61.204	240	214.76	-74.01		168.24	169.77	1.53	5.26
							and	176.45	177.45	1	2.54
							and	183.53	184.07	0.54	3.50
							and	188.09	188.41	0.32	2.97
							and	196.87	197.47	0.6	2.71
KRGC645	438640.9	6663720	-61.329	227.82	252.3	-67.59		164.7	166	1.3	5.45
							and	169.96	170.68	0.72	5.63
							and	171	172.02	1.02	2.75
							and	175.12	175.85	0.73	2.95
							and	**207**	**214.4**	**7.4**	**8.82**
KRGC646	438640.3	6663721	-61.3	231	264.5	-62.28		202.6	204.8	2.2	5.53
							and	208.2	212.1	3.9	7.48
							and	217.2	218.2	1	2.80
KRGC647	438640.4	6663721	-61.302	248	243.5	-77.86		212.4	213.2	0.8	2.83
							and	219	220.8	1.8	2.67
							and	230.3	231.9	1.6	2.92
KRGC648	438640.5	6663721	-61.318	249	259.4	-75.88		171.25	171.7	0.45	2.59
							and	180.9	184.3	3.4	2.76
							and	194.6	198.4	3.8	2.88
							and	211.4	212.9	1.5	3.35
							and	225.8	226.3	0.5	3.95
KRGC649	438640.7	6663720	-61.314	267	284.1	-72.83		133.85	134.8	0.95	4.86
							and	182.8	183.65	0.85	3.28
							and	188.6	188.95	0.35	5.30
							and	243.3	244.9	1.6	4.29
KRGC650	438640.7	6663720	-61.295	275.1	295.7	-70.75		211.35	212.2	0.85	2.51
							and	242	243	1	6.84
KRGC651	438641.1	6663720	-61.327	258	197.6	-82.3		203	203.9	0.9	4.10
							and	209.25	212.2	2.95	3.19
							and	215.3	221.7	6.4	2.68
							and	230.5	249	18.5	3.21
KRGC652	438641	6663720	-61.312	260.5	238.3	-82.09		185.2	186.05	0.85	2.77
							and	189	189.45	0.45	3.20
							and	195	195.5	0.5	2.95
							and	197	198	1	2.79
							and	201.3	202	0.7	5.18
							and	208	208.7	0.7	6.05
							and	213.1	221	7.9	2.81
							and	224.5	232	7.5	4.64
							and	241.5	241.9	0.4	2.74

KARARI DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
KRGC653	438641.2	6663720	-61.328	273	261.4	-83.76		210.8	211.7	0.9	3.26
							and	214.4	215.4	1	6.44
							and	218.6	228.6	10	3.38
							and	**231.7**	**246.8**	**15.1**	**4.29**
KRGC654	438642.1	6663721	-61.309	318	294.8	-79.3		201	202	1	2.81
							and	229	229.9	0.9	3.52
							and	234.2	234.95	0.75	2.66
							and	246	247	1	7.78
							and	250.2	251	0.8	2.98
KRGC655	438619.6	6663777	-63.784	275.6	296.6	-51.93		**235.5**	**246.9**	**11.4**	**8.69**
KRGC656	438620.1	6663778	-63.407	293	297.7	-42.36		254.8	256	1.2	5.84
KRGC657	438620.2	6663778	-63.407	168	299.3	-38.18	hole not sampled				
KRGC658	438620.2	6663778	-63.206	317	302.4	-36.45		138.3	138.8	0.5	2.81
							and	283.3	287.1	3.8	3.94
							and	292.55	293.6	1.05	7.87
KRGC658A	438620.3	6663778	-63.539	311.8	304	-33.12		283.15	290.8	7.65	3.50
KRGC659	438620.2	6663778	-63.206	150.13	304.7	-34.81	hole not sampled				
KRGC660	438620.2	6663778	-63.605	180	308.8	-30.1	hole not sampled				
KRGC661	438619.5	6663776	-63.256	162	302.4	-45.78	hole not sampled				
KRGC661A	438620.4	6663778	-63.313	360	306.5	-43.21		283.15	290.8	7.65	3.50
							and	315.7	316	0.3	5.37
							and	318	321.05	3.05	3.06
KRGC662	438620.2	6663778	-63.518	351	305.2	-37.28		304	306	2	7.64
							and	309.75	310.4	0.65	3.27
							and	313.25	313.9	0.65	4.67
							and	317.55	320.1	2.55	3.36
							and	322	327	5	4.99
							and	336.5	337.2	0.7	3.28
KRGC663	438620.1	6663778	-63.518	234	307.7	-40.36	no significant results				
KRGC664	438620.5	6663778	-63.544	342	308.5	-33.58	no significant results				
KRGC665	438620.2	6663778	-63.68	198	310.7	-38.7	hole not sampled				
KRGC666	438620.3	6663778	-63.634	312	302.6	-26.37		254.9	255.75	0.85	3.45
							and	256.85	257.95	1.1	3.14
							and	262.2	263.3	1.1	3.04
							and	265.95	267	1.05	2.83
KRGC667	438703.3	6663343	-93.922	186	251	-74.01		140	141	1	4.29
							and	145	146	1	2.75
							and	157	157.4	0.4	2.98
KRGC668	438701.6	6663345	-92.522	182.6	269.4	-67.85		120	121.7	1.7	3.45
							and	127.6	127.9	0.3	3.19
							and	137.6	138.4	0.8	6.32
							and	149.45	149.75	0.3	20.70
							and	170.5	171.05	0.55	6.50
KRGC669	438701.5	6663346	-93.927	170.8	269.1	-58.01		110.85	115.3	4.45	3.57
							and	119.5	124	4.5	2.72
							and	141	142	1	4.19
							and	147.15	148	0.85	2.99
KRGC670	438701	6663345	-92.413	192	285.4	-71.79		132.6	137	4.4	2.88
							and	149.2	150	0.8	2.70
KRGC671	438702.2	6663347	-93.809	183.1	283.4	-51.52		112.6	113	0.4	2.70
							and	113.5	114	0.5	2.99
							and	**120.2**	**125**	**4.8**	**11.39**
							and	133	135	2	3.56
							and	149	149.81	0.81	3.23
							and	169	173	4	14.24
KRGC672	438702.2	6663347	-93.757	193.2	288.7	-60.33		133.6	135.12	1.52	6.56
							and	138.33	139.21	0.88	9.13
							and	166.32	166.92	0.6	4.97

KARARI DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
KRGC673	438702.7	6663346	-93.897	219	297	-69.02		140.5	141	0.5	11.10
							and	145	146	1	2.54
							and	152	153	1	6.30
							and	157.2	157.65	0.45	6.36
							and	158.85	159.15	0.3	4.39
							and	178	179.15	1.15	3.70
KRGC674	438703.1	6663345	-93.916	230.9	307.9	-73.2		145.7	148.56	2.86	4.34
KRGC675	438702.3	6663347	-93.71	233.89	313.9	-58.35		153	157.1	4.1	5.16
							and	165.5	166	0.5	4.12
							and	178.03	178.6	0.57	2.98
							and	182	182.8	0.8	2.51
							and	185.6	186	0.4	2.97
							and	191.5	192	0.5	2.58
							and	208.2	208.7	0.5	10.50
KRGC676	438702.4	6663347	-93.688	216	313.6	-51.55		**168.2**	**187.5**	**19.3**	**5.06**
							and	208	210	2	3.02
							and	214	215	1	2.69
KRGC677	438620.4	6663778	-63.493	414	316	-46.36		**336.85**	**370**	**33.15**	**7.45**
KRGC678	438620.3	6663778	-63.858	350	313.5	-46.19		312.4	318	5.6	6.69
							and	323	324	1	4.13
							and	335	336	1	4.22
KRGC680	438620.4	6663778	-63.344	357	310.1	-40.87		320.15	321.45	1.3	5.62
							and	**331.1**	**344**	**12.9**	**5.79**
KRGC681	438620.5	6663778	-63.786	362.8	312.8	-50.91		**311.05**	**362**	**50.95**	**8.55**
KRGC682	438620.4	6663778	-63.567	344.2	315.2	-53.74		**296**	**320**	**24**	**14.25**
							and	327	332.7	5.7	3.74
KRGC683	438620.2	6663778	-63.731	248.9	304.7	-47.75	no significant results				
KRGC684	438704.3	6663345	-93.927	251.4	333.7	-75.74		204	205	1	3.23
KRGC685	438704.7	6663345	-93.87	261	327.6	-63.8		189	190	1	2.93
							and	205.77	208	2.23	4.18
							and	213	226	13	3.89
							and	232.05	232.38	0.33	5.99
							and	236.22	238	1.78	2.83
KRGC686	438704.3	6663345	-93.917	245.7	322	-58.86		171.65	172.89	1.24	3.66
							and	178.05	180	1.95	4.09
							and	184.95	186.35	1.4	10.94
							and	206	207	1	3.42
KRGC687	438703.3	6663348	-93.745	258	331.3	-55.76		**189**	**212**	**23**	**3.11**
							and	219.5	219.9	0.4	2.51
KRGC688A	438704.2	6663345	-93.913	245.6	327.6	-51.58		188	190.45	2.45	7.96
							and	193.5	198	4.5	11.34
							and	205.65	210	4.35	7.69
KRGC689	438702.4	6663347	-92.557	263.6	334.2	-50.37		209.5	216.95	7.45	4.42
							and	220.45	221.1	0.65	7.31
							and	225.25	227	1.75	6.88
							and	245	247	2	3.24
KRGC690	438704	6663348	-93.768	249	324.1	-47.72		198	203.5	5.5	2.73
							and	209.2	209.5	0.3	3.88
							and	220	220.46	0.46	2.63
KRGC691	438702.4	6663347	-92.557	254.6	330.7	-47.22		**209**	**222.7**	**13.7**	**4.23**
KRGC692	438704.2	6663345	-93.934	281.6	337.4	-47.83		**224.6**	**247**	**22.4**	**3.88**
							and	258.6	259.3	0.7	4.03
							and	262.7	264	1.3	2.68
KRGC693	438732.7	6663301	-93.373	216	174.9	-30.67		**150.6**	**152.84**	**2.24**	**12.59**
							and	160	162.2	2.2	3.63
							and	166	168.3	2.3	4.47
							and	177.3	177.9	0.6	14.50

KARARI DRILLING NOVEMBER 2019											
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Downhole Width (m)	Grade g/t
KRGC694	438732.7	6663301	-93.4	195	179.5	-34.18		135	136	1	3.07
							and	152.46	152.9	0.44	2.64
							and	183.8	184.25	0.45	3.17
KRGC695	438732.8	6663301	-93.304	260.82	162.6	-28.41		200.7	205.6	4.9	2.69
							and	247.5	248.6	1.1	4.07
KRGC696	438619.6	6663777	-63.979	249	288.4	-43.28		206	215.1	9.1	4.55
							and	222.74	224	1.26	3.83
KRGC697	438619.7	6663777	-63.991	237	283.2	-53.52		194.9	195.85	0.95	8.57
							and	213	220.9	7.9	4.61
KRGC698	438620.1	6663778	-63.474	324	303.9	-46.17		279	280	1	3.37
KRGC699	438619.8	6663778	-63.898	285	299.6	-55.3		**244**	**254.91**	**10.91**	**7.17**
KRGC700	438619.7	6663777	-63.585	165	307.2	-50.84		163.15	163.5	0.35	2.91
KRGC701	438619.8	6663777	-63.594	282	303.5	-56.6		256.33	260	3.67	4.27
							and	261.73	263	1.27	3.01
							and	263.65	270	6.35	5.80
KRGC702	438619.7	6663777	-63.52	294	307.1	-60.21		**253**	**270.9**	**17.9**	**6.00**
KRGC703	438619.7	6663777	-63.586	141	301	-51.76	results pending				
KRGC704A	438733.1	6663301	-93.041	302	160.9	-19.98		232	232.45	0.45	7.07
KRGC705	438733.1	6663301	-93.225	315	155.2	-25.93	no significant results				
KRGC706	438619.5	6663777	-63.353	312	299.7	-31.46		249.2	249.7	0.5	6.73
							and	**253**	**266.85**	**13.85**	**3.96**
KRGC707	438619.7	6663777	-63.72	341	304.8	-37.33		260.7	263.7	3	4.70
KRRD444	438729.3	6663312	-93.8787	282	65.4	-83.05	no significant results				
KRRD449	438732.9	6663301	-93.003	285	158.8	-31.66		253	253.9	0.9	4.45
KRRD450	438732.7	6663300	-93.092	261	163.7	-34.67		**188.1**	**194.9**	**6.8**	**4.99**
							and	201	202.3	1.3	2.85
KRRD451	438732.9	6663301	-93.055	261	160.9	-39.77		194.9	197.7	2.8	5.64
							and	219.5	219.9	0.4	3.69
							and	229.5	230	0.5	10.50
KRRD452	438733	6663301	-93.131	255	162.5	-44		180.5	181.1	0.6	11.90
							and	220	221	1	5.71
KRRD453	438732.8	6663301	-93.208	231	169.9	-43.97		155.8	156.3	0.5	2.50
							and	156.8	157.15	0.35	2.71
							and	164	164.7	0.7	3.06
							and	193	193.87	0.87	2.56
KRRD454	438732.8	6663301	-93.442	207	184.4	-53.77		136	136.75	0.75	10.00
							and	156.15	156.9	0.75	2.56
KRRD455	438732.7	6663301	-93.477	261	161.1	-50.56		184.3	185	0.7	7.23

Table 2 – Whirling Dervish Drill Results

WHIRLING DERVISH NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
WDEX063	438335	6665537	140.42	576	344.20	-66.95		236	237	1	1.71
							and	280	281.6	1.6	2.49
							and	397.25	399	1.75	2.97
							and	408.6	419	10.4	2.43
							and	452.2	453	0.8	1.55
							and	471.31	476	4.69	1.52
							and	479.15	480.5	1.35	2.24
							and	482	483	1	1.54
							and	489.32	490.15	0.83	2.76
WDGC207	438381.5	6665508	141.345	267	188.88	-54.27		155	156	1	18.10
							and	161.94	166.64	4.7	4.10
							and	179	182.72	3.72	3.52
							and	190.95	191.5	0.55	4.58
							and	228.11	229.19	1.08	1.55
							and	240.53	241.55	1.02	6.41
							and	249	256	7	4.39
WDGC208	438381.1	6665508	141.353	191.4	173.40	-53.76	no significant results				
WDGC209	438381.6	6665508	141.273	326.9	164.70	-51.64		170.6	172.15	1.55	3.01
							and	177.15	177.6	0.45	2.94
							and	213.05	214.05	1	1.84
							and	226.6	227.6	1	8.44
							and	239	254.4	15.4	1.69
							and	263	264	1	2.62
							and	285	297	12	1.99
WDGC210	438381.4	6665508	141.295	284.9	184.80	-58.96		170.1	178	7.9	2.44
							and	187.05	194.75	7.7	2.92
							and	206	207	1	2.08
							and	217.8	218.25	0.45	8.04
							and	225.65	227.1	1.45	3.55
							and	253.4	263.7	10.3	1.71
WDGC211	438381	6665508	141.243	323.8	166.70	-58.70		128.2	128.75	0.55	12.70
							and	172	173	1	2.06
							and	191	192	1	1.72
							and	217.05	228	10.95	2.05
							and	236	243	7	2.99
							and	254.6	255.6	1	2.00
							and	265.7	266.4	0.7	1.86
							and	**293**	**310**	**17**	**3.95**
WDGC212	438380.8	6665508	141.352	294	192.10	-68.31		139	141.8	2.8	2.26
							and	146	146.6	0.6	2.53
							and	230.75	234	3.25	3.41
							and	251.9	276	24.1	1.93
WDGC213	438380.5	6665508	141.299	279	210.00	-65.64		133.85	137.4	3.55	1.98
							and	147.15	147.95	0.8	2.67
							and	184.25	185.55	1.3	3.86
							and	221.2	223.1	1.9	13.07
							and	232.8	233.25	0.45	23.30
							and	249.4	253.35	3.95	2.96
							and	259.65	260.45	0.8	1.53
WDGC214	438380.5	6665508	141.308	278.8	213.20	-68.59		138.9	139.6	0.7	4.75
							and	150.25	151	0.75	2.29
							and	224.5	225.6	1.1	2.23
							and	228.5	230.65	2.15	1.68
							and	238.55	244	5.45	3.03
							and	250	262.1	12.1	3.53

WHIRLING DERVISH NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
WDGC223	438262.4	6665623	142.0054	267	263.30	-16.07		71	72	1	1.67
							and	111	112	1	2.97
							and	114.9	118.55	3.65	1.88
							and	226.1	227.3	1.2	1.55
							and	240.05	241	0.95	2.58
							and	244.95	245.95	1	3.26
WDGC224	438262.5	6665623	141.6945	261	264.00	-24.15		108.4	118	9.6	2.08
							and	141	142	1	2.14
							and	171	172.1	1.1	3.26
							and	219.1	220.35	1.25	1.55
							and	228.2	234.5	6.3	2.61
							and	245	246.15	1.15	1.78
WDGC228	438264.2	6665621	142.511	237	251.40	-34.66		89.3	90	0.7	3.03
							and	93	95	2	3.88
							and	99	100	1	1.98
							and	129	134.7	5.7	1.66
							and	137	144.5	7.5	2.11
							and	210	211	1	4.31
							and	221.85	222.55	0.7	2.15
WDGC229	438264.1	6665621	142.43	246	257.30	-33.49		**86**	**115.3**	**29.3**	**2.14**
							and	140.6	147	6.4	4.66
							and	205	205.45	0.45	1.54
							and	212	213	1	1.85
							and	220.6	227	6.4	1.88
WDGC231	438264.1	6665621	142.586	254.9	256.30	-22.72		103.05	104	0.95	1.91
							and	105	106	1	1.51
							and	108.7	109.35	0.65	2.24
							and	125	126	1	2.06
							and	140	141	1	2.10
							and	157.4	161.95	4.55	6.85
							and	195.7	198	2.3	2.06
							and	222.3	225.5	3.2	1.62
							and	228	231.55	3.55	2.02
WDGC231A	438263.7	6665622	142.557	261	255.30	-18.82		75.05	76	0.95	2.00
							and	85	86	1	1.63
							and	110.15	110.65	0.5	2.99
							and	136.4	136.75	0.35	5.77
							and	138	139	1	1.77
							and	196	197.15	1.15	1.65
							and	227.5	228.1	0.6	1.90
							and	231.8	233	1.2	1.92
							and	236.1	236.7	0.6	4.72
WDGC232	438263.6	6665622	142.299	177	267.00	-40.66		122	122.4	0.4	6.51
							and	142	142.75	0.75	2.33
WDGC233	438262.8	6665627	142.271	285	278.70	-34.79		132	142	10	2.35
							and	151	154	3	1.81
							and	174	175	1	1.94
							and	253	254	1	7.73
WDGC234	438262.5	6665627	142.665	402	285.50	-22.07		141.9	144	2.1	1.70
							and	154.15	154.65	0.5	4.96
							and	165.2	175.7	10.5	2.11
							and	183.8	184.5	0.7	2.80
							and	190	191	1	1.82
							and	347.2	353.2	6	1.50
WDGC235	438262.4	6665626	142.537	299.6	281.20	-24.63		117.96	118.34	0.38	1.59
							and	133.44	134.2	0.76	2.77
							and	135.91	136.37	0.46	1.79
							and	143.96	144.43	0.47	5.53
							and	150.32	162.55	12.23	1.67
							and	287.81	290.42	2.61	4.85

WHIRLING DERVISH NOVEMBER 2019											
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Downhole Width (m)	Grade g/t
WDGC236	438262.7	6665627	142.553	245.9	294.90	-17.54		158.6	159.12	0.52	3.76
							and	**165.65**	**195.45**	**29.8**	**1.83**
							and	202.9	218.14	15.24	1.77
WDGC237	438268.1	6665617	142.354	219	228.10	-37.39		117.9	119	1.1	2.68
							and	132.9	135	2.1	2.84
							and	144	146	2	3.38
							and	202	203	1	2.09
							and	205.2	207.2	2	1.82
WDGC238	438268.1	6665617	142.304	231	233.30	-46.47		132.55	140	7.45	2.26
							and	148.45	149.35	0.9	1.53
							and	208.2	212.55	4.35	2.33
WDGC239	438268.2	6665617	141.979	242.9	214.60	-50.83		105.8	107	1.2	2.09
							and	144	145	1	2.62
							and	208	210	2	4.79
							and	216.3	224.55	8.25	3.51
WDGC240	438268.1	6665617	141.932	236.9	233.60	-52.77		104.9	105.45	0.55	1.63
							and	**208.7**	**218.95**	**10.25**	**4.95**
WDGC241	438268.1	6665617	142.08	237	256.60	-51.31		102.65	104.1	1.45	4.71
							and	110.7	111.2	0.5	2.89
							and	149.8	151.8	2	2.49
							and	216	228	12	2.90
WDGC242	438262.6	6665627	142.359	389.9	292.01	-22.41		160.7	162.5	1.8	1.91
							and	172	173	1	1.90
							and	193.15	204	10.85	2.61
							and	212	213	1	1.97
							and	220	221.25	1.25	1.79
							and	376.25	377	0.75	2.50
WDGC243	438268.2	6665617	141.952	260.8	200.60	-54.56		113	113.85	0.85	2.58
							and	206.4	207.15	0.75	2.49
							and	214	215	1	2.82
							and	225	226	1	1.58
							and	237.1	238	0.9	2.85
WDGC244	438268.4	6665616	141.953	254.7	210.00	-58.79		110.9	111.35	0.45	2.32
							and	213	226.2	13.2	1.77
							and	234	237	3	2.75
WDGC245	438268.4	6665616	141.99	255.05	223.38	-61.80		114.05	115.9	1.85	1.79
							and	217.05	238.25	21.2	2.47
WDGC246	438268.4	6665617	141.991	241.9	233.50	-60.81		113.2	113.55	0.35	1.73
							and	217.05	221.25	4.2	5.58
							and	227.45	234	6.55	3.83
WDGC247	438268	6665617	142.16	258	259.90	-59.81		117.95	121.2	3.25	1.93
							and	225	235.1	10.1	4.26
							and	241	242.1	1.1	2.53
WDGC248	438268	6665617	142.021	263.93	273.10	-55.32		123.8	124.3	0.5	3.59
							and	132.6	134	1.4	2.38
							and	255	256	1	1.64
WDGC249	438379.4	6665508	141.63	209.85	156.90	-33.27		180.75	181.5	0.75	2.64
							and	188.4	189.25	0.85	5.59
WDGC250	438379.5	6665508	141.844	305.6	171.30	-24.44		127	129	2	7.49
							and	266.35	283.4	17.05	1.58
							and	285.25	285.65	0.4	2.77
							and	289	290	1	1.77
WDGC251	438379.4	6665508	141.571	300.07	174.60	-41.39		130.95	131.35	0.4	1.65
							and	153	154	1	1.92
							and	182.45	189.95	7.5	1.62
							and	228	229	1	1.51
							and	236.5	242	5.5	2.68
							and	253.1	255	1.9	6.56
							and	260.95	262.4	1.45	4.39
							and	271	284	13	1.76

WHIRLING DERVISH NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
WDGC252	438379.5	6665508	141.676	315.6	163.10	-38.76		149.3	150	0.7	2.22
							and	228.8	236	7.2	1.83
							and	238	238.4	0.4	1.81
							and	**281**	**314**	**33**	**1.73**
WDGC253	438378.7	6665508	141.904	296.8	180.10	-28.70		121	122	1	7.55
							and	139	140	1	1.55
							and	163.35	163.8	0.45	2.36
							and	236.87	248.55	11.68	2.42
							and	254	256.7	2.7	3.28
							and	284.35	285.15	0.8	12.00
WDGC254	438378.5	6665508	141.924	279	187.00	-30.91		143	144.08	1.08	2.16
							and	219	221	2	3.43
							and	**229.75**	**255.8**	**26.05**	**3.51**
WDGC256	438378.6	6665508	141.694	261	199.40	-31.43		94	95	1	1.79
							and	101.45	101.9	0.45	3.12
							and	119	119.9	0.9	3.96
							and	**157.5**	**174.15**	**16.65**	**3.26**
							and	189.3	190	0.7	1.91
							and	218	220.65	2.65	2.76
WDGC257	438379.4	6665508	141.253	266.7	201.90	-58.72		121.7	122.25	0.55	18.80
							and	174.3	175.9	1.6	2.33
							and	193	193.75	0.75	2.28
							and	218.05	219.95	1.9	5.95
							and	239.15	247.15	8	4.15
WDGC258	438379	6665509	141.174	258	210.00	-50.66		126.35	126.75	0.4	3.93
							and	206	207	1	3.21
							and	213.7	214	0.3	1.58
							and	217.45	225.75	8.3	2.08
WDGC259	438334.9	6665534	140.295	273	193.90	-65.89		119.05	125.8	6.75	1.92
							and	162.25	169.4	7.15	1.79
							and	174.7	175.35	0.65	4.43
							and	224.4	224.85	0.45	7.71
							and	**234.9**	**248.85**	**13.95**	**3.58**
WDGC260	438334.5	6665533	140.661	221.6	204.00	-51.31		91.15	94	2.85	2.65
							and	108.4	108.8	0.4	1.56
							and	154	161	7	2.80
							and	168	169	1	4.84
							and	174.8	176	1.2	2.17
							and	182	183	1	4.78
							and	210.05	210.95	0.9	2.85
WDGC261	438334.6	6665533	140.634	252.41	198.90	-61.54		94.5	95	0.5	3.64
							and	103	108	5	4.28
							and	115.15	116.83	1.68	2.17
							and	122	123	1	1.60
							and	153.6	154.64	1.04	1.92
							and	182.2	183	0.8	2.97
							and	216.6	225	8.4	1.59
							and	228.6	229.62	1.02	9.29
WDGC262	438334.6	6665533	140.871	243	201.40	-34.46		62	63	1	2.37
							and	99.8	103	3.2	1.61
							and	107	112.5	5.5	1.91
							and	151	153.2	2.2	2.96
							and	175.95	176.5	0.55	3.89
							and	200.4	201	0.6	2.34
							and	205.4	207	1.6	5.82

WHIRLING DERVISH NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
WDGC263	438334.4	6665533	140.488	254.78	212.10	-68.38		117.45	122.85	5.4	3.07
							and	164	166.65	2.65	1.68
							and	167.5	168	0.5	2.07
							and	224.75	230.8	6.05	1.54
							and	236.2	239	2.8	12.59
WDGC264	438262.4	6665626	142.615	318	280.00	-20.86		91.4	91.8	0.4	4.27
							and	144.7	145.25	0.55	1.61
							and	149	149.75	0.75	1.78
							and	150.35	150.7	0.35	1.68
							and	158	159	1	4.64
							and	164	166.1	2.1	2.13
							and	294.5	294.8	0.3	1.53
WDGC265	438268.5	6665616	141.939	240.1	217.10	-52.67		106.5	108	1.5	4.15
							and	138.37	139.23	0.86	2.47
							and	143.65	147.25	3.6	2.38
							and	209.45	211	1.55	2.86
							and	216.55	222	5.45	4.52
WDGC266	438268.5	6665616	141.838	246	227.50	-57.24		143.15	143.5	0.35	2.82
							and	212.6	219	6.4	2.13
							and	224	224.5	0.5	1.60
							and	227.15	228	0.85	2.02
WDGC267	438268.3	6665616	141.875	237	241.50	-54.37		**210**	**220.2**	**10.2**	**7.89**
WDGC268A	438268.6	6665616	141.87	281.7	196.20	-59.90		119.19	121.4	2.21	2.38
							and	230.8	232	1.2	6.61
							and	239	240	1	1.63
WDGC269	438268.5	6665616	141.939	263.94	215.15	-68.02		124.44	125	0.56	2.32
							and	230.92	244.8	13.88	1.83
							and	251	252.5	1.5	3.56
WDGC270	438268.5	6665616	141.924	264	229.00	-65.41		117.4	118.55	1.15	4.30
							and	221.85	231	9.15	1.54
							and	238	247	9	2.29
WDGC271	438268.4	6665617	141.923	258	243.10	-64.20		136	137	1	3.32
							and	**222.7**	**243**	**20.3**	**4.64**
WDGC272	438268.3	6665617	141.916	254.9	253.00	-62.52		113.35	113.95	0.6	8.12
							and	**220.35**	**241.05**	**20.7**	**4.52**
WDGC273	438263.9	6665622	142.63	216.15	239.80	-38.25		88.5	92.1	3.6	3.42
							and	103.6	104.65	1.05	9.48
							and	128.3	131.1	2.8	9.45
							and	136.4	140.5	4.1	4.95
							and	201.45	208.35	6.9	4.24
WDGC274	438264.2	6665621	142.089	222	239.50	-46.60		92.65	94.1	1.45	2.23
							and	145	146	1	2.01
							and	203.45	213.95	10.5	4.35
WDGC275	438261.8	6665626	142.753	339	282.90	-17.20		125	129	4	4.18
							and	133.3	134	0.7	2.76
							and	136.7	143	6.3	1.75
							and	145	147	2	1.79
							and	162.45	163.65	1.2	1.77
							and	165.37	165.8	0.43	3.48
							and	324.75	332	7.25	3.29
WDGC276	438262.3	6665627	141.987	255	270.60	-49.22		53	54	1	1.76
							and	119.3	123	3.7	1.77
WDGC277	438261.8	6665626	142.468	311.7	279.60	-22.30		112	112.55	0.55	5.11
							and	126.65	128.35	1.7	10.04
							and	137	143.55	6.55	6.78
							and	157	159	2	3.29
							and	288.83	289.2	0.37	1.64
							and	295	295.95	0.95	5.13

WHIRLING DERVISH NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
WDGC278	438268.2	6665617	142.003	237	217.20	-45.36		101	103.05	2.05	1.99
							and	121.95	122.3	0.35	12.60
							and	130	131	1	2.74
							and	136	139.3	3.3	4.41
							and	209.2	212	2.8	1.91
							and	217	218.2	1.2	2.03
WDGC279	438304.1	6665582	141.381	237	213.80	-50.33		147.95	152	4.05	1.96
							and	193.55	194	0.45	3.88
							and	211.4	212.1	0.7	3.08
WDGC280	438304.1	6665582	141.187	249	211.40	-60.02		117	118.7	1.7	1.64
							and	165.95	166.35	0.4	3.51
							and	208.7	209.2	0.5	1.89
							and	226	236.8	10.8	2.92
							and	239	240	1	2.56
WDGC281	438304.4	6665582	141.142	237	205.30	-49.10		112.55	112.9	0.35	1.78
							and	143	144.12	1.12	1.70
							and	188.85	190	1.15	3.25
							and	193.8	194.25	0.45	2.86
							and	214.95	217.97	3.02	2.51
WDGC282	438304.6	6665582	141.147	267	199.40	-59.53		122	123	1	2.64
							and	164.5	167.07	2.57	3.08
							and	201.2	203	1.8	5.97
							and	215	215.97	0.97	2.00
							and	227.97	236	8.03	2.74
WDGC283	438379.4	6665508	141.721	275.65	186.60	-34.01		223.25	223.55	0.3	8.51
							and	230.2	245	14.8	2.30
							and	253.15	254.5	1.35	1.70
							and	255.4	255.9	0.5	1.82
WDGC284	438334.4	6665533	140.404	195.05	222.30	-48.92		101.8	102.85	1.05	4.87
							and	135.3	138.3	3	1.76
WDGC285	438334.5	6665533	140.654	179.9	210.70	-51.00		60.6	61.15	0.55	3.88
							and	69.5	70.15	0.65	2.68
							and	104.55	106.6	2.05	3.09
							and	138.8	139.15	0.35	1.83
							and	149	149.95	0.95	2.07
							and	168	168.85	0.85	1.77
WDGC286	438304.5	6665582	141.295	261	188.80	-53.17		124.35	124.65	0.3	2.45
							and	164	164.7	0.7	1.97
							and	167	168.5	1.5	1.92
							and	193.8	198.2	4.4	7.35
							and	217.75	218.3	0.55	5.88
							and	228	228.35	0.35	2.13
							and	233.8	237.1	3.3	3.74
WDGC287	438261.7	6665626	142.805	212.7	278.50	-12.41		**116.8**	**140**	**23.2**	**2.18**
							and	160	165.4	5.4	1.89
							and	169	170	1	1.61
WDGC289	438260.8	6665625	142.35	333	278.30	-19.97		140.6	140.95	0.35	5.42
							and	144.25	146.7	2.45	1.67
							and	154	155	1	8.92
							and	280	284.88	4.88	5.21
							and	292	293.27	1.27	2.03
WDGC290	438260.9	6665625	142.349	330	282.50	-20.84		140.2	141.5	1.3	2.15
							and	147.77	151.75	3.98	1.73
							and	154.8	157	2.2	2.94
							and	161	169.75	8.75	1.59
							and	302.55	306.6	4.05	2.25

WHIRLING DERVISH NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
WDGC291	438261.6	6665626	142.427	339	285.40	-21.81		70.35	71	0.65	2.20
							and	154.8	155.7	0.9	6.98
							and	161	162	1	1.80
							and	170	171	1	3.55
							and	310.4	310.7	0.3	1.93
							and	311.5	312.45	0.95	1.51
							and	315	315.65	0.65	2.11
							and	318	319.25	1.25	2.93
WDGC292A	438261.6	6665626	142.562	351	291.30	-24.42		73	74	1	3.67
							and	**154.55**	**175**	**20.45**	**2.65**
							and	325.7	327.15	1.45	3.85
							and	332.9	333.5	0.6	1.51
							and	338	338.85	0.85	2.24
WDGC293	438260.9	6665625	142.349	330	285.70	-24.82		149.1	149.45	0.35	3.07
							and	156	164.45	8.45	2.14
							and	179	180	1	2.26
							and	297.1	297.75	0.65	2.42
							and	305.1	306	0.9	43.70
WDGC294	438261.6	6665626	142.52	162	287.30	-29.05		146	146.9	0.9	2.94
WDGC295	438261.4	6665625	142.318	327	289.20	-27.21		149.8	151.5	1.7	2.48
							and	162.3	163	0.7	3.08
							and	305.1	308.25	3.15	2.53
WDGC297	438261.5	6665626	142.44	335.8	291.50	-31.35		113.9	114.4	0.5	1.57
							and	154	155.95	1.95	2.58
							and	304.35	305	0.65	1.54
							and	318.25	319.13	0.88	6.15
WDGC298	438334.7	6665533	140.635	258	188.30	-52.61		92.6	105	12.4	1.62
							and	111.85	117	5.15	5.29
							and	154.9	156.35	1.45	3.09
							and	215.25	217	1.75	2.69
							and	226.25	232	5.75	4.48
WDGC299	438382.1	6665507	141.577	374.6	158.90	-33.60		318.05	334.6	16.55	2.64
WDGC300	438382	6665507	141.672	363	156.10	-42.90	results pending				
WDGC301	438381.8	6665507	141.237	317	162.11	-45.28	results pending				
WDGC302	438381.8	6665507	141.237	341.9	164.12	-49.93	results pending				
WDGC304	438272	6665620	141.931	192.12	94.80	-88.56		179.9	180.6	0.7	1.95
WDGC305	438272	6665620	141.937	288.05	40.50	-83.36		190	192.25	2.25	7.44
WDGC306	438264	6665627	142.079	197.9	328.90	-79.65		172.5	173.2	0.7	3.53
WDGC307	438263.9	6665627	142.068	201	322.90	-74.31		176	178.07	2.07	2.46
WDGC308	438264	6665627	142.073	231	357.35	-79.44		188.75	189.7	0.95	1.85

Table 3 – Thunderbox Drill Results

THUNDERBOX DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
TBRC125	304134.6	6880735	2498.574	160	88.12	-60.93		67	68	1	1.49
							and	82	83	1	2.26
							and	**90**	**143**	**53**	**1.49**
TBRC126	304159.3	6880730	2498.772	148	90	-60		0	1	1	2.19
							and	34	35	1	2.62
							and	61	62	1	1.41
							and	63	64	1	1.34
							and	69	84	15	1.47
TBRC127	304127	6880690	2498.411	202	90.98	-60.22		**79**	**165**	**86**	**1.72**
TBRC128	304153.1	6880690	2498.19	160	90	-60	results pending				
TBRC129	304090	6880980	2500	142	91.86	-75.17	results pending				
TBRC130	304120	6880980	2500	76	89.82	-59.78	results pending				
TBRC131	304160	6880980	2500	100	89.82	-60.66	results pending				
TBRC132	304160	6881000	2500	106	86.96	-60.11	results pending				
TBRC133	304100	6881020	2502	88	90	-60	results pending				
TBRC134	304200	6881020	2502	64	90	-60		37	38	1	1.16
							and	41	42	1	1.03

THUNDERBOX DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
TBRC096	304240	6880660	2499	124	91.49	-59.94	results pending				
TBRC097	304260	6880660	2499	82	90	-60	results pending				
TBRC099	304258	6880700	2499	70	90.87	-60.91	results pending				
TBRC100	304220	6880740	2499	118	90	-60		82	88	6	1.67
TBRC101	304240	6880740	2499	88	90.73	-61.02		2	3	1	1.12
							and	8	10	2	1.06
							and	20	21	1	1.13
							and	64	73	9	1.45
TBRC102	304260	6880740	2499	52	90	-60		35	40	5	2.42
TBRC103	304200	6880820	2499	118	88.48	-65.62		**24**	**48**	**24**	**1.52**
							and	93	94	1	2.51
							and	108	114	6	1.30
TBRC104	304220	6880820	2499	94	89.48	-61		63	67	4	0.94
TBRC105	304180	6880860	2500	124	89.4	-61.15		7	12	5	2.27
							and	67	68	1	3.63
TBRC106	304200	6880860	2500	100	91.38	-60.92		28	29	1	3.83
							and	52	53	1	1.03
							and	62	67	5	3.41
							and	81	83	2	1.21
							and	98	100	2	1.50
TBRC107	304220	6880860	2500	70	92	-61.27		50	64	14	1.82
TBRC108	304180	6880900	2500	106	92.37	-60.35		27	28	1	2.31
							and	52	55	3	1.58
							and	101	102	1	1.05
							and	105	106	1	1.32
TBRC109	304200	6880900	2500	82	90.05	-60.81		55	58	3	1.64
							and	65	66	1	1.00
TBRC110	304220	6880900	2500	52	90	-60		31	34	3	1.07
							and	37	38	1	1.20
TBRC111	304070	6880940	2501	148	95.16	-60.86		114	115	1	1.94
							and	121	122	1	1.74
TBRC112	304180	6880940	2500	82	90	-60					
TBRC113	304200	6880940	2500	58	90	-60	no significant results				
TBRC114	304080	6880980	2500	112	91.95	-65.22	results pending				
TBRC115	304160	6881020	2502	106	92.74	-60.68	no significant results				
TBRC116	304100	6881040	2502	64	90	-60	no significant results				
TBRC117	304060	6881080	2502	112	90	-60	results pending				
TBRC118	304100	6881080	2502	64	91.96	-60.57	no significant results				
TBRC119	304140	6881080	2502	142	90	-60	no significant results				
TBRC120	304180	6881080	2502	82	90	-60		66	69	3	1.19
TBRC121	304108.8	6880925	2501.333	106	90	-60		**56**	**86**	**30**	**2.07**
TBRC122	304112.3	6880890	2500.741	124	89.36	-60.9		**54**	**94**	**40**	**1.79**
							and	100	101	1	2.43
TBRC123	304125.7	6880810	2499.67	130	90	-60		62	63	1	9.66
							and	70	90	20	1.57
							and	99	100	1	7.38
							and	107	112	5	2.86
							and	122	123	1	1.41
TBRC124	304123.8	6880780	2499.163	148	89.08	-61.24		68	69	1	1.45
							and	**89**	**142**	**53**	**1.08**

THUNDERBOX UNDERGROUND DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
THGC133	304238.4	6879183	253.407	240.87	95.4	-32.19		124	125.04	1.04	6.50
							and	136	137	1	2.63
							and	218.36	222.3	3.94	3.64
THGC134	304219.7	6879254	252.203	233.92	94.1	-25.24		109.86	114.6	4.74	1.53
							and	207.73	215.77	8.04	3.27
THGC135	304219.7	6879254	252.221	224.66	81.1	-28.25		107.4	114.9	7.5	1.34
							and	188.54	189	0.46	6.40
							and	200	217.75	17.75	2.62
THGC136	304219.6	6879254	252.051	229.9	77.7	-36.32		111.6	112.18	0.58	2.63
							and	123.5	124	0.5	7.14
							and	**203**	**227.24**	**24.24**	**2.55**
THGC137	304204.8	6879310	250.879	238.01	67.1	-34.29		110	110.45	0.45	4.24
							and	194.62	215.67	21.05	2.05
							and	223	225.8	2.8	2.12
THGC138	304183.8	6879388	250.674	243.1	74.1	-35.88		98.15	99	0.85	2.59
							and	193	213.65	20.65	2.05
THGC139	304183.7	6879388	250.668	245.92	62.9	-35.77		94.76	95.1	0.34	4.01
							and	194.78	206	11.22	1.84
							and	212	212.8	0.8	25.60
THGC140	304169.8	6879438	251.715	243	55.8	-32.95		180.66	181.12	0.46	3.61
							and	188.55	215.07	26.52	1.40
							and	227.1	228.1	1	5.53
THGC141	304169.8	6879438	251.681	231	70.1	-29.85		93	93.8	0.8	2.20
							and	184	192.5	8.5	2.89
							and	217	217.7	0.7	2.47
THGC142	304169.8	6879439	251.703	248.82	52.8	-27.06		92.5	95	2.5	1.68
							and	184.7	196.25	11.55	1.74
							and	205.32	206	0.68	2.00
							and	212.92	214	1.08	6.32
							and	237	239.1	2.1	2.21
THGC143	304239.1	6879181	253.347	244.99	81.4	-40.75		219	230	11	2.91
THGC144	304239.3	6879180	253.364	248.8	103.1	-37.95		132	133.8	1.8	6.12
							and	229.2	240	10.8	1.76
THGC145	304239.2	6879181	253.335	248.7	73.3	-46.10		125.6	132.9	7.3	1.79
							and	226.45	239.2	12.75	1.45
THGC146	304239.3	6879180	253.254	270.1	111.6	-40.55		141	142	1	2.72
							and	254.28	255.03	0.75	2.58
THGC147	304169.9	6879437	252.131	353.2	25.8	-38.29		**254.88**	**344**	**89.12**	**2.02**
							incl	266	333.71	67.71	2.29
THGC148	304169.9	6879437	252.131	321.01	31.6	-36.11		118.75	119.2	0.45	2.61
							and	**241**	**315**	**74**	**1.67**
THGC149	304169.9	6879437	252.131	272.95	48.7	-40.49		85	85.75	0.75	2.20
							and	201.7	202	0.3	4.99
							and	204.85	261.3	56.45	1.85
THGC150	304169.9	6879437	252.131	317.87	43.5	-45.14		109	109.95	0.95	2.52
							and	**220**	**292**	**72**	**2.35**
							and	301.4	302	0.6	2.16

THUNDERBOX UNDERGROUND DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
THGC151	304169.9	6879437	252.131	255	63.5	-41.35		197	236	39	1.41
THGC152	304169.9	6879437	252.131	276.04	68.3	-47.00		95	96	1	8.31
							and	207	252.45	45.45	2.38
THGC153	304183.4	6879389	250.326	264.23	65.8	-41.97		182.97	183.9	0.93	5.81
							and	202.13	220	17.87	1.91
THGC154	304183.4	6879389	250.48	282	65.4	-50.37		225	229.79	4.79	1.36
							and	240	246.41	6.41	1.67
THGC155	304183.4	6879389	250.47	267.13	78.3	-48.85		110	111	1	2.49
							and	214	227	13	2.10
								247.2	248.16	0.96	2.27
THGC156	304183.5	6879389	250.506	269.95	95.7	-46.99		242.95	244.65	1.7	3.16
							and	256	258	2	2.68
THGC157	304204.7	6879310	251.048	270	76.1	-48.98		208.46	209.27	0.81	4.05
							and	229	232	3	2.80
							and	255.75	259	3.25	1.87
THGC158	304229.6	6879256	252.46	264.75	74.7	-49.32		217.87	218.33	0.46	2.43
							and	224	224.3	0.3	3.94
THGC159	304230.6	6879256	253.164	128.85	85.7	-10.01	no significant results				
THGC160	304230.7	6879256	253.146	134.78	98.2	-8.38		102	108.35	6.35	1.73
THGC161	304230.4	6879256	253.131	149.92	107.3	-7.61		113.12	115.6	2.48	2.26
							and	121	122	1	2.88
THGC162	304230.5	6879257	253.044	113.23	82.2	-23.45		95	95.52	0.52	2.07
THGC163	304230.4	6879256	253.069	127.15	100.3	-21.28		117	118	1	3.40
THGC164	304230.4	6879256	253.069	146.98	111	-18.99		116.3	119.15	2.85	18.25
THGC165	304236.4	6879359	255.723	78.31	65.9	-18.46	no significant results				
THGC166	304236.5	6879358	255.865	79.78	86	-17.97		63.85	64.79	0.94	7.59
THGC167	304236.4	6879359	254.959	82.8	87	-42.99		67	70	3	3.66
THGC189	304418.6	6879208	149.071	14.92	78	45.00		0	11	11	3.16
THGC190	304418.6	6879208	149.076	15.02	78	0.00		0	5	5	3.22
THGC191	304418.4	6879208	147.86	14.58	78	-45.00		0	4	4	4.05
THGC192	304419.9	6879197	149.306	14.87	78	45.00		3	10.55	7.55	2.62
THGC193	304419.9	6879197	149.194	15.01	78	0.00		0	5.5	5.5	3.76
THGC194	304419.7	6879197	147.924	15	78	-45.00		0	5.1	5.1	2.47
THGC195	304420.1	6879196	149.181	14.82	135	0.00		1.1	10.8	9.7	2.28
THRD043	304239.4	6879179	254.351	278.05	107.3	-3.75		236.88	242.3	5.42	2.23
THRD044	304239.3	6879179	254.485	279	114.5	-3.07		262.9	265.26	2.36	3.15
							and	272	273	1	2.18
THRD045	304239.4	6879180	254.453	270	112.7	-8.66		**242.09**	**247.03**	**4.94**	**4.25**
THRD046A	304239.3	6879180	254.133	243	106.6	-16.36		228.8	232	3.2	3.07
THRD047	304239.4	6879179	254.145	255.1	113.9	-14.80		139	139.7	0.7	2.37
							and	240.57	243.25	2.68	3.70
THRD048	304239.4	6879179	254.065	288.4	120.8	-13.31		178	179	1	9.17
							and	259	261.13	2.13	2.42
THRD049	304239.4	6879180	253.868	249.35	112.3	-22.53		145.7	146.41	0.71	3.41
							and	225.62	227.36	1.74	3.36
THRD050	304239.3	6879179	253.857	309	125.8	-19.95		289.47	292.5	3.03	2.05
THRD051	304239.2	6879179	253.859	280	119.6	-20.29		172	173	1	6.38
							and	260.78	261.82	1.04	2.76
THRD052	304239.2	6879179	253.794	267.36	113.5	-28.21		240.8	243	2.2	3.42
							and	261	262	1	2.65
THRD053	304239.4	6879180	253.819	291.7	120.4	-24.98		264.08	266.1	2.02	3.18

THUNDERBOX UNDERGROUND DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
THRD054	304239.2	6879179	254.918	273	107.8	2.12		256.6	260	3.4	2.87
THRD055	304239.2	6879179	254.98	296.98	114.8	1.64		184	185	1	3.87
							and	267.4	268	0.6	2.09
							and	280	283.9	3.9	2.78
THRD056	304239.2	6879179	254.777	294.01	119.6	-8.53		176	176.6	0.6	2.00
							and	**191**	**195.4**	**4.4**	**4.36**
							and	276	277	1	2.11
							and	278.8	281	2.2	2.46
THRD057	304239	6879179	254.193	363.07	131.4	-11.00		350.7	353.6	2.9	3.07
THRD058	304239	6879179	254.442	381.73	130	-6.09	no significant results				
THRD059	304239.1	6879179	254.431	305.17	124.5	-12.20		175.5	176.4	0.9	3.48
							and	291	295.87	4.87	2.77
THRD060	304239.2	6879179	254.664	321.36	120	0.34		194.52	195.5	0.98	2.44
							and	204	205	1	4.74
							and	292.07	293	0.93	2.48
THRD061	304239.1	6879179	253.886	264.13	111.7	-21.52		237.62	239.96	2.34	3.39
THRD062	304239.2	6879179	254.958	309.43	113.1	6.02		184.9	185.3	0.4	4.93
							and	192	193	1	4.18
							and	267	268	1	3.86
							and	279	280	1	3.71
THRD063	304239.2	6879179	255.045	270.2	105.9	6.80		245	245.5	0.5	2.89
							and	260.59	261.3	0.71	2.21
THRD064	304238.7	6879181	254.561	265.5	99	7.23		231.68	232.08	0.4	25.20
							and	238.73	239.3	0.57	3.47
							and	244	246.4	2.4	3.28
THRD065	304238.7	6879181	254.561	272.11	103.3	1.80		232.22	233	0.78	2.19
							and	245.4	248	2.6	3.27

Table 4 – Otto Bore Drill Results

OTTO BORE DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
OBRC0088	304919.2	6889315	487.569	142	94.23	-59.73		**66**	**82**	**16**	**6.12**
OBRC0089	304890.4	6889298	487.77	160	90.34	-60.52		**99**	**112**	**13**	**7.80**
							and	116	117	1	1.78
							and	124	138	14	1.75
OBRC0090	304829.6	6889254	488.124	220	88.75	-59.65		76	77	1	1.39
OBRC0091	304861.6	6889252	488.062	202	89.15	-60.89		174	175	1	1.41
OBRC0092	304902.7	6889248	487.811	160	90	-60		97	98	1	2.51
							and	101	102	1	2.49
OBRC0093	304844.4	6889220	488.083	216	89.07	-60.43		**159**	**161**	**2**	**11.62**
							and	168	172	4	1.52
OBRC0094	304870.6	6889225	487.859	190	86.23	-60.36		135	140	5	2.89
OBRC0095	304913.1	6889215	487.71	154	85.78	-60.25		92	93	1	3.19
							and	97	98	1	3.72
OBRC0096	304933.7	6889225	487.688	130	90.33	-60.1		60	61	1	1.16
							and	63	64	1	1.12
							and	**68**	**76**	**8**	**27.22**
OBRC0097	304863.6	6889189	488	190	90	-60	and	145	148	3	3.65
							and	153	154	1	1.01
							and	157	159	2	1.50
OBRC0098	304889.9	6889199	487.926	166	90	-60		126	134	8	1.03
OBRC0099	304939.6	6889200	487.647	124	86.58	-60.23		59	60	1	1.73
							and	64	69	5	1.22
							and	100	101	1	1.07
OBRC0100	304880.3	6889176	488.099	184	87.7	-60.56		138	140	2	2.31
							and	146	147	1	1.29
OBRC0101	304846.5	6889160	488.343	214	89.49	-60.11		**169**	**174**	**5**	**4.28**
OBRC0102	304910.3	6889154	487.879	160	91.17	-60.24		110	111	1	1.43
							and	116	119	3	1.48
OBRC0103	304866.5	6889137	488.259	184	93.17	-59.71		148	149	1	3.57
							and	**154**	**161**	**7**	**4.16**
							and	178	179	1	3.00
OBRC0104	304890.2	6889140	488.079	184	90	-60		138	144	6	1.30
OBRC0105	304928.1	6889139	487.832	202	90.06	-60.11		73	74	1	1.90
							and	85	87	2	1.58
							and	91	92	1	3.30
							and	116	117	1	1.46
							and	128	129	1	2.25
OBRC0106	304854.6	6889120	488.247	220	90	-60		**168**	**173**	**5**	**11.64**
OBRC0107	304881.8	6889121	488.149	220	90.31	-60.48		139	140	1	2.57
							and	145	146	1	1.87
							and	149	152	3	1.83
OBRC0108	304939.4	6889118	487.79	154	88.7	-59.83		**83**	**89**	**6**	**1.95**
OBRC0109	304920	6889098	487.888	190	92.32	-59.88		101	102	1	3.07
							and	119	121	2	1.69
OBRC0110	304860.8	6889079	488.305	220	90	-60	no significant intercepts				
OBRC0111	304881	6889053	488.134	202	89.42	-60.73		148	156	8	1.58
OBRC0112	304911.8	6889053	487.939	172	90	-60		91	92	1	1.67
								121	122	1	2.98
								136	137	1	1.26
								152	153	1	2.46
OBRC0113	304860	6889035	488.38	220	90	-60	no significant intercepts				
OBRC0114	304900.5	6889033	488.189	190	90	-60		134	137	3	1.35
							and	149	150	1	1.23
OBRC0115	304879.8	6889015	488.3	214	88.87	-60.95		144	145	1	1.63
							and	162	163	1	1.35
							and	168	169	1	1.29

OTTO BORE DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
OBRC0116	304900.6	6889014	488.148	190	90	-60		117	118	1	1.03
							and	136	137	1	1.37
							and	139	140	1	1.37
OBRC0117	304943.5	6889009	487.831	154	87.73	-60.43		74	76	2	1.29
OBRC0118	304859.1	6888988	488.441	232	87.34	-60.49		183	185	2	1.61
							and	195	196	1	1.25
OBRC0119	304892.5	6888973	488.299	214	90	-60		22	24	2	1.84
							and	151	155	4	1.06
							and	168	169	1	1.10
							and	173	174	1	1.04
							and	179	180	1	1.81
OBRC0120	304918.5	6888974	488.265	184	91.03	-60.73		**119**	**128**	**9**	**7.30**
							and	144	145	1	2.95
							and	161	163	2	1.39
							and	174	175	1	1.22
OBRC0121	304951.2	6888973	488.058	148	94.57	-60.59		99	100	1	5.67
							and	104	106	2	1.88
OBRC0122	304882.6	6888955	488.528	226	90	-60		165	170	5	2.58
							and	187	188	1	4.10
OBRC0123	304872.1	6888934	488.626	244	86.95	-59.93		**176**	**182**	**6**	**7.06**
							and	193	195	2	1.28
OBRC0124	304901.2	6888933	488.552	208	90	-60		146	147	1	1.12
							and	175	176	1	2.25
OBRC0125	305014	6888940	487.889	94	87.54	-61.3		4	5	1	1.11
							and	32	36	4	2.53
OBRC0126	304892.2	6888912	488.601	220	94.06	-60.2		157	160	3	2.85
OBRC0127	304891.7	6888878	488.526	220	90	-60		183	184	1	2.24
							and	189	190	1	1.37
OBRC0128	304943.5	6888885	488.321	184	90	-60		123	124	1	1.22
							and	128	132	4	6.71
OBRC0129	305026	6888880	487.901	100	84.23	-61.06		31	33	2	5.64
							and	37	38	1	5.80
							and	47	48	1	1.11
OBRC0130	304881.1	6888854	488.636	232	86.44	-61.01		56	57	1	2.26
							and	174	179	5	1.81
OBRC0131	304911.1	6888854	488.539	190	95.57	-60.12		137	139	2	1.54
							and	176	177	1	5.56
OBRC0132	304990	6888860	488.1	118	90	-60	results pending				
OBRC0133	304903.5	6888835	488.618	214	89.74	-60.97		152	153	1	2.80
							and	159	162	3	2.31
							and	165	166	1	1.29
OBRC0134	304882.9	6888809	488.696	232	90	-60	no significant intercepts				
OBRC0135	304919.8	6888809	488.572	196	85.99	-59.87		139	140	1	1.89
							and	154	155	1	6.01
							and	174	175	1	1.31
							and	178	180	2	1.34
OBRC0136	304910.9	6888790	488.598	214	83.6	-60.77		151	153	2	2.33
							and	**157**	**163**	**6**	**1.61**
OBRC0137	304951.9	6888789	488.421	184	96.29	-59.91		**135**	**142**	**7**	**5.62**
							and	157	161	4	5.16

Table 5 – Atbara Drill Results

ATBARA DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
ATEX025	437366	6668084	350	378.9	235	-60		55.3	62.2	6.9	2.11
							and	94.5	98.6	4.1	0.52
							and	102.5	104.5	2	3.66
							and	158	159	1	0.86
ATEX027	437497.9	6668176	350	547	234.67	-60		140	142	2	2.01
							and	171	172	1	2.41
							and	190	192	2	0.78
							and	198	199	1	0.62
							and	**208**	**330**	**122**	**1.05**
							and	383	387	4	0.78
							and	414	421.66	7.66	2.62
							and	427	428	1	1.37
							and	435	436	1	2.54
							and	455	457	2	1.62
							and	469	471	2	0.75
							and	482	483.19	1.19	0.65
							and	494	496	2	1.04
							and	501.1	510.62	9.52	1.06
ATEX035	437293.1	6668568	345	853	235	-70		168	177	9	0.55
							and	**200.55**	**290**	**89.45**	**1.09**
							and	308	309	1	2.58
							and	315	325	10	1.04
							and	335	336.35	1.35	0.86
							and	429	432.5	3.5	0.61
							and	**470**	**488.72**	**18.72**	**3.03**
							and	516	520	4	1.43
							and	628	629	1	0.65
ATEX036	437009.5	6668169	345	545.8	235	-60	results pending				
ATEX037	437408	6668407	345	805	235	-65	results pending				
ATEX042	437233	6668910	350	712	235	-65	results pending				
ATEX043	437300	6668698	350	480.8	235	-70		357.3	360.1	2.8	2.23
							and	372	373	1	1.77
							and	**438**	**451.1**	**13.1**	**1.52**
							and	460.2	463.8	3.6	0.80
ATEX044	437003	6668337	350	430	233	-70		39.65	43	3.35	0.71
							and	47	48	1	1.37
							and	144	145	1	1.69
ATEX045	437847.3	6667835	350	550	236.67	-65		449.13	452.93	3.8	2.67
ATEX046	437715.8	6667744	350	573.5	235	-65		229	231	2	1.52
							and	241	242	1	1.23
							and	252	253	1	1.94
ATEX049	437615.4	6668062	350	250	235.61	-64.74	no significant results				
ATEX050	437483.9	6667971	350	250	235	-65		100	104	4	0.50
ATEX051	437346.8	6667873	350	334	236.65	-64.83		196	200	4	0.53
							and	224	236	12	1.09
							and	268	272	4	0.50
ATEX053	437382	6667314	350	406	234.67	-65		56	59	3	1.91
							and	171.58	174	2.42	1.55
							and	226	227	1	0.56
							and	272	273	1	0.77

ATBARA DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
ATEX054	437513.1	6667406	350	424	235	-65		242	263	21	0.56
							and	270	271	1	0.52
							and	273	275	2	0.64
							and	390	391	1	1.76
							and	396.8	405.2	8.4	0.82
ATEX055	437644.2	6667497	350	454.2	235	-65		258.12	260.5	2.38	0.52
ATEX056	437558.9	6667828	350	415	235	-65		132	133	1	0.56
							and	189	192	3	0.81
							and	250	251	1	1.00
ATEX057	437427.8	6667737	350	405.1	235	-65		173	174	1	1.10
							and	240	241	1	0.52
							and	243	244	1	1.62
							and	**260.7**	**279**	**18.3**	**0.65**
ATEX058	437270	6667650	350	406	234.67	-65		206	211	5	2.68
							and	276	284	8	3.78
							and	306	318	12	0.68
ATEX059	437385	6668485	350	1404.7	200	-81.5		589.78	591	1.22	1.60
							and	647.48	649	1.52	1.46
							and	691.12	695.04	3.92	1.89
							and	710	711.41	1.41	0.88
							and	717.57	719.19	1.62	1.05
							and	732	733.03	1.03	0.57
							and	741.06	743.1	2.04	0.75
							and	**748.09**	**757**	**8.91**	**1.71**
							and	770.65	773.6	2.95	1.48
							and	780.9	786.69	5.79	0.98
							and	801	802	1	0.85
							and	811	812	1	7.16
							and	838.71	840.98	2.27	0.95
							and	850.11	853.24	3.13	1.54
							and	1169.35	1170.61	1.26	1.84
							and	1225.95	1235	9.05	0.83
ATEX061	436996	6668802	347.75	290	240.1	-54.57		30	37	7	0.73
							and	52	53	1	0.57
							and	71	74	3	0.63
							and	148	149	1	0.66
							and	178	179	1	0.80
							and	**188**	**217**	**29**	**0.88**
ATEX068	437097	6668607	348.3	298	235.11	-60.51		44	46	2	0.93
							and	85	86	1	0.64
							and	90	91	1	0.67
							and	100	101	1	0.84
							and	128	129	1	0.51
							and	160	161	1	0.59
							and	201	202	1	2.04
							and	210	215	5	0.87
							and	227	229	2	0.57
							and	**251**	**257**	**6**	**4.27**
ATEX075	437132.7	6668494	347.682	334	234.74	-60.86		71	73	2	0.58
							and	116	117	1	0.63
							and	152	153	1	0.72
							and	157	158	1	0.64
							and	169	170	1	0.83
							and	183	185	2	1.26
							and	**200**	**249**	**49**	**1.13**
							and	254	255	1	0.63
							and	261	262	1	0.66
							and	264	265	1	0.94
							and	305	306	1	0.77

ATBARA DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade g/t
ATEX076	437227.1	6668546	346.544	400	231.27	-64.63		47	48	1	2.17
							and	56	57	1	0.57
							and	68	69	1	1.04
							and	99	100	1	0.67
							and	154	155	1	1.59
							and	163	165	2	4.31
							and	173	174	1	0.54
							and	181	186	5	0.54
							and	192	194	2	7.62
							and	201	202	1	0.50
							and	203	204	1	0.50
							and	208	209	1	1.74
ATEX079	437306.5	6668515	346.036	318	235	-55		**104**	**130**	**26**	**1.47**
							and	136	143	7	1.35
							and	162	167	5	1.15
							and	173	174	1	0.53
							and	197	198	1	0.64
							and	210	232	22	1.22
							and	238	239	1	0.71
							and	244	245	1	1.07
							and	282	283	1	0.53
							and	291	292	1	0.56
							and	298	299	1	1.57
							and	312	318	6	2.46
ATEX082	437203.7	6668387	347.586	322	235.22	-60.44		85	86	1	1.11
							and	123	134	11	0.91
							and	140	143	3	0.58
							and	146	147	1	0.60
							and	174	175	1	0.61
							and	180	181	1	0.65
							and	274	283	9	0.71
							and	290	292	2	0.71
							and	297	298	1	0.60
ATEX085	437337.6	6668385	347.05	232	234.42	-59.84		112	116	4	0.74
							and	148	150	2	1.38
							and	163	165	2	0.55
							and	170	171	1	0.66
							and	178	192	14	1.11
							and	201	206	5	0.84
							and	213	216	3	2.68
							and	221	222	1	14.79
							and	228	229	1	0.56

Table 6 – Mt Celia Drill Results

MT CELIA DRILLING NOVEMBER 2019										Downhole	
Hole	Easting	Northing	RL	Depth	Azimuth	Dip		From (m)	To (m)	Width (m)	Grade ppb
MCAC0951	451900	6722052	358	110	0	-90		60	64	4	37.9
MCAC0974	454197	6722077	360	98	0	-90		92	98	6	45.1
MCAC0975	454300	6722059	360	112	0	-90		80	84	4	46.1
MCAC0977	454504	6722046	360	87	0	-90		84	87	3	31.4
MCAC0981	452003	6721139	360	108	0	-90		60	64	4	33.2
							and	92	96	4	30.4
MCAC0982	452101	6721147	360	114	0	-90		84	88	4	27.9
							and	112	114	2	24.1
MCAC0983	452199	6721150	359	108	0	-90		56	60	4	25.7
							and	76	80	4	26.2
							and	100	108	8	87.5
MCAC0984	452302	6721145	360	119	0	-90		56	64	8	30.4
MCAC0989	452800	6721140	360	97	0	-90		72	76	4	21.1
MCAC0992	453099	6721157	365	96	0	-90		60	64	4	24.6
MCAC0993	453205	6721169	365	100	0	-90		80	84	4	27.6
MCAC0994	453139	6721152	365	108	0	-90		104	108	4	24.7
MCAC1003	454010	6721160	370	91	0	-90		84	88	4	65.5
MCAC1004	454103	6721142	370	91	0	-90		80	88	8	250.9
MCAC1012	452116	6720316	380	87	0	-90		52	56	4	41.0
MCAC1017	452611	6720318	380	105	0	-90		80	88	8	26.9
MCAC1023	453218	6720315	360	118	0	-90		60	64	4	34.5
MCAC1027	453614	6720322	360	98	0	-90		**88**	**96**	**8**	**1639.6**
MCAC1028	453714	6720316	360	101	0	-90		80	84	4	31.8
							and	88	96	8	160.1
MCAC1030	453907	6720323	360	95	0	-90		16	20	4	56.8
MCAC1031	454010	6720321	360	109	0	-90		92	96	4	22.0
MCAC1048	453497	6719360	357	93	0	-90		80	84	4	52.3
MCAC1059	452398	6719346	359	95	0	-90		92	95	3	24.7
MCAC1070	451997	6718449	364	107	0	-90		64	68	4	49.4
							and	104	107	3	56.1
MCAC1081	453102	6718442	381	91	0	-90		84	91	7	71.2

Karari 2012 JORC Table 1 (Including KA Sth)

Section 1: Sampling Techniques and Data		
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.*	Sampling methods undertaken by Saracen at Karari have included reverse circulation drillholes (RC), diamond drillholes (DD) and RC grade control drilling within the pit, and diamond drilling and face chip sampling underground. Historic sampling methods conducted since 1991 have included aircore (AC), rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling and face chip sampling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling was completed by previous holders to industry standard at that time (1991- 2004).
	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*	RC chips are cone or riffle split and sampled into 1m intervals, diamond core is NQ or HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core and underground faces are chip sampled to geological boundaries (0.2-1m). All methods are used to produce representative sample of less than 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Some grade control RC chips were analysed in the Saracen on site laboratory using a PAL (pulverise and leach) method. Visible gold is sometimes encountered in underground drillcore and face samples. Historical AC, RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay and unspecified methods.
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.).*	The deposit was initially sampled by 11 AC holes, 452 RAB holes, 496 RC holes (assumed standard 5 ¼ ''bit size) and 25 surface unknown diameter diamond core holes. Saracen has completed 14 surface RC precollars with HQ and NQ diamond tail drill holes (precollars averaging 287m, diamond tails averaging 168m) , 76 RC holes from both surface and within the pit (recent drilling utilised a 143mm diameter bit with a face sampling hammer and an external auxiliary booster) and 3052 grade control RC holes within the pit. 786 NQ diamond holes have been drilled underground. 2002 underground faces and walls have been chip sampled. Diamond tails were oriented using an Ezi-mark tool. Some historic surface diamond drill core appears to have been oriented by unknown methods.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded in the database as a percentage based on a visual weight estimate; no historic recoveries have been recorded. Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >90%.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. UG faces are sampled from left to right across the face at the same height from the floor. During GC campaigns the sample bags weight versus bulk reject weight are compared to ensure adequate and even sample recovery. Historical AC, RAB, RC and diamond drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries due to the competent nature of the ground meaning loss of material is minimal. Any historical relationship is not known.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate*	Logging of RC chips and diamond drill core records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	Mineral Resource estimation, mining studies and metallurgical studies. *Whether logging is qualitative or quantitative in nature.* *Core (or costean, channel, etc) photography.*	Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. All faces are photographed and mapped. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All RC and diamond drillholes holes are logged in full and all faces are mapped. Every second drill line is logged in grade control programs with infill logging carried out as deemed necessary. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	All exploration and grade control RC samples are cone or riffle split. Occasional wet samples are encountered. Underground faces are chip sampled using a hammer. AC, RAB and RC drilling has been sampled using riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC and underground face chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. No duplicates have been taken of underground core or face samples. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg are considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.
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.*	RC chip samples, grade control chip samples, underground face chip samples and diamond core are analysed by external laboratories using a 40g or 50g fire assay with AAS finish. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Some GC samples were analysed in the Saracen onsite laboratory using pulverise and leach method. This method is a partial digest. Historic sampling includes fire assay and unknown methods.
	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 geophysical tools have been utilised for reporting gold mineralisation.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD, and 1:40 for GC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	The use of twinned holes.	No specific twinned holes have been drilled at Karari but grade control drilling and underground diamond drilling has confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pit and immediate surrounds are picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. All underground drillhole collars are picked up by company surveyors using a Leica TS15i (total station) with an expected accuracy of +/-2mm. Underground faces are located using a Leica D5 disto with and accuracy of +/- 1mm from a known survey point. Downhole surveys are carried out using the DeviFlex RAPID continuous inrod survey instrument taking readings every 5 seconds, In and Out runs and reported in 3m intervals, survey accuracy +-3:1000. A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Karari) is used. The two point conversion to MGA_GDA94 zone 51 is KAREast KARNorth RL MGAEast MGANorth RL Point 1 4000 8000 0 439359.94 6663787.79 0 Point 2 3000 7400 0 438359.84 6663187.72 0 Historic data is converted to the Karari local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is 25m x 25m.
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The majority of drillholes are positioned to achieve optimum intersection angles to the ore zone as are practicable. Underground diamond drilling is designed to intersect the orebody in the best possible orientation given the constraints of underground drill locations. UG faces are sampled left to right across the face allowing a representative sample to be taken.
	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 significant sampling bias has been recognised due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted.

Section 2: Reporting of Exploration Results		
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 Karari pit is located on M28/166 and M28/167 Mining Leases M28/166 and M28/167 are held 100% by Saracen Gold Mines Pty Ltd a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Leases M28/166 and M28/167 have a 21 year life (held until 2020) and are renewable for a further 21 years on a continuing basis. There are no registered Aboriginal Heritage sites within Mining Leases M28/166 and M28/167. M28/166 and M28/167 are the subject of the Maduwongga native title claim (WC2017/001). Mining Leases M28/166 and M28/167 are subject to two third party royalties payable on the tenements, a bank mortgage (Mortgage 499142) and two caveats (Caveat 51H/067 and 52H/067, respectively). All production is subject to a Western Australian state government NSR royalty of 2.5%. The tenements are subject to the Pinjin Pastoral Compensation Agreement. The Mining Rehabilitation Fund applies to the tenements.
	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.	The tenements are in good standing and the licence to operate already exists
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Carosue Dam project area in which the Karari deposit is located has been subjected to extensive gold exploration by numerous companies since 1991. Karari was highlighted as an area of interest following an aeromagnetic survey conducted by CRA Exploration. Auger sampling of the target defined a widespread gold anomaly with follow up RAB drilling intersecting significant gold mineralisation. RC and DD drilling further defined the mineralisation before Aberfoyle entered into a joint venture agreement with CRA. Further drilling by Aberfoyle defined mineralisation over a 600m strike length. Aberfoyle were subject to a hostile takeover by Western Metals with PacMin then purchasing the Carosue Dam project. An intensive resource definition program consisting of both RC and DD drilling was carried out before mining of Karari commenced in 2000.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Karari deposit sits along the regional NNW-trending Keith-Kilkenny fault zone within the eastern edge of the Norseman-Wiluna greenstone belt. The deposit itself is lithologically and structurally controlled and sits within an altered volcaniclastic sandstone unit that has been offset along a series of major faults running NE-SW and NW-SE, as well as intruded by large lamprophyre units post mineralization. Mineralization is dominated by pyrite and hosted in broad hematite altered sandstone units with a central high grade siliceous core light-moderately dipping to the North.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
Drillhole information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	All material data is periodically released on the ASX: 31/07/2018, 01/05/2018,15/02/2018, 27/11/2017, 26/09/2017, 13/07/2017, 01/05/2017, 21/02/2017, 13/04/2016, 23/02/2016, 10/12/2015, 03/07/2015, 25/05/2015, 05/05/2015, 11/03/2015, 16/01/2014, 14/10/2013, 25/01/2013, 28/07/2011, 03/06/2011, 21/04/2011, 09/02/2011, 03/11/2008
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.*	All underground diamond drillhole significant intercepts have been length weighted with a minimum Au grade of 2.5ppm. No high grade cut off has been 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.	Intercepts are aggregated with minimum width of 0.5m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in the broader mineralised zone, the higher grade interval is reported also.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
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.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths.
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.*	No Diagrams are referenced in this release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from previous campaigns have been reported, irrespective of success or not.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Further infill drilling may be carried out inside the reserve UG design to improve confidence. The drilling is getting to the depth where exploration is expensive and the approach needs to be carefully considered. Underground drilling continues and surface drilling is being evaluated. A seismic project is also being assessed.

Whirling Dervish JORC Table 1

Section 1: Sampling Techniques and Data		
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.*	Sampling methods undertaken by Saracen at Whirling Dervish have included reverse circulation (RC), surface and underground diamond drillholes (DD) and RC grade control drilling within the pit. Historic methods conducted since 1993 have included aircore (AC), rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling was completed by previous holders to industry standard at that time (1993- 2002).
	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*	Diamond core is NQ sized, sampled to 1m intervals and geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. RC chips are riffle or cone split and sampled into 1m intervals with total sample weights under 3kg Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Historical AC, RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia, B/ETA and unspecified methods.
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.).*	The deposit was initially sampled by 35 AC holes, 159 RAB holes, 407 RC holes (assumed standard 5 ¼ "bit size) and 53 surface diamond HQ core and unknown diameter holes. Saracen has completed 51 surface RC precollar with NQ diamond tail drill holes (precollars averaging 193m, diamond tails averaging 200m) , 12 diamond geotechnical holes , 80 RC holes from both surface and within the pit,4039 grade control RC holes within the pit and 222 NQ underground diamond drillholes. Diamond tails were oriented using an Ezy-mark tool. Some historic surface diamond drill core appears to have been oriented by unknown methods.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >90%. RC sampling recoveries are recorded as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. During GC campaigns daily rig inspections are carried out to check splitter condition, general site and address general issues. The sample bags weight versus bulk reject weight is compared to ensure adequate and even sample recovery. Historical AC, RAB, RC and diamond drilling to industry standard at that time.
	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.	Diamond drilling has high recoveries meaning loss of material is minimal. There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature.* *Core (or costean, channel, etc.) photography.*	Logging of diamond drill core and RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All diamond drillholes and exploration RC holes are logged in full. Every drill line is logged in grade control programs. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. Historic diamond drilling has been half core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration and GC RC samples are cone or riffle split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic AC, RAB and RC drilling was sampled using spear, grab, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling is carried out at a rate of 1:10 for exploration drilling and 1:20 for GC drilling and is sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate.
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.*	RC chip samples, grade control chip samples and diamond core are analysed by external laboratories using a 40g or 50g fire assay with AAS finish. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Historic sampling includes fire assay, aqua regia, B/ETA and unknown methods.
	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 geophysical tools have been utilised for reporting gold mineralisation at Whirling Dervish.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD, and 1:40 for GC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Whirling Dervish but grade control drilling has confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pit and immediate surrounds are picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. All underground drillhole collars are picked up by company surveyors using a Leica TS15i (total station) with an expected accuracy of +/-2mm. Downhole surveys are carried out using the DeviFlex RAPID continuous inrod survey instrument taking readings every 5 seconds, In and Out runs and reported in 3m intervals, survey accuracy +-3:1000. A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Whirling Dervish) is used. It is rotated 45 degrees west of MGA_GDA94. The one point conversion to MGA_GDA94 zone 51 is WDEast WDNorth RL MGAEast MGANorth RL Point 1 20003.8190 50277.5540 0 437865.3740 6665770.2100 0 Historic data is converted to Whirling Dervish local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for exploration drilling is 25m x 25m
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	Sample compositing is not applied until the estimation stage. Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The majority of drillholes are positioned to achieve optimum intersection angles to the ore zone as are practicable.
	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 significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2: Reporting of Exploration Results		
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 Whirling Dervish pit is located on M28/166 and M31/220, while near mine exploration has been carried out on M28/245. The tenements are held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Leases M28/166 and M31/220 have a 21 year life (held until 2020) and are renewable for a further 21 years on a continuing basis. Mining Lease M28/245 has a 21 year life (held until 2029) and is renewable for a further 21 years on a continuing basis. Mining Lease M28/166 is subject to two third party royalties and one caveat (Caveat 51H/067). Mining Lease M31/220 is subject to two third party royalties and one caveat (Caveat 64H/067) and Mining Lease M28/245 is subject to one third party royalty. There are no caveats associated with Mining Lease M28/245. Mining Leases M28/166, M28/245 and M31/220 are subject to a bank mortgage (Mortgage 499142). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Leases M28/166, M31/220 and M28/245 are subject to the Pinjin Pastoral Compensation Agreement. Mining Lease M31/220 is subject to the Pinjin and Gindalbie Pastoral Compensation Agreements. M28/166, M31/220 and M28/245 are the subject of the Maduwongga native title claim (WC2017/001). The Mining Rehabilitation Fund applies to the tenements.
	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.	The tenements are in good standing and the licence to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Carosue Dam project area in which the Whirling Dervish deposit is located has been subjected to extensive gold exploration by numerous companies since 1991. Airborne geophysics conducted by Aberfoyle Resources in 1997 highlighted numerous targets in the project area with subsequent RAB drilling intersecting the Whirling Dervish mineralisation and an extensive RC campaign confirming it. Oriole Resources obtained the project in 1998 and, through wholly owned subsidiary company PacMin, completed closely spaced RC drilling to develop the resource through to reserve status. Sons of Gwalia carried out minor drilling before their collapse and takeover of the project by St Barbara.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
Geology	*Deposit type, geological setting and style of mineralisation.*	Whirling Dervish is situated along the Kilkenny-Yilgangi fault zone on the boundary of the Steeple Hill and Mulgabbie domains. The lithology comprises primarily intermediate felsic volcaniclastic sandstones, intermediate tuffs and intermediate porphyry units intruded by granites of varying composition, with stratigraphy dipping generally to the east at approx. 60 degrees. Mineralization has a combined lithological and structurally control dipping parallel to the stratigraphy. Mineralization is continuous along strike in the footwall but is very discontinuous and patchy in the hanging wall structures and overall controlled by the general NW trending ductile faulting and is characterized by weak Hematite banding on the margins to intense hematite-silica alteration hosted in breccia zones adjacent to the faulting with high grade cores typically sericite-silica breccia. Pyrite is the dominant sulphide. The mineralization is terminated to the west by the by a NW trending shear zone dipping 60 degrees to the east.
Drillhole information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	All material data is periodically released on the ASX: 31/07/2018, 01/05/2018, 15/02/2018, 27/11/2017, 15/10/2015, 14/10/2013, 23/07/2013, 03/12/2012, 10/10/2012, 31/07/2012, 27/04/2012, 06/03/2012, 27/01/2012, 06/01/2012, 26/10/2011, 01/08/2011, 28/07/2011, 03/06/2011, 21/04/2011, 09/02/2011
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.*	All significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been 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.	Intercepts are aggregated with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in the broader mineralised zone, the higher grade interval is reported also.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
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.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths.
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.*	No Diagrams are referenced in this release.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from previous campaigns have been reported, irrespective of success or not.
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.*	Drilling is on going on surface and underground. A seismic project is also being assessed.

Thunderbox JORC Table 1

Section 1: Sampling Techniques and Data		
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.*	Sampling methods undertaken by Saracen at Thunderbox include diamond drilling (DD) and reverse circulation (RC) drilling. Sampling methods undertaken by previous owners have included rotary air blast (RAB), DD and RC drilling and blast hole sampling within the pit. Limited historical data has been provided by previous owners.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips and diamond core provide high quality representative samples for analysis Historic RC, RAB, and DD core drilling is assumed to have been completed by previous holders to industry standard at that time (1999- 2007).
	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*	RC chips are cone split and sampled into 4m or 1m intervals with total sample weights under 3kg Diamond core is NQ or HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. All historic RAB, RC and DD and sampling is assumed to have been carried out to industry standard at that time.

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
		RC grade control drilling was used to obtain 1m samples or 2m composite samples from which 3 kg was pulverised to create a 50g charge for fire assay, while blast hole samples were composited into 2.5m before a 3kg sample was obtained for pulverising to a final 50g charge for fire assay.
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.).*	The deposit was initially sampled by 470 RAB holes. Further drilling included 306 RC holes (assumed standard 5 ¼ ''bit size) , 216 HQ, NQ and PQ diamond drillholes , approximately 15,400 blast holes and 2,400 RC grade control holes. Some diamond drilling carried out for geotechnical studies was oriented (the method is unknown), it is unknown if other core was oriented. Saracen completed 46 RC drillholes, 8 diamond geotechnical holes, 65 RC precollar diamond tail drillholes (precollars averaging 122m, diamond tails averaging 351m), 93 underground DD holes and 1998 RC grade control holes. The RC drilling was completed with a 5.5 inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. Diamond drilling was HQ or NQ diameter. Drill core was oriented utilising an ACT II core orientation tool.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Recoveries for RC drillholes and precollars are recorded as a percentage based on a visual weight estimate. Recoveries for some grade control drilling and blast hole sampling have been recorded based on a visual weight estimate. No other recoveries have been provided, it is unknown if they were recorded
	Measures taken to maximise sample recovery andensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Measures were taken to supress groundwater. Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. Historical drilling is assumed completed to industry standard at that time
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries meaning loss of material is minimal. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature.* *Core (or costean, channel, etc) photography.*	Logging of RC chips and diamond drill core records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All drillholes completed by Saracen have been logged in full.

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Duplicate core samples are quarter cored. Samples are always collected from the same side.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	All exploration RC samples are cone split. Occasional wet samples are encountered. The sampling method for historic RAB and RC drilling is unknown. Grade control RC drilling has been cone split while blast hole sampling has been riffle split. Wet drilling was rarely encountered, and extra care was taken to clean the splitter after encountering wet samples. Drillholes in puggy, wet clays were abandoned and redrilled once dewatering of the pit had commenced. Care was taken to adjust the splitter orifice for grade control drilling to ensure the sample weight did not exceed 3kg, meaning no subsampling was needed at the preparation stage.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. The sampling techniques for historic exploration RAB, RC and DD drilling are unknown, best practice is assumed. The sample preparation of RC grade control drilling and blast hole sampling involved oven drying, coarse crushing and total grinding in an LM5.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Best practice is assumed at the time of historic RAB, DD and RC sampling. Procedures adopted to ensure sample representivity for RC grade control and blast hole sampling included weight analysis to determine split ratio (at least 2 holes per program) and sizing analysis of every 25th sample, with an expected return of 90% passing 75um.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. It is unknown if duplicate sampling was performed on historic exploration RAB, RC and DD drilling. Field duplicates were carried out on RC grade control drilling at a rate of one per hole, collected from the second sample port on the cone splitter. Duplicates were carried out at a rate of 1 in 20 for blast hole sampling.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Analysis of data determined sample sizes were considered to be appropriate.
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.*	RC chip samples and diamond core are analysed by an external laboratory using a 40g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. A 50 gram fire assay with AAS finish was used to determine the gold concentration for all grade control samples. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Methods for exploration RC, RAB and DD drilling included fire assay with AAS finish, BAAS and unknown methods.
	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.	The clay mineralogy of the deposit was investigated using PIMA (Portable Infra-red Microscopic Analyser) analysis to assist with geological interpretation. This data was not used in the estimation process.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly.

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
		Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel
	The use of twinned holes.	A number of exploration RC holes were drilled to twin original RAB holes and verify results.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using a hired Reflex EZ-gyro by the respective drilling companies on a regular basis, between 10-30m.
	Specification of the grid system used.	MGA Zone 51 grid coordinate system is used
	Quality and adequacy of topographic control.	Kevron Geomatic Services flew and processed aerial photography and provided ortho images at 1:5000 scale over the Thunderbox deposit and environs.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is varied from 20mx20m to 40mx40m
	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 drilling is distributed and spaced such that geological and grade continuity can be established to estimate the mineral resource and ore reserve appropriately. The mineralisation is continuous over a 2km strike length, therefore the 80m x 80m exploration drill spacing effectively defines the continuity.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	RC precollar sampling was composted into 4m samples. Historic RAB drilling was sampled with 4m composite samples. Grade control RC drilling was carried out on 2m composite samples, while blast hole sampling was carried out on 2.5m composites.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The bulk of the drilling has been oriented to the east in order to provide the best intersection angles possible for the steeply west dipping orebody.
	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.	All drilling from surface has been drilled as close to perpendicular as possible. This has reduced the risk of introducing a sampling bias as far as possible.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted

Section 2: Reporting of Exploration Results

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.*	M36/504, M36/512 and M36/542 form part of the Thunderbox project and are in good standing. There are no native title claims over the Thunderbox deposit. A number of heritage surveys have been undertaken with Aboriginal groups with no sites of significance identified. In addition a detailed archaeological survey has been conducted with no sites of significance identified
	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.	The tenements are in good standing and the license to operate already exists.
Exploration done by other parties	A*cknowledgment and appraisal of exploration by other parties.*	Extensive nickel exploration was undertaken in the area during the 1960s and 1970s. Grassroots gold and PGE exploration was undertaken during and since the 1980s by BHP, Dominion, Dalrymple Resources and Forrestania Gold. Thunderbox was discovered in 1999.
Geology	*Deposit type, geological setting and style of* *mineralisation.*	Thunderbox is a mesothermal lode gold deposit located at the southern end of the Yandal greenstone belt in an area where several major shear zones converge and join with the Perseverance Fault. The shear zone dips at 30° to 60° WSW, with the exception in the vicinity of the mineralisation, where the shear is vertical to steeply dipping. Mineralisation is hosted by strongly deformed, silicified and carbonate altered albite-quartz porphyry in the hangingwall of the shear zone. The shear juxtaposes foliated basalts and intrusive porphyries in the hangingwall against sedimentary rocks in the footwall. The zone of shearing is over 200m wide. An ultramafic unit occurs within the shear, in the footwall of the deposit and is attenuated along the shear. The main gold related hydrothermal alteration assemblage comprises quartz-ankerite-arsenopyrite-pyrrhotite-galena and gold. This assemblage has been overprinted by a retrograde chlorite-epidote-white mica-biotite-quartz and pyrite assemblage. Syn-mineralisation veins have a continuum of vein textures ranging from laminated to pseudo-breccias.
Drillhole information	*A summary of all information material to the* *understanding of the exploration results including a* *tabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the*	A total of 2722 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. Exclusion of the drilling information will not detract from the reader's view of the report. All material data is periodically released on the ASX: 31/07/2018, 01/05/2018, 13/07/2017, 21/02/2017, 07/12/2016, 25/11/2015, 29/04/2015, 23/03/2015

Section 2: Reporting of Exploration Results

Criteria	JORC Code Explanation	Commentary
	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.*	All significant intercepts have been length weighted with a minimum Au grade of 0.5ppm. No high grade cut off has been 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.	Intercepts are aggregated with minimum width of 1m and maximum width of 3m for internal dilution.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
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.* *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').*	This announcement includes sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths. The geometry of the mineralisation is well known and true thickness can be calculated. Drilling intersects the mineralisation perpendicular and at an average intersection angle of 45 degrees.
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.*	Included in this release is an appropriately orientated longsection of the mineralisation, illustrating the centroids of the intercept point projected to a plane. Included also in this release are cross section views of the mineralisation which provides the visual perspective of the typical drilling angle.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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.*	Historic activities have included drilling to obtain samples for metallurgical test work, bulk density analyses and geotechnical analyses. A number of geophysical surveys including dipole-dipole IP, Gradient array IP and TEM were carried out over known mineralisation to determine effectiveness in delineating mineralisation/alteration. None were deemed effective. An environmental survey investigated the erosional characteristics of the soil, surface hydrology and groundwater and identified no issues. A partial leach soil sampling program carried out over the deposit was deemed effective in identifying anomalous gold values associated with the deposit. A detailed structural review of the mineralisation has been conducted by Model Earth
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Underground drilling is ongoing in the A zone area and future deep surface drilling is still being assessed under A and D Zones.

Otto Bore JORC Table 1

Section 1: Sampling Techniques and Data		
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.*	Sampling methods undertaken by Saracen at Otto Bore include reverse circulation (RC) and diamond (DD) drillholes Sampling methods undertaken at Otto Bore by previous owners have included aircore (AC), rotary air blast (RAB), RC and diamond drillholes (DD).
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. AC, RC, RAB, and DD core drilling is assumed to have been completed by previous holders to industry standard at that time (1988- 2012).
	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	RC chips are cone split and sampled into 1m intervals with total sample weights under 3kg. Diamond core is HQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g sub sample for analysis by FA/AAS. Limited information has been found for historic drilling so it is assumed all AC, RAB, RC and DD and sampling was carried out to industry standard at that time. More recent RAB and RC drilling has involved a total preparation sample protocol involving 4m composite or 1m samples from which a 50g charge is produced for aqua regia or fire assay digest and flame AAS finish.
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.).*	Drilling activities at Otto Bore have included 31 AC holes, 748 RAB holes, 141 RC holes (assumed standard 5 ¼" bit size) and 4 DD holes (HQ and unknown diameter). Limited historic diamond core hole was oriented by unknown methods. Saracen completed 96 RC holes and 6 geotechnical DD holes. The RC drilling was completed with a 5.5 inch diameter bit with a face sampling hammer. The rig was equipped with an external auxiliary booster. Diamond drilling was HQ sized and orientated using an ACT 11 core orientation tool. Historical drilling is assumed completed to industry standard at that time
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Recoveries for RC drillholes and precollars are recorded as a percentage based on a visual weight estimate.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Measures were taken to supress groundwater.
	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.	There is no known relationship between sample recovery and grade for RC drilling. Diamond drilling has high recoveries meaning loss of material is minimal. Any historical relationship is not known.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support*	Logging of RC chips and DD core records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	appropriate Mineral Resource estimation, mining studies and metallurgical studies. *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. Some historic diamond drilling has had limited geotechnical logging carried out. Core has been photographed in both dry and wet state. It is unknown if historic diamond core was photographed. It is unknown if any historic diamond core was photographed.
	The total length and percentage of the relevant intersections logged	All drillholes completed by Saracen have been logged in full.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. The sampling method for most historic drill core is unknown, a small amount is recorded as half core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	All exploration RC samples are cone split. Occasional wet samples are encountered. The sampling methods for much of the historic AC, RC and RAB drilling are unknown. More recent RC and RAB drilling has been riffle split or spear sampled. It is unknown if wet samples were encountered.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of RC chips and DD core adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. The sampling techniques for much of the historic AC, RAB, RC and DD drilling are unknown, best practice is assumed.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory Best practice is assumed at the time of historic AC, RAB, DD and RC sampling.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. It is unknown if duplicate sampling was performed on the majority of historic AC, RAB, RC and DD drilling. There is evidence of field duplicate sampling being conducted in more recent campaigns.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Analysis of data determined sample sizes were considered to be appropriate.
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.*	RC chip and DD core samples are analysed by an external laboratory using a 40g fire assay with AAS finish. This method is considered suitable for determining gold concentrations in rock and is a total digest method. Numerous assay techniques have been used in the history of the deposit, most commonly fire assay, fire assay with flame finish and aqua regia. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Other assay methods utilised for gold determination include BETA, atomic absorption spectrometry and unknown methods.
	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.	It is unknown if any instruments of this nature have been used at Otto Bore.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks)	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD. These are not identifiable to the laboratory.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel
	The use of twinned holes.	Specific drilling programs consisting of twinned holes are not apparent.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database
	Discuss any adjustment to assay data.	No adjustment to assay data appears to have been made
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using a hired Reflex EZ-gyro by the respective drilling companies on a regular basis, between 10-30m. The survey quality and control is unknown for the majority of historic drilling. More recent drilling has collar locations surveyed by unspecified GPS and DGPS equipment. Downhole survey methods recorded include Eastman single and multishot, gyro, inferred and unknown methods.
	Specification of the grid system used.	MGA Zone 51 grid coordinate system is used. Some historic data drilled on local grid systems has been converted to this grid system
	Quality and adequacy of topographic control.	Digital ortho-imagery of the area from Kevron Aerial Surveys was used in the early 2000s to establish topographic control.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	No exploration results reported in this release. The nominal drillhole spacing is 20 m (northing) by 20 m (easting) in the core of the deposit, and increases to the margins of the deposit.
	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 mineralised domains at Otto Bore have demonstrated sufficient continuity in both geological and grade continuity to support the definition of Mineral Resources, and the classifications applied under the 2012 JORC Code.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	No sample composting has been carried out Historic 1990s RAB and RC drilling was generally sampled on 3 - 4m composites with significant gold results being resampled in 1m intervals Some more recent RAB and RC drilling was composited into 4m samples with any assay >250ppb, or >500ppb in resource definition programs, resampled to 1m.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The deposit is drilled towards grid east at angles varying from -60^0 and -90^0 to intersect the mineralised zones at a close to perpendicular relationship for the bulk of the deposit.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to	All drilling from surface has been drilled as close to perpendicular as possible. This has reduced the risk of introducing a sampling bias as far as possible. No orientation based sampling bias has been identified at Otto Bore in the data at this point.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	have introduced a sampling bias, this should be assessed and reported if material.	
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted

Section 2: Reporting of Exploration Results		
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 Otto Bore resource is located on M36/421, M36/462, and M36/177. The mining leases have a 21 year life: M36/462 is held until 2022, M36/421 is held until 2023, and Mining Lease M36/177 is held until 2032. All are renewable for a further 21 years on a continuing basis. Mining Leases M36/421 and M36/462 are currently held by Saracen Metals Pty Limited (90%) and Black Mountain Gold NL (10%). The tenements are the subject of a purchase agreement with Saracen Metals Pty Limited whereby Saracen purchased a 90% share of the tenements from Norilsk Nickel Wildara Pty Ltd and Dalrymple Resources Pty Ltd. Mining Lease M36/462 is subject to a joint venture agreement (Agreement 127H/012 (129675)) between Oresearch NL, Dalrymple Resources NL, and Black Mountain Gold NL, as assigned to Saracen Metals Pty Limited at the time of purchase. Mining Lease M36/177 is held by Saracen Metals Pty Limited (67.8%) and Agnew Gold Mining Company Pty Ltd (32.2%). The tenement is the subject of a purchase agreement between Norilsk Nickel Wildara Pty Ltd and Saracen Metals Pty Limited whereby Saracen has purchased the 67.8% share from Norilsk. Mining Lease M36/177 is the subject of a joint venture agreement (Agreement 163H/945 (104991)) between Plutonic Operations Ltd and Black Mountain Gold NL, as assigned to Saracen Metals Pty Limited at the time of purchase. There are no caveats relating to the tenements. All production is subject to a Western Australian state government NSR royalty of 2.5%. Tenement M36/462 is subject to a Westpac Mortgage (499141). All tenements are subject to a pastoral compensation agreement between Saracen Metals Pty Ltd and Weebo Station. There are no native title claims over the tenements. There is a newly identified Aboriginal Heritage on M36/462 that is yet to be confirmed and registered by an Anthropologist.
	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.	No known impediment to obtaining a licence to operate exists and the remainder of the tenements are in good standing.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Gold exploration was conducted near Otto Bore in the 1950s following the discovery of the nearby Goanna Patch mineralisation. Nippon picked up the ground to the north of Otto Bore in the late 1980s and intersected anomalous zones at the Otto Bore prospect, but mineralisation was not deemed extensive enough. Otto Bore was discovered by Kismet in 1990 after they followed up regional RAB traverses at Goanna Patch and encountered mineralisation. It was deemed not large enough for consideration. Leader Resources picked up the

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		area and completed RAB drilling before also deeming the area not worthy of follow up. They did however mine the nearby Double A open cut between March 1990 and May 1991 and concentrated much of the exploration in this area. Forrestania and LionOre entered into a JV on the area in the early 2000s. RAB drilling following up anomalous values from historic drilling intersected mineralisation and was followed up with RC and DD drilling and the Otto Bore resource was defined. Norilsk acquired the deposit but conducted no further exploration in the Otto Bore region.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Otto Bore mineralised deposit is situated within a complex sequence of sheared basalts and felsic volcaniclastics. To north ultramafics occur as part of the stratigraphy. At depth mineralisation is typically associated with quartz veining and is more strongly developed at the rheological boundary between the sheared complex and the hangingwall and footwall units. The shear zone strikes roughly north-south and dips moderately (50-60degrees) to the west. NW trending structures cross cut the main shear and interplay positively with gold mineralisation. It is hypothesised that it's the interaction of these cross cutting structures and/or the folded network within the shear zone that defines the well delineated southerly plunging shoots. Mineralisation has been well tested along a strike length of 650m.
Drillhole information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	A total 253 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. All material data is periodically released on the ASX: 18/02/2019, 01/05/2018 Exclusion of the drilling information will not detract from the reader's view of the report.
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.*	All significant intercepts have been length weighted with a minimum Au grade of 0.5ppm. No high grade cut off has been 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.	Intercepts are aggregated with minimum width of 1m and maximum width of 3m for internal dilution.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
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.* *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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths.
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.*	No diagrams are referenced in this release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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.*	Geophysical surveys including aeromagnetics and gravity have been carried out by previous owners to highlight and interpret prospective structures in the project area.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Saracen is currently exploring proximal to the Otto Bore deposit and is working on an exploration program which will test the lateral and down dip extents of the Otto Bore mineral resource.

Atbara (Greater Luvironza) JORC Table 1

Section 1: Sampling Techniques and Data		
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.*	Sampling methods undertaken by Saracen at Greater Luvironza has consisted of reverse circulation (RC) drilling. Historic methods conducted since 1993 have included aircore (AC), rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC chips provide high quality representative samples for analysis. RC, RAB, AC and DD core drilling was completed by previous holders to industry standard at that time (1993- 2002).
	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*	RC chips are cone split and sampled into 4m composite intervals and 1m intervals with total sample weights under 3kg Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Historical AC, RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia, B/ETA and unspecified methods.
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.).*	The Greater Luvironza area was initially sampled by 85 AC holes, 170 RAB holes, 224 RC holes (assumed standard 5 ¼ ''bit size) and 22 surface diamond HQ core and unknown diameter holes. Saracen has completed 10 surface RC drill holes, 5 surface diamond holes Diamond holes were oriented using an Ezy-mark tool. Some historic surface diamond drill core appears to have been oriented by unknown methods.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >90%. RC sampling recoveries are recorded as a percentage based on a visual weight estimate; no historic recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. Daily rig inspections are carried out to check splitter condition, general site and address general issues. The sample bags weight versus bulk reject weight is compared to ensure adequate and even sample recovery. Historical AC, RAB, RC and diamond drilling to industry standard at that time.
	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.	Diamond drilling has high recoveries meaning loss of material is minimal. There is no known relationship between sample recovery and grade for RC drilling. Any historical relationship is not known.
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.* *Whether logging is qualitative or quantitative in nature.* *Core (or costean, channel, etc.) photography.*	Logging of diamond drill core and RC chips records lithology, mineralogy, texture, mineralisation, weathering, alteration, veining and other features. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
	The total length and percentage of the relevant intersections logged	All diamond drillholes and exploration RC holes are logged in full. Every drill line is logged in grade control programs. Historical logging is approximately 95% complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Samples are always collected from the same side. Historic diamond drilling has been half core sampled.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	All exploration and GC RC samples are cone or riffle split. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. Historic AC, RAB and RC drilling was sampled using spear, grab, riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core and RC chips adhere to industry best practice. It is conducted by a commercial laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	Duplicate sampling is carried out at a rate of 1:10 for exploration drilling and 1:20 for GC drilling and is sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered to be appropriate.
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.*	RC chip samples, grade control chip samples and diamond core are analysed by external laboratories using a 40g or 50g fire assay with AAS finish. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. Historic sampling includes fire assay, aqua regia, B/ETA and unknown methods.
	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 geophysical tools have been utilised for reporting gold mineralisation at Whirling Dervish.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration RC and DD, and 1:40 for GC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision. Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Greater Luvironza
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Downhole surveys are carried out using the Axis Champ north seeking Gyroscopic continuous inrod survey instrument taking readings every 18m (diamond drilling) or 30m (RC drilling) down hole as drilling progresses, with a continuous survey conducted at the end of the hole taking a reading every 1m metre. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	MGA_GDA94 zone 51 is used
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for early stage exploration drilling is 80m x 80m. Later stage exploration drilling is 40m x 40m
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	RC drillholes were composited into 4m samples, with mineralised areas being resampled to 1m intervals. Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The majority of drillholes are positioned to achieve optimum intersection angles to the ore zone as are practicable.
	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 significant sampling bias is thought to occur due to orientation of drilling in regards to mineralised structures.
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures.

Section 2: Reporting of Exploration Results		
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 Greater Luvironza area is located on M31/210, M31/219, and M31/220 The tenements are held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Leases M31/219 and M31/220 have a 21 year life (held until 2020) and are renewable for a further 21 years on a continuing basis. Mining Lease M31/210 has a 21 year life (held until 2023) and is renewable for a further 21 years on a continuing basis. Mining Lease M31/210 is subject to two third party royalties and associated caveats (Caveat 62H/067 and Caveat 513935) Mining Lease M31/219 is subject to two third party royalties and one caveat (Caveat 63H/067). Mining Lease M31/220 is subject to two third party royalties and one caveat (Caveat 64H/067). Mining Lease M31/220 is subject to a bank mortgage (Mortgage 499142). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Leases M31/210 and M31/219 are subject to the Gindalbie Pastoral Compensation Agreement. Mining Lease M31/220 is subject to the Pinjin and Gindalbie Pastoral Compensation Agreements. Mining Leases M31/210, M31/220, and M31/219 are the subject of the Maduwongga native title claim (WC2017/001). The Mining Rehabilitation Fund applies to the tenements.
	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.	The tenements are in good standing and the licence to operate already exists.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	The Carosue Dam project area in which the Greater Luvironza area is located has been subjected to extensive gold exploration by numerous companies since 1991. Airborne geophysics conducted by Aberfoyle Resources in 1997 highlighted numerous targets in the project area with subsequent AC, RAB and RC drilling intersecting mineralisation.. Oriole Resources obtained the project in 1998 and, through wholly owned subsidiary company PacMin, completed closely spaced RC drilling to develop the Luvironza resource through to reserve status. Sons of Gwalia carried out minor drilling before their collapse and takeover of the project by St Barbara.
Geology	*Deposit type, geological setting and style of mineralisation.*	The Greater Luvironza area is situated along the Kilkenny-Yilgangi fault zone on the boundary of the Steeple Hill and Mulgabbie domains. The lithology comprises primarily intermediate felsic volcaniclastic sandstones, intermediate tuffs and intermediate porphyry units intruded by granites of varying composition, with stratigraphy dipping generally to the east at approx. 60 degrees. Mineralization has a combined lithological and structurally control dipping parallel to the stratigraphy. Mineralization is continuous along strike in the footwall but is very discontinuous and patchy in the hanging wall structures and overall controlled by the general NW trending ductile faulting and is characterized by weak Hematite banding on the margins to intense hematite-silica alteration hosted in breccia zones adjacent to the faulting with high grade cores typically sericite-silica breccia. Pyrite is the dominant sulphide.
Drillhole information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	A total of 868 holes have been used in the mineral resource and are deemed to be material. It is not practical to summarise all of the holes here in this release. Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view of the report.

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
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.*	All significant intercepts have been length weighted with a minimum Au grade of 1ppm. No high grade cut off has been 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.	Intercepts are aggregated with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in the broader mineralised zone, the higher grade interval is reported also.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
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. 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').*	Previous announcements included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths.
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.*	No Diagrams are referenced in this release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from previous campaigns have been reported, irrespective of success or not.
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 substantive data acquisition has been completed in recent times.
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).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Extensional exploration for the Greater Luvironza area at this time is under review. Recent results are likely to be followed up with urgency.

Section 1: Sampling Techniques and Data		
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.*	Sampling methods undertaken by Saracen at Deep South have included reverse circulation drillholes (RC), aircore drilling (AC), surface and underground diamond drillholes (DD), underground face chip sampling and RC grade control drilling within the pit. Historic sampling methods conducted since 1983 have included rotary air blast (RAB), reverse circulation and diamond drillholes.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Sampling for diamond, face chip and RC drilling is carried out as specified within Saracen sampling and QAQC procedures as per industry standard. RC and UG face chips and diamond core provide high quality representative samples for analysis. RC, RAB and DD core drilling was completed by previous holders to industry standard at that time (1983- 2004).
	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*	RC chips are cone or riffle split and sampled into 1m intervals with total sample weights under 3kg Diamond core is NQ sized, sampled to 1m intervals or geological boundaries where necessary and cut into half core to give sample weights under 3 kg. UG faces are chip sampled to geological intervals (0.2 to 1m). Samples are selected to weigh less than 3 kg to ensure total sample inclusion at the pulverisation stage. Saracen core and chip samples are crushed, dried and pulverised to a nominal 90% passing 75µm to produce a 40g or 50 g sub sample for analysis by FA/AAS. Some grade control RC chips were analysed in the Saracen on site laboratory using a PAL (pulverise and leach) method. Historical RAB, RC and diamond sampling was carried out to industry standard at that time. Analysis methods include fire assay, aqua regia, atomic absorption spectroscopy and unspecified methods.
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.).*	The deposit was initially sampled by 114 RAB holes, 211 RC holes (assumed standard 5 ¼ "bit size) and 29 surface HQ and unknown diameter diamond core holes. Saracen has completed 15 surface RC precollars with NQ diamond tail drill holes (precollars averaging 185m, diamond tails averaging 140m) , 3 geotechnical surface diamond NQ drillholes, 57 RC holes from surface and 107 grade control RC holes within the pit. Underground sampling activities have included 646 NQ diamond drillholes and 1596 faces. Exploration of the broader Deep South area has included 312AC holes. Diamond tails were oriented using an Ezi-mark tool. A limited amount of historic surface diamond drill core appears to have been oriented by unknown methods.
Drill Sample Recovery	*Method of recording and assessing core and chip sample recoveries and results assessed*	RC sampling recoveries are recorded in the database as a percentage based on a visual weight estimate; limited historic recoveries have been recorded. Diamond core recovery percentages calculated from measured core versus drilled intervals are logged and recorded in the database. Recoveries average >98%. Limited historic diamond recoveries have been recorded.
	Measures taken to maximise sample recovery and ensure representative nature of the samples	During AC and RC drilling daily rig inspections are carried out to check splitter condition, general site and address general issues. Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against depth given on the core blocks. UG faces are sampled left to right across the face allowing a representative sample to be taken due to the vertical nature of the orebody. During GC campaigns the sample bags weight versus bulk reject weight are compared to ensure adequate and even sample recovery. Historical RAB, RC and diamond drilling to industry standard at that time.
	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.	There is no known relationship between sample recovery and grade for RC or AC drilling. Diamond drilling has high recoveries meaning loss of material is minimal. Any historical relationship is not known.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
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.* *Whether logging is qualitative or quantitative in nature.* *Core (or costean, channel, etc) photography.*	Logging of RC and AC chips and diamond drill core records lithology, mineralogy, texture, mineralisation, weathering, alteration and veining. Geotechnical and structural logging is carried out on all diamond holes to record recovery, RQD, defect number, type, fill material, shape and roughness and alpha and beta angles. Chips from all RC holes (exploration and GC) are stored in chip trays for future reference while remaining core is stored in core trays and archived on site. All faces are photographed and mapped. Core is photographed in both dry and wet state. Qualitative and quantitative logging of historic data varies in its completeness.
	The total length and percentage of the relevant intersections logged	All AC, RC and diamond drillholes and grade control holes are logged in full. Historical logging is complete.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	All drill core is cut in half onsite using an automatic core saw. Some grade control diamond holes have been full core sampled. Samples are always collected from the same side. Some historic drillcore was half core sampled, or sampled via unknown methods.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	All exploration and grade control RC samples are cone or riffle split. AC drillholes are spear sampled. Occasional wet samples are encountered; increased air capacity is routinely used to aid in keeping the sample dry when water is encountered. UG faces are chip sampled using a hammer. Historic RAB and RC drilling was sampled using riffle and unknown methods.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation of diamond core, UG face chips and RC chips adhere to industry best practice. It is conducted by a commercial laboratory or onsite laboratory and involves oven drying, coarse crushing then total grinding to a size of 90% passing 75 microns. Best practice is assumed at the time of historic sampling.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	All subsampling activities are carried out by commercial laboratory or onsite laboratory and are considered to be satisfactory. Sampling by previous holders assumed to be industry standard at the time.
	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.	RC field duplicate samples are carried out at a rate of 1:20 and are sampled directly from the on-board splitter on the rig. These are submitted for the same assay process as the original samples and the laboratory are unaware of such submissions. Sampling by previous holders assumed to be industry standard at the time.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes of 3kg are considered to be appropriate given the grain size (90% passing 75 microns) of the material sampled.
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.*	RC and UG chip samples and diamond core are analysed by external laboratories using a 50g fire assay with AAS finish. AC samples are analysed using a 25g aqua regia digest. These methods are considered suitable for determining gold concentrations in rock and are total digest methods. GC samples were analysed in the Saracen onsite laboratory using a pulverise and leach method. This method is a partial digest. Historic sampling includes fire assay, aqua regia, atomic absorption spectroscopy and unspecified methods.
	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 geophysical tools have been utilised for reporting gold mineralisation.
	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.	Certified reference material (standards and blanks) with a wide range of values are inserted into every drillhole at a rate of 1:25 for exploration AC, RC and DD, and 1:40 for GC drilling. These are not identifiable to the laboratory. QAQC data returned are checked against pass/fail limits with the SQL database and are passed or failed on import. A report is generated and reviewed by the geologist as necessary upon failure to determine further action. QAQC data is reported monthly. Sample preparation checks for fineness are carried out to ensure a grindsize of 90% passing 75 microns. The laboratory performs a number of internal processes including standards, blanks, repeats and checks. QAQC data analysis demonstrates sufficient accuracy and precision.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
		Industry best practice is assumed for previous holders.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intercepts are verified by the Geology Manager and corporate personnel.
	The use of twinned holes.	No specific twinned holes have been drilled at Deep South but grade control drilling has confirmed the width and grade of previous exploration drilling.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols	Primary data is collated in a set of excel templates utilising lookup codes. This data is forwarded to the Database Administrator for entry into a secure acQuire database with inbuilt validation functions. Data from previous owners was taken from a database compilation and validated as much as practicable before entry into the Saracen acQuire database.
	Discuss any adjustment to assay data.	No adjustments have been made to assay data. First gold assay is utilised for resource estimation.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Exploration drillholes are located using a Leica 1200 GPS with an accuracy of +/- 10mm. Drillhole collars within the pit and immediate surrounds are picked up by company surveyors using a Trimble R8 GNSS (GPS) with an expected accuracy of +/-8mm. All underground drillhole collars are picked up by company surveyors using a Leica TS15i (total station) with an expected accuracy of +/-2mm. Underground faces are located using a Leica D5 disto with and accuracy of +/- 1mm from a known survey point. Downhole surveys are carried out using the DeviFlex RAPID continuous inrod survey instrument taking readings every 5 seconds, In and Out runs and reported in 3m intervals, survey accuracy +-3:1000. A number of drillholes have also been gyroscopically surveyed. Previous holders' survey accuracy and quality is unknown
	Specification of the grid system used.	A local grid system (Safari Bore) is used at Deep South. The two point conversion to MGA_GDA94 zone 51 is: SBEast SBNorth RL MGAEast MGANorth RL Point 1 51000 34000 0 451137.753 6734157.921 0 Point 2 51000 30000 0 451137.896 6730157.896 0 Historic data is converted to the Safari Bore local grid upon export from the database.
	Quality and adequacy of topographic control.	Topographic control originally used site based survey pickups in addition to Kevron aerial photogrammetric surveys with +/- 5m resolution. Pre mining, new and more detailed topography has since been captured and will be used in future updates and for subsequent planning purposes.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	The nominal spacing for drilling is 20m x 40m and 40m x 40m
	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.	Data spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for JORC classifications applied.
Orientation of data in relation to geological structure	*Whether sample compositing has been applied.*	AC drilling is sampled in 4m composites, no other sample compositing has been utilised Some historic RAB and RC sampling was composited into 3-4m samples with areas of interest re-sampled to 1m intervals. It is unknown at what threshold this occurred.
	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	The majority of drillholes are positioned to achieve optimum intersection angles to the ore zone as are practicable.
	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 significant sampling bias has been recognised due to orientation of drilling in regards to mineralised structures.

Section 1: Sampling Techniques and Data		
Criteria	**JORC Code Explanation**	**Commentary**
Sample security	*The measures taken to ensure sample security.*	Samples are prepared on site under supervision of Saracen geological staff. Samples are selected, bagged into tied numbered calico bags then grouped into secured cages and collected by the laboratory personnel. Sample submissions are documented via laboratory tracking systems and assays are returned via email
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	An internal review of companywide sampling methodologies was conducted to create the current sampling and QAQC procedures. No external audits or reviews have been conducted.

Section 2: Reporting of Exploration Results		
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 Deep South pit is located on M39/740. The tenement is held 100% by Saracen Gold Mines Pty Ltd, a wholly owned subsidiary of Saracen Mineral Holdings Limited. Mining Lease M39/740 has a 21 year life (held until 2024) and is renewable for a further 21 years on a continuing basis. Mining Lease M39/740 is subject to one royalty agreement, one caveat (151H/067) and a bank mortgage (499142). All production is subject to a Western Australian state government NSR royalty of 2.5%. Mining Lease M39/740 is subject to the Edjudina Pastoral Compensation Agreement. There are no registered Aboriginal Heritage sites within Mining Lease M39/740. The Mining Rehabilitation Fund applies to Mining Lease 39/740.
	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.	The tenement is in good standing and the licence to operate already exists
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Exploration in the vicinity of Deep South commenced in the 1980's with drilling around the historic Deep Well workings 500m north of Deep South, as well as regional RC drilling carried out by Western Mining Corporation. Initial auger sampling carried out over Deep South by Pancontinental Mining in 1994 failed to detect mineralisation due to the transported material overlying the deposit. Wide spaced east angled RAB drilling carried out by Goldfields in 1999 intersected mineralisation, but results were not repeated in further drilling and the project area was sold to Sons of Gwalia. Sons of Gwalia completed extensive RC and diamond drilling to define the Deep South resource, with mining operations undertaken in 2004 before their collapse and takeover by St Barbara.
Geology	*Deposit type, geological setting and style of mineralisation.*	Deep South lies on the eastern margin of the Norseman – Wiluna greenstone belt. This belt is differentiated into numerous structural-stratigraphic domains separated by major regional structures, with Deep South located within the narrow NNW trending Linden Domain. The lithology comprises metasedimentary and felsic volcaniclastic rocks with an ultramafic and high magnesium basalt layer. Mineralisation occurs in two loads concordant to geology, the Butler and Scarlett lodes, and is confined between layered metasedimentary and felsic volcaniclastic units on both the hangingwall and footwall. The two lodes are separated by a high magnesium basalt and an ultramafic unit. The Butler lode is located in the hangingwall and is strongly silica and pyrrhotite-pyrite altered, and well laminated (appearing like a BIF within the oxidise portion). The contrasting physical properties of this unit to the surrounding unit have created fluid pathways and traps, as well as the high iron content of the unit providing a chemical trap, for gold deposition The Scarlett lode is strongly weathered in the upper oxide portion to a gossanous material comprising hematite, goethite and quartz fragments. Weathering at Deep South has been preferential along Scarlett lode due to its high carbonate content. Where fresh, the lode is a fine grained banded carbonate unit with variable pyrrhotite, pyrite and magnetite. It is weakly foliated in line with the regional foliation.
Drillhole 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:*	All material data is periodically released on the ASX:

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
	• *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation* • *above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	15/02/2018, 27/11/2017, 26/09/2017, 01/05/2017, 21/02/2017, 17/12/2016, 07/09/2016, 11/05/2016, 23/02/2016, 23/07/2013, 10/10/2012, 31/07/2012, 03/06/2011, 29/07/2010 Future drill hole data will be periodically released or when a results materially change the economic value of the project. Exclusion of the drilling information will not detract from the reader's view of the report.
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.*	All significant intercepts have been length weighted with a minimum Au grade of 1ppm, or 20ppb for AC drilling No high grade cut off has been 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.	Intercepts are aggregated with minimum width of 1m and maximum width of 3m for internal dilution. Where stand out higher grade zone exist with in the broader mineralised zone, the higher grade interval is reported also.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	There are no metal equivalents reported in this release.
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.* *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').*	Previous announcement included sufficient detail to clearly illustrate the geometry of the mineralisation and the recent drilling. All results are reported as downhole lengths. This remains consistent with other announcements.
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.*	All significant exploration results released by Saracen are accompanied by the appropriate diagrams and maps at the time of the release.
Balanced Reporting	*Where comprehensive reporting of all Exploration Results are not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	All results from the recent campaign have been reported, irrespective of success or not.
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.*	A small geochemical program was undertaken in 2013 to determine the key features associated with mineralisation. The program gave some insight into the local characteristics of the Scarlett and Butler lodes. More work is needed to fully appreciate the geochemical signature associated with the mineralisation. A detailed gravity survey was recently completed at Deep South on a 400m x 100m grid to assist in the interpretation of the basement geology. The data is currently being processed and interpreted. Saracen has recently completed a biogeochemical sampling program at Deep South involving the sampling of new leaf growth on established *Acacia* trees on a 100m x 800m spacing. Samples were collected from trees of a consistent species and height. The

Section 2: Reporting of Exploration Results		
Criteria	**JORC Code Explanation**	**Commentary**
		biogeochemical program was an orientation survey only and results will not be used in any calculation of mineralisation. The leaves were washed, dried and pulverised followed by an aqua regia digest for multielement determination.
Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive*	Surface and underground drilling will continue, and regional aircore program will continue across the Mt Celia district.