

# 16 AUGUST 2018

# Increase to the Owendale Mineral Resource

### **Key highlights**

- 13% increase in the higher-grade 600 ppm cut-off scandium Mineral Resource
- 8% increase in the 300 ppm cut-off scandium Mineral Resource

Platina Resources Limited ("Platina", ASX: PGM) is pleased to announce an updated scandium Mineral Resource estimate at its 100% owned Owendale project, outlined in Table 1 and Table 2.

The new Mineral Resource estimate positions Owendale as one of the largest and highest-grade scandium projects in the western world.

The positive results follow a small resource drilling program in 2018 and some targeted reassaying over two new focus areas for the current Feasibility Study. These new resource areas are expected to be converted into new Ore Reserves with mine planning and feasibility work in progress.

Table 1: Owendale Mineral Resource at a 600 ppm Scandium cut-off (August 2018)

Status	Tonnage Mt	Scandium ppm	Platinum g/t	Nickel %	Cobalt %	Scandia t <sup>*</sup>	Platinum koz	Nickel t	Cobalt T
Measured	0.74	685	0.39	0.17	0.16	800	9	1 300	1 200
Indicated	0.75	670	0.32	0.14	0.11	800	8	1 100	800
Inferred	0.26	645	0.22	0.10	0.07	300	2	300	200
Total	1.76	675	0.34	0.15	0.12	1 800	19	2 600	2 200

<sup>\*</sup>Scandium is typically sold as Scandia or Scandium Oxide ( $Sc_2O_3$ ) product and is calculated from scandium metal content and a 1.53 factor to convert to the oxide form

Table 2: Owendale Mineral Resource at a 300 ppm Scandium cut-off (August 2018)

	Tonnage	Scandium	Platinum	Nickel	Cobalt	Scandia	Platinum	Nickel	Cobalt
Status	Mt	ppm	g/t	%	%	t*	koz	t	T
Measured	7.8	435	0.42	0.13	0.07	5 200	105	9 900	5 400
Indicated	12.5	410	0.26	0.11	0.06	7 800	106	13 400	8 100
Inferred	15.3	380	0.22	0.08	0.05	8 900	106	12 400	7 000
Total	35.6	405	0.28	0.10	0.06	22 000	317	35 700	20 500

Platina Managing Director, Corey Nolan, commented: "Owendale is now positioned as one of the highest-grade scandium resources projects in the western world with the potential to also derive by-product revenue including, nickel-cobalt intermediate products and high purity alumina. The focus is now on completing the feasibility study and the commencement of off-take marketing to facilitate project financing and development when permits are approved".

#### Main changes from the February 2018 Mineral Resource announcement

The new Mineral Resource estimate incorporates data from the 1,151 m drilling program from 33 holes completed in June 2018 and the results from a re-assaying program of previous drilling. The intention of the June 2018 drilling program was to upgrade the Mineral Resource in two additional mining areas for the current Feasibility Study and for mine permitting. These areas are adjacent to Fifield Road.

The updated Mineral Resource estimate represents a 6% increase in the size of the scandium Mineral Resource to 35.6 Mt at a 300 ppm cut-off level (up from 33.7 Mt), and a 2% increase in scandium grade to 405 ppm (up from 395 ppm).

The reassaying of the available samples from the two focus areas at Box Cowal and North Cincinnati resulted in 20% higher scandium grade from the XRF analysis compared to the previous ICP analyses. This has had a significant impact on the quantum of higher grade scandium Mineral Resource in both areas, which is supported with high grades from Platina 2018 infill drilling (announced 2 August 2018).

Consequently, the Mineral Resource estimate at the higher 600 ppm scandium cut-off has been increased significantly with a 15% increase in the size of the scandium Mineral Resource to 1.76 Mt (up from 1.54 Mt), at a same scandium grade of 675 ppm, after rounding.

In addition, further re-assaying of historic Helix drilling has also added to the overall resource, particularly in the southern areas where Platina has completed less drilling. The updated Mineral Resource incorporates more historic Helix assaying to improve the laterite interpretation that has resulted in geology interpretation changes in more sparsely drilled areas classified as Inferred.

Some minor modifications to the geological domaining has trimmed some lower grade dilution where magnesite is present and the material is unlikely to ever be considered economic due to higher acid consumption.

The August 2018 Mineral Resource estimate has been successful in proving up the two additional focus areas as more robust options than originally envisaged. For the two areas the additional drilling has increased the Mineral Resource classification to Measured and Indicated. It is now planned these areas will be added to the mining Ore Reserve and mining schedule for Feasibility Study and included for permitting.

#### **Cobalt Mineral Resource**

The cobalt Mineral Resource at Owendale now stands at 16.9 Mt @ 0.12% Co at a cut-off grade of 0.08% Co (Table 3). This compares to the August 2017 estimate of 17.6 Mt @ 0.12% Co at a cut-off grade of 0.08% Co. The slight decrease is a function of additional re-assayed drilling, inclusion of more historic Helix drilling results and a more conservative interpretation approach.

The Company will assess the potential economics of cobalt by-product credits as part of the current Owendale feasibility study.

Tonnage Scandium Platinum Cobalt Nickel Cobalt Scandia **Platinum** Nickel **Status** Mt % % t\* koz t Т ppm g/t Measured 4.0 380 0.49 0.29 0.14 2 3 4 0 63 11 610 5 690 Indicated 6.2 350 0.26 0.20 0.12 3 340 51 12 380 7 440 Inferred 6.7 245 0.21 0.21 0.11 2 5 2 0 45 13 910 7 2 7 0 Total 16.9 315 0.29 0.22 0.12 8 210 160 37 900 20 410

Table 3: Owendale Mineral Resource at a 0.08% Cobalt cut-off (August 2018)

<sup>\*</sup>Scandium is typically sold as Scandia or Scandium Oxide ( $Sc_2O_3$ ) product and is calculated from scandium metal content and a 1.53 factor to convert to the oxide form

#### Scandium benchmarking

The August 2018 resource update for Owendale consolidates its position as a leading scandium development opportunity in Australia (refer to Figure 1).

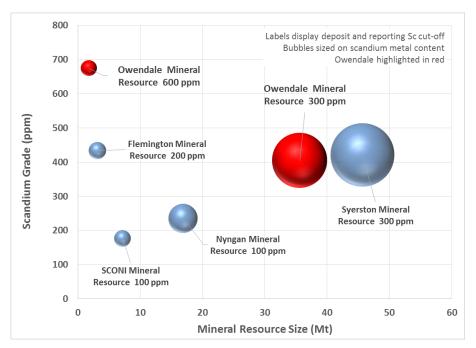


Figure 1: Australian scandium laterite Mineral Resource and Ore Reserve comparison

Source:

Flemington and SCONI Scoping Study announcement ASX:AUZ dated 31 March 2017

Nyngan NI43-101 report dated 15 April 2016 – available at <a href="www.sedar.com">www.sedar.com</a> under Scandium International Mining Corp

Syerston Mineral Resource announcement ASX: CLQ dated 9 October 2017

#### **August 2018 Mineral Resource Information**

The August 2018 Owendale Mineral Resource update was conducted by ResEval Pty Ltd and includes the June 2018 aircore drilling program which targeted two small focus areas for inclusion in current planning and permitting. This new assay information includes 33 new drill holes and reassay results for 11 previous Platina percussion drill holes (refer to ASX announcement dated 2 August 2018).

In addition selective re-assaying of historic Helix drilling has continued and either updated or added scandium information from 137 historic Helix drill holes.

Refinements to the geological modelling have allowed a greater proportion of historic Helix drilling to also be included in the geology interpretation and grade estimates in area of otherwise widespread information.

The August 2018 Mineral Resource estimate is consistent with the methodology adopted for the previous Owendale Mineral Resource estimate (refer to ASX announcement dated 9 August 2017).

Appendix A and the following sections contain additional technical details relevant to the JORC Mineral Resource statement.

#### Location and tenure

The Owendale project is located in central New South Wales, approximately 75 km northwest of Parkes, and 45 km northeast of Condobolin (Figure 2). Owendale is also located 12 km north of Fifield Deep Lead where platinum was mined in the past.

The Owendale deposit falls within Exploration Licence EL7644. This licence is 100% owned by Platina and was granted on the 2 December 2010. Renewal has been offered for a further term of 5 years expiring in 2020 (Figure 2). The licence measures approximately 9.3 km north-south and 7.8 km east-west.



Figure 2: Owendale project location

#### Geology

Owendale is a Devonian age Alaskan-style intrusive complex that can be divided into mafic-felsic series (monzonite) and an ultramafic series (Figure 3). The ultramafic series comprises dunite-wehrlite, olivine-pyroxenites and olivine-clinopyroxenite rocks. The relative abundance of nickel, cobalt, scandium and platinum in these ultramafic rocks has been enriched to higher grades in the laterite profile due to either a residual or supergene enrichment processes. The variations in element abundance in the original ultramafic basement rock affect the enriched concentrations in the laterite along with the development of the laterite and any erosion of the laterite profile.

The types of laterite-hosted mineralisation identified thus far show strong correlations with certain lithologies, including platinum-copper mineralisation overlying dunite-wehrlite rocks with variable cobalt, nickel and gold content; cobalt-nickel mineralisation with platinum credits associated with the underlying olivine pyroxenites; and elevated chrome and scandium has been noted where dunite-wehrlite lithologies predominate but mainly occur with clinopyroxenite lithologies.

The lateralisation process developed in the past over a long period of leaching which removed some elements and concentrated others by residual processes. Movement of water can also result in dissolution and precipitation of some elements by supergene processes. The Owendale area is relatively flat and supergene enrichment appears to only result in vertical enrichment within the profile as there is no evidence of significant lateral movement or enrichment. The lateritisation process results in a thin laterally extensive zone depicted in the section in Figure 3.

Much of the Owendale Mineral Resource is covered by alluvial material comprised of quartz gravels and sands. This develops into a significant alluvial channel to the north-west of Owendale North prospect, which is up to 40m in depth.

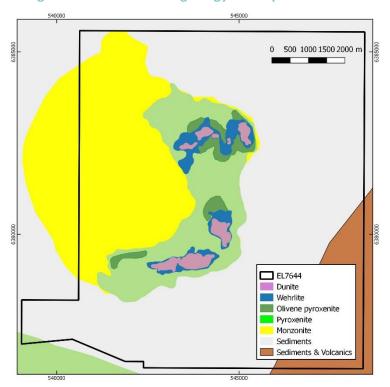


Figure 3: Owendale local geology and exploration lease

### **Drilling and sampling**

Costeans and geophysical surveys were undertaken on the prospectively enriched region during exploration and although this data was used for geological interpretation, the Mineral Resource definition relies on solely drilling results.

Exploration has principally been conducted over two phases including:

- Historical exploration completed by Helix Resources (ASX:HLX) and various joint venture partners from 1986 to 2006 with the completion of 17 diamond, 78 Reverse Circulation (RC) and 966 Rotary Air Blast (RAB) drill holes
- More recent exploration completed by Platina from 2007, with most drilling and sampling having been conducted from 2011 to 2013 and in 2017 to 2018 with the completion of 21 diamond, 346 RC and 167 Aircore drill holes

The majority of the historical exploration drilling, which includes over 1,000 drill holes, was only assayed for platinum and inconsistently for nickel and cobalt. Many of these holes have been effectively redrilled or are collared outside the prospective laterite area. A selection of holes were used to assist in the geological modelling and estimation of the laterite where their inclusion added valuable interpretable information. Of these some drill holes selectively re-assayed from 2016 to 2018 and provide scandium results. Table 4 provides the breakdown drilling used and in summary includes:

- 512 Platina drill holes with modern scandium, nickel and cobalt assays
- 234 historic Helix drill holes with selective reassays by XRF
- 276 additional historic Helix holes with geology and limited Pt, Ni Co, Cu analyses

Approximately 25% of drilling completed by Platina comprises deep bedrock drilling focused on primary platinum and sulphide mineralisation targets. Table 4, indicates the drilling specifically applicable to the laterite Mineral Resource. Samples located more than 15m below the lowermost laterite horizon and well into bedrock are excluded from this summary. The table identifies the assaying that postdates 2010 and has scandium analyses available.

Table 4: Owendale drill hole summary where scandium assays available (excluding bedrock)

Company	Year	Drill type	Hole name range	Drill holes	Total depth (m)	Assayed Intervals (m)*	Scandium intervals (m)*
Helix	1986 - 1994	DDH	FKD006 - FKD014	4	1,394	154	0
Not reassayed	1988 - 1998	RAB	FIR002 - FIR949	249	10,277	9,049	0
	1989 - 1999	RC	FRC0026 - FRC0075	23	1,925	1,003	0
Helix	1988 - 1995	DDH	FKD012 - FKD016	3	1,413	143	16
Reassayed	1988 - 1990	RAB	FIR001 - FIR527	199	7,309	6,408	3,276
	1989 - 1989	RC	FRC0004 - FRC0046	32	4,607	1,150	718
Platina	2017 - 2018	Aircore	FKD17_449 - FKD18_624	166	4,614	4,462	4,233
	2010 - 2014	DDH	FKD10_109 - OWDD004	14	2,529	334	275
	2011 - 2018	RC	FKD11_110 - FKD18_621	332	14,402	12,814	12,626
Total				1,022	48,470	35,517	21,144

<sup>\*</sup> Excludes deeper bedrock samples >15m below the laterite

The location of the drilling completed at Owendale is indicated in Figure 4 and Figure 5.

Exploration has also included some diamond drilling that targeted platinum and sulphide mineralisation potential in the ultramafic bedrock. Laterite targeted diamond drilling was largely used for bulk density, metallurgical and geotechnical sampling.

Helix undertook widespread regional drilling, targeting the platinum enriched laterite profile, as well as definition and regional sampling of the local bedrock material. Drilling undertaken was principally RAB with some RC on mostly 2 m samples, often composited to 4 m with selective sampling for platinum. After recognising some enriched nickel-cobalt laterite mineralisation re-assaying for Ni and Co was undertaken along with definition drilling of target platinum and nickel-cobalt zones. Limited quality assurance and quality control (QAQC) information is available but the information that is indicates that some early drilling may understate platinum mineralisation. To enhance the platinum, nickel, cobalt and copper estimates Helix drilling has been included in the Mineral Resource estimates where not redrilled by Platina, the laterite geological domains were interpretable from logs and/or geochemistry and inclusion was deemed to improve the volume model. In about half the cases the Helix drilling is selectively reassayed by XRF in 2016 to 2018.

Platina drilling has predominantly involved RC and Aircore drilling regularly sampled in 1m intervals. RC drilling utilised a face sampling hammer bit with nominal hole diameter of 114 mm (2011 to 2013), and Aircore drilling a bit diameter of 113 mm (2017) or 95 mm (2018). One metre samples were collected directly from the cyclone and subsampled with a 3 or 2 tier Jones Riffle splitter. Exploration completed through 2010-2014 included diamond core drilling which was half or quarter core sampled in 1 m intervals. Small diamond core programs, including the campaign drilled in 2017, were not regularly sampled and are excluded from the Mineral Resource estimate.

Diamond core recovery exceeds 90% and percussion recovery is estimated based on weighed sample masses and an assumed conservative density is calculated as >80% for RC (2011 to 2013) and 75% for Aircore (2017) and 72% for Aircore (2018).

Platina sample preparation completed from 2008 through to mid-2013 was undertaken at SGS West Wyalong and included a dry, crush and pulverize to 75  $\mu$ m. Samples greater than 3 kg were put through a rotary split stage to reduce the pulverization size to 3 kg. Sample weight was recorded before and after drying to define sample moisture content.

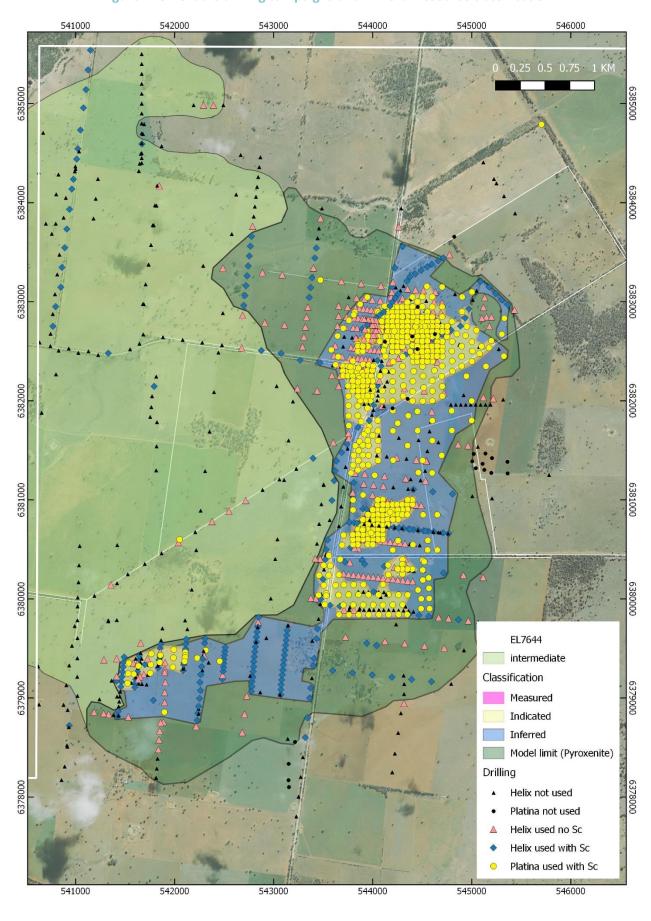


Figure 4. Owendale drilling campaigns and Mineral Resource classification

EL7644 Intermediate intrusive Classification Measured 6381000 Indicated Inferred Model limit (Pyroxenite) Drilling Helix not used Platina not used Helix used no Sc Helix used with Sc Platina used with Sc 544000 545000

Figure 5. Owendale drilling campaigns and Mineral Resource classification – focus areas

Sample preparation undertaken after mid 2013 was completed at ALS in Orange or Brisbane using a similar commercial sample preparation process.

Initial analysis undertaken by Platina was by SGS in Townsville and Perth until for the last program in 2013 that was undertaken by ALS in Orange and Brisbane. Both laboratories used similar methods of analysis that included:

- Pt, Pd and Au analysis by 25 g fire assays and ICP finish
- Sc, Ni, Co, Zn, Fe analysis by 4 acid digest and ICP and at time multi-element analysis by ICP (2011 to 2014)
- Multi-element analysis was by glass fusion XRF for a range of elements along with loss on ignition (LOI) analysis where:
  - o until 2013 XRF was undertaken in phases with some providing Ni and Co analyses; and
  - o from 2016 all sampling and re-assaying used XRF instead of ICP and included Sc analysis

#### **Mineral Resource estimation**

A block model was constructed to represent the laterite profile using a regular block size of 12.5 m by 12.5 m by 1 m with no sub-blocking except to 0.1 m at surface.

Block grades were estimated using Ordinary Kriging. Unfolding of each laterite domain was used to reflect the geological profile and improve sample selection during estimation. Grades were estimated on a parent block basis using block discretisation of 5 by 5 by 1 points. A three-pass search ellipse was used during estimation at an increasing radius of 70 m, 140 m and 420 m.

Figure 6 displays an example section from the new 2018 drilling program for scandium and cobalt.

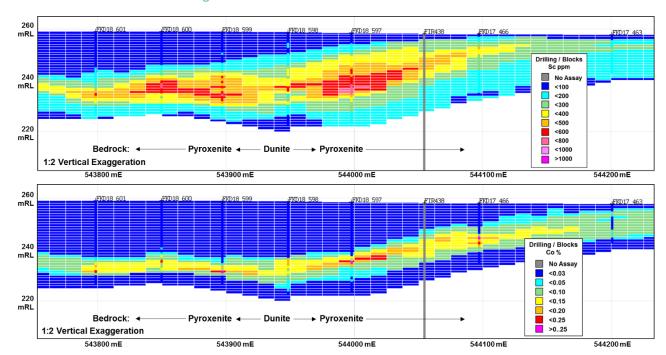


Figure 6: Box Cowal cross section 6392100 mN

Extreme grades for potential economic elements were restricted by applying top-cut values determined from summary statistics (the 99.9<sup>th</sup> percentile). Applying the top-cut values to the drill hole assay data does not have a significant impact on the average grades except for platinum, which has a more skewed distribution.

The estimate was validated by: visual inspection of the model, construction of swath plots in easting, northing and RL comparing drilling with model estimates and comparison with the previous Mineral Resource.

In-situ dry bulk density values were assigned to each laterite horizon based on average measurements from drill core and is supported by geophysical density measurements.

#### **Resource comparison**

A comparison of the updated Mineral Resource to the previous estimate, illustrated in Table 5, indicates a significant increase in the estimate predominantly from the two drilling and reassaying areas that were the focus of the 2018 field program. However the broader reassaying program of Helix drilling has also resulted in gains and some losses as more regional scandium analyses are obtained.

The comparison displays a significant increase in the proportion of Mineral Resource classified as Measured and Indicated compared to Inferred.

The 2017 drilling program has added to the bulk density data and prompted a significant review of the in-situ bulk density and moisture content. A revision of the assumed bulk density was considered necessary and contributed to a 12% decrease in the total Mineral Resource (if considered in isolation).

The effect of removing the older Helix nickel and cobalt assays from the Mineral Resource estimate could not previously be quantified, however, it was made possible by new re-assaying of available historical samples and removes any risks associated with using the older analyses.

The new drilling and assay information has allowed for an upgrade of the Mineral Resource classification in many areas and has also provided a significant extension to the overall Mineral Resource area. This is reflected at lower geological cut-offs which indicate that 33% of additional mineralised laterite has been included in the updated Mineral Resource.

Table 5: Owendale Mineral Resource estimate comparison for 300 ppm Sc cut-off

Previous estimate (Aug 2017)			ι	Jpdated e	stimate (	Aug 2018	3)			
-		Sc	Pt	Ni	Со		Sc	Pt	Ni	Со
Classification	Mt	ppm	g/t	%	%	Mt	ppm	g/t	%	%
Measured	6.9	440	0.42	0.13	0.07	7.8	435	0.42	0.13	0.07
Indicated	11.6	400	0.26	0.11	0.07	12.5	410	0.26	0.11	0.06
Inferred	15.1	375	0.23	0.09	0.05	15.3	380	0.22	0.08	0.05
Total	33.7	395	0.28	0.11	0.06	35.6	405	0.28	0.10	0.06

#### Classification

Classification is based on scandium, the current focus for development. Scandium is enriched through supergene processes and as a result has significant lateral continuity. This is evident as consistent enrichment throughout the laterite profile to levels typically >100 ppm Sc as well as higher enrichment in the upper iron- rich part of the laterite profile that is the basis of the 300 ppm cut-off and Mineral Resource statement.

Cobalt displays a similar enrichment process to scandium, although it is generally enriched in a narrowed horizon towards the lower half of the laterite profile. With similar assaying coverage, the classification approach is equally applicable to cobalt given there is sufficient scandium throughout the laterite to make lower grade cobalt cut-offs potentially economic.

The Mineral Resource classification is based on strict drill hole spacing criteria used to determine the confidence categories of the mineralisation as follows (see Figure 4 and Figure 5):

Measured Mineral Resource: regular pattern of 50 m spaced drill holes Indicated Mineral Resource: regular pattern of 100 m spaced drill holes Inferred Mineral Resource: generally 200 m drill hole spacing

Extrapolation is limited to one quarter of the target drill spacing for each classification. This is restricted further when adjacent to less prospective monzonite or ultramafic units which have inadequate drill sampling and account for several embayments in the classification boundary.

#### **Mining**

The laterite Mineral Resource at Owendale is thin, laterally extensive and has minimal overburden. Pit depths will be generally in the range of 20 m to 25 m in depth. Geotechnical reviews have indicated the material will be free dig and relatively competent. The topography is flat making strip mining feasible and simple mining excavation is expected. Hence, there are no technical impediments to mining the estimated Mineral Resources.

The Mineral Resource is based on block grade estimates within the laterite profile. At the 300 ppm Sc cut-off the Mineral Resource is drawn from within the upper laterite horizon. The estimation of Sc grade does not use any selective grade boundary interpretations, instead using block grade estimation to define blocks above 300 ppm or 600 ppm Sc. Block estimation and inherent smoothing has introduced most of the expected mining dilutions required for mine planning.

The existing Ore Reserve (announced 13 Sep 2017) is expected to be updated for the new Mineral Resource and expected to incorporate the new focus areas for the 2018 drilling as well as steeper pit wall slopes following encouraging geotechnical results.

#### Metallurgy

Platina completed a PFS (see announcement dated 10 July 2017) for a pressure acid leach processing facility with solvent exchange to extract scandium and mixed sulphide precipitation for nickel and cobalt. Total recoveries assumed include:

- 85.7% for cobalt (80% payable)
- 83.1% for nickel (75% payable)
- 90.3% for scandium

#### **Cut-off grade**

Previous Mineral Resources were stated using 300 ppm and 600 ppm Sc cut-off grades. These are both above the marginal economics for Sc described in the recent PFS which indicates they adequately define the lower and higher grade Mineral Resource.

For scheduling purposes, the PFS assessment used 450 ppm and 550 ppm Sc cut-off grades for mining selection. The significant additions to the updated Mineral Resource will allow these mining targets and cut-offs to be reviewed with respect to the strategy for the mine schedule in further studies. Since they are likely to change during the next mine planning review they are not adopted for the Mineral Resource reporting.

A cut-off of 0.08% Co was adopted for the current report to better reflect the breadth of cobalt mineralisation. The high scandium content throughout most areas of cobalt mineralisation means that such a cut-off is a potentially viable economic target and is practicable if cobalt became the focus for production.

#### **Sensitivity**

The Mineral Resource update is based on modern assays undertaken since 2010, with the exception of some remaining 1980s and 1990s platinum, nickel, cobalt and copper assays. However, the early drilling was assayed using four acid digest and ICP methods. Re-assaying by glass fusion XRF has revealed analytical biases. Using the available assay pairs, an average correction factor has been applied to examine the sensitivity of the 300 ppm Sc Mineral Resource to any potential upgrade if the samples were re-assayed or a correction applied.

Table 6 presents two situations based on assaying methods:

- The potential change in grade to the existing Mineral Resource
- The potential change in tonnes and grade if using the adjusted Sc grade

These results indicate that the Mineral Resource is still dominated by the biased four acid digest ICP analysis for scandium and that the net effect if corrected or re-assayed would be a possible increase the Mineral Resource by 10% at similar grade. Given the net effect is on tonnage and that the development currently proposed is relatively modest there is no immediate need to further assess or correct the suspected assay biases and the ICP analyses have been used. The issue will have minimal impact on the future mining studies that will target the recent Aircore drilling area for initial development where ICP analyses will have little input.

Table 6: 300 ppm Sc Mineral Resource sensitivity to assaying method

	Existing Miner	ral Resource	Adjusted Mine	eral Resource
	% Mineral Resource	Resource component	% Mineral Resource	Resource
Component	informed by ICP	change	informed by ICP	component change
Mt	-	-		10.0%
Sc	34%	2.5%	38%	0.0%
Ni	25%	1.0%	27%	0.4%
Со	22%	0.8%	24%	(1.6%)

The understanding of the in-situ bulk density and moisture content remain one of the more challenging technical aspects to assess. The interaction of moisture content with dry bulk density in laterites means that core measurements can easily become biased due to their ability to absorb drilling fluid during diamond core drilling, complicating the measurement process and the interpretation of results. Until an open pit is undertaken a full understanding of the true in-situ moisture content and dry bulk density will retain some level of uncertainty.

The previous 2017 reduction in dry bulk density followed collation of more data. It is considered that this now places the bulk density assumptions for Owendale within the bounds of  $\pm 10\%$ .

## **Competent Person statement**

This Mineral Resource estimate and the 2018 exploration program was undertaken or supervised by Mr John Horton, Principal Geologist, who is a Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy and a full time employee of ResEval Pty Ltd. Mr Horton has sufficient experience that is relevant to the style of mineralisation and the type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves'. This includes over 20 years of experience in Nickel Laterite deposits and over 8 years of years of experience with Scandium Mineral Resource estimation.

#### For further information, please contact:

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# Appendix A JORC 2012 Table 1 criteria assessment

A technical report has been prepared that documents aspects of the Mineral Resource estimate. The following tables provide a brief summary of that information in the order and form of the JORC (2012) Table 1.

Section 1: Sampling Techniques and Data

Criteria	Explanation
	Exploration is principally over four principal phases, including:
	<ul> <li>Initial diamond drilling by Anaconda in the 1960s discovering the intrusive system and related copper and platinum mineralisation</li> </ul>
	Platinum exploration by Helix and various joint venture partners between 1986 to 2006
	<ul> <li>Platinum focused exploration by Platina from 2007 with laterite drilling between 2011 to 2013</li> </ul>
	<ul> <li>Platina Mineral Resource definition drilling in 2017 and 2018 and re-assaying focusing on scandium</li> </ul>
	Helix surface costeans and other surface samples were not considered for Mineral Resource evaluation purposes.
	Diamond core is limited and where available generally half core sampled.
Sampling	Helix and Platina percussion drilling samples were generally collected via a cyclone mounted on the drill rig or trailer and split using a riffle splitter for field sampling.
techniques	When too wet spear sampling methods were used for splitting. Owendale is generally a dry laterite in 2017 and 2018 spear sampling was necessary over only short runs in occasional holes and is estimated to be used in less than 1% of the sample intervals. Though spear sampling methods can have issues with particulate materials they are generally not an issue with sampling of laterites which are fine and the elements evenly distributed. There is no available trial sampling to verify the spear sampling robustness nor are there sufficient records to indicate how many previous samples used spear sampling.
	Helix drilling was primarily by RAB with analyses initially on composited on 2 m or 4 m intervals, with selective re-assaying on the original 1 m or composited 2 m intervals. Limited assaying for Pt was late expanded to some other elements.
	Platina drilling was regularly sampled in 1 m intervals from principally RC drilling.
	Platina drilling included some diamond core which was half or quarter core sampled in 1 m intervals.
	Limited re-assaying of Helix RAB samples was completed from late 2016 and involved re-assaying of the remaining pulped samples.
	Anaconda completed four diamond drill holes in 1967 but there are no assays available.
	Helix drilling (1986 to 1999) consists of:
Drilling techniques	<ul> <li>RC drilling (78 holes for 9897 m) by a Warman 650 drill rig with both vertical and inclined drilling. This used blade bit to refusal followed by an RC hammer bit. Sampling over 2 m intervals was via a cyclone bag which was subsampled on site to 2-3 kg using several spears Some early drill holes are likely to have used cross over subs susceptible to down hole contamination</li> </ul>
	<ul> <li>Diamond drilling (13 holes for 5326 m) by a Warman 1000 drill rig using HQ after a short RA pre-collar. Down hole surveys were collected using an Eastman single shot camera</li> </ul>
	<ul> <li>RAB drilling (968 holes for 38 960 m) sampled via a cyclone on generally 2 m intervals and riffle split</li> </ul>
	Platina drilling (2008 to 2014) consists of:
	<ul> <li>RC drilling (344 holes for 15 090 m) by a small reverse circulation drill rig with a face sampling</li> </ul>

Criteria	Explanation				
	hammer bit with nominal hole diameter of 114 mm. One metre samples were collected directly from the cyclone and subsampled with a 3 or 2 tier Jones Riffle splitter				
	<ul> <li>Diamond drilling (14 holes for 2529 m) initially triple tube HQ (63.5 mm) to approximately 50 m followed by conventional NQ (47.6 mm) tail to EOH. Subsequent PQ diamond drill holes were for metallurgical samples and have no assay data used for the Mineral Resource estimate. Down hole surveys were collected using an Eastman single shot camera</li> </ul>				
	Recent Platina drilling (2017 and 2018) was by a UDR 650 rig and capable of aircore, open hole, reverse circulation and diamond core drilling. The drilling included:				
	<ul> <li>Aircore drilling (167 holes for 4690 m). The drilling program included a sampled exploration program of predominantly aircore drilling using a 113 mm (2017) and 95 mm (2018) diameter drill bit to sample the laterite profile down to the first 2 m of bedrock</li> </ul>				
	<ul> <li>RC hammer and bladed drilling used for water bores were drilled as open holes and drilled over existing sampled Aircore drilling. 2018 drilling include 2 holes for 115 m as complete RC pilot holes</li> </ul>				
	<ul> <li>Diamond PQ triple tube drilling (7 holes for 132.5 m) were completed for geotechnical and environmental analysis but were not regularly sampled and assayed for Mineral Resource definition purposes</li> </ul>				
	Drilling methods are generally suitable and acceptable in their day. Resource definition drilling has and will continue to replace early RC and RAB drilling by Helix.				
	Helix drill recovery is not reported.				
	Snowden estimated Platina RC drill recovery in 2011 and 2012 averaged around 15 kg which equates to about 80% of the expected sample for the current assumed density.				
Drill sample recovery	Aircore drilling in 2017 averaged 16.2 kg from 3575 samples for a smaller 113 mm diameter hole equates to $\sim$ 75% sample recovery. Aircore and RC drilling in 2018 averaged 11.8 kg from 1127 samples and equates to $\sim$ 75% sample recovery. These calculation assume a conservative wet bulk density of 2 t/m³.				
	In 2017 and 2018 average cyclone material build up equates to an average of 1.5 kg per sample. This accounts for 10% to 15% of the expected material.				
	Platina diamond core recovery exceeded 90%.				
	Helix database records contain logged rock type and magnetic susceptibility.				
	Platina drilling is logged in more detail with records indicating:				
	Detail geology, oxidation, colour, texture, minerals, drill type and sampling method				
And equates to 75% sample	Diamond drill core is photographed prior to sampling				
recovery.  Logging	RC chips trays are retained for all RC drilling				
	Previously Platina drill hole logging data was entered either directly into LogChief or excel spreadsheet using notebook computers with validation of the drill hole logging data performed during data entry.				
	In 2017 and 2018 logs were recorded on paper and entered into Excel and a Microsoft Access database where validation was undertaken.				
	Diamond core generally half or quarter core sampled.				
Sub-sampling techniques and	Field RC and RAB samples were generally riffle split and sometimes spear sampled to create a 3 kg primary target sample.				
sample preparation	Helix sample preparation was by Classic Comlabs at Temora. Pulverisation using a 4 kg mixer mill produced 95% passing <75 microns and was subsampled to 200 g pulps.				

# **Explanation** Criteria Platina sample preparation from 2008 to Mid-2013 was undertaken at SGS West Wyalong and included a dry, crush and pulverize to 75 µm. Samples greater than 3 kg included a rotary split stage to reduce the pulverization size to 3 kg. Sample weight was recorded before and after drying to define sample moisture content. Platina sample preparation after Mid 2013 was undertaken at ALS in Orange using a similar commercial sample preparation process except oversize samples were riffle split after drying. For the 2017drilling program the majority of samples were redirected to ALS Brisbane for preparation using an identical arrangement as used by LAS Orange. The subsampling methods are considered suitable for the laterite material. Helix Helix drill sample analysis was undertaken at Classic Comlabs principally for Pt by fire assay. Ni and Co analysis was selectively undertaken using an AAS method. There is little available information recorded on the Helix QAQC processes. Exploration reports indicate that in 1989 the assaying process was improved to account for incomplete dissolution of the sample during assaying. Helix (1989) noted that some re-assaying had revealed that previous assaying by Helix-Chevron understated platinum by approximately 50% when assays were above 0.3 g/t Pt. Other exploration reports indicate some RAB samples were selectively re-assayed for other elements such as copper, nickel, cobalt and iron. Platina (2011-2014) Platina analysis was principally by SGS in Townsville and Perth except for the last program in 2013 that was undertaken by ALS in Orange and Brisbane. Both laboratories used similar methods that included: Pt, Pd and Au analysis by 25 g fire assays and ICP finish Sc, Ni, Co, Zn, Fe analysis by four acid digest and ICP In phases multi-element analysis was by glass fusion XRF for a range of elements along with loss on ignition (LOI) analysis. The Platina drilling sample preparation, analytical, and security procedures were adequate to ensure Quality of assay high quality drill hole assay data acceptable for geological modelling and reliable Mineral Resource data and estimation. laboratory tests Platina QAQC procedures comprise inserting of certified reference materials (CRMs), field blanks (FBs), and duplicates (DPs) into sample dispatches. Three types of duplicate samples were collected: field, coarse, and pulp. Field duplicates were obtained from RC samples; coarse duplicates, from crushed samples; and pulp duplicates, from pulverized samples. In addition, the analytical laboratory used internal reference materials and pulp replicates. CRMs are used to measure accuracy; FBs, to check for contamination and mix-ups; and DPs to monitor precision at several stages of sample preparation. Results from the Duplicate assays showed that high grade Pt samples were harder to repeat within a ±10% tolerance; however most were repeatable within a ±15% tolerance. This suggests that a possible nugget effect maybe occurring within the higher grade samples and selective repeat assaying of sub-grade to ore-grade samples is recommended. Platina field banks reveal very low level Pt values indicating no significant contamination. Platina undertakes regular check analyses programmes and has monitored the current SGS method for

Platina (2016-2018)

up.

platinum and scandium for several years. The regular QAQC samples and periodic check sample programmes have not resulted in any significant assaying issues There is some evidence of

underreporting of scandium by up to 9% in standards and check samples that require further follow-

#### Criteria Explanation

From 2016 all primary analyses were undertaken by ALS Brisbane for fused bead XRF for Sc, Ni, Co and multielement analysis and ALS Perth for fire assay for Au, Pt and Pd.

Analysis of the field duplicates, blanks and standards for the 2017 and 2018 drilling program raise no concerns. Umpire sampling is in progress with samples for all batches selected for analysis with a separate ICP method for Sc, XRF and fire assay at another commercial laboratory and neutron activation for definitive Sc and Co verification.

#### Re-assaying included:

- 1,727 Helix sample pulps from 215 drill holes to obtain Sc, Ni and Co
- 847 samples from 46 previous Platina drill holes to obtain a full multielement suite of elements including loss of ignition (LOI) in the Owendale North development area and replace some scandium analyses

The validity of re-assaying the Helix pulps samples was tested and verified with two holes that effectively twinned existing Platina drilling prior to embarking on re-assay program.

The re-assays indicate previous Ni, Co, Cr and Cu result were similar or lower as would be expected for the previous partial digestion assay method. These previous assay results are now replaced and no other Helix assays used except for the original fire assay Pt analyses. Pt displays a similar though less pronounced possible bias in the high grade range. Helix Pt result may be slightly conservative in the high grade range.

The validity of re-assaying the Platina pulps samples was tested and verified with two holes that re-assayed where existing multielement chemistry was available. Following this samples were re-assayed where they could be located and from the Owendale North development area. The re-assaying confirmed the previous ICP analyses for Ni, Co and Sc were biased low. Where available XRF analyses are now used in preference to ICP and was discussed in the PGM announcement dated 14 Feb 2017. The laterite Mineral Resource database currently comprises

- 77% of the Ni grades are derived from XRF which reports 2% higher grade
- 72% of the Co grades are derived from XRF which reports 12% higher grade
- 39% of the Sc grades are derived from XRF which reports 10% higher grade

These results are relative to both previous Platina ICP and historic Helix ICP analyses.

Helix completed a check sampling program in 1995. 1519 previously drilled RAB samples were selected for resampling and analysed for base metals only.

Platina completed a check sample programme in 2011 and 2013. Umpire laboratory pulps were collected from the pulped original sample packets and were submitted to the ALS laboratory in Orange (2013) and Genalysis in Perth (2011). Results from 2011 show that overall there is minor bias in samples >1000 ppb Pt between the check sample assays and the original assays but no weight is attributed to the discrepancy due to the small number of samples involved. Results from 2013 show that overall there is bias in some samples between the check sample assays and the original assays.

# Verification of sampling and assaying

Platina also undertook check sampling for density measurements.

In 2011 the Platina RC drilling program was principally designed to verify known mineralisation drilled previously by Helix with RAB drilling at Owendale North, Box Cowal, Cincinnati and Kelvin Grove prospects as well as some other anomalies.

Re-assaying in 2016 of Platina drilling from 2011 to 2013 was used to confirm previous result and determine suspected underreporting.

Re-assaying from 2017 of Helix drilling from the 1980s and 1990s largely confirmed the previous result though generally high grades were reported with the improved XRF analysis method. A few outliers indicate a difference in chemistry and potential error in the assignment of grades for the original Helix re-assays for Ni and Co in the late 1990s. This highlights possible database issue with the Helix re-

Criteria	Explanation
	assay information, avoided in the current estimate by the exclusion of all assays except to assist geological interpretation.
	Helix drilling was undertaken on a local grid and surveyed by undisclosed methods. The collar coordinates were converted to MGA Zone 55 regional grid coordinates by an independent surveyor (LVIS) based on differential global positioning locations of 13 drill holes. This resulted in a +6°25′ rotation from grid north to the previous local grid north.
	Drilling by Platina was initially surveyed by an independent surveyor (K.I. Lupis) with a Trimble TSC2 Controller, 5800 receiver, 5700 Base and Zephyr Geodetic antenna. Subsequently since 2012 Platina drilling was surveyed internally using an Omnistar corrected GPS.
Location of data	Platina 2017 drilling was surveyed after drilling using a differential GPS (Trimble DGPS Geoexplorer 6000) to sub-metre accuracy.
points	Platina 2017 drilling was surveyed by a register local surveyor at completion of the program using a differential GPS to sub-metre accuracy.
	Drilling is generally vertical and short and consequently is not surveyed down hole. This does not present significant location issues for the thin laterite zone comprising the current Mineral Resource estimate.
	Most of the Mineral Resource is covered by a detailed drone survey completed in late 2016. This is supplemented over a broader area using locations from a detailed ground gravity survey completed by Platina in 2011.
Data spacing	Majority of the drill holes were sampled on regular $1\mathrm{m}$ intervals with some wider samples and composite samples for older drilling. The drill hole samples were composited to $1\mathrm{m}$ down hole intervals by laterite domain.
and distribution	The sample spacing is adequate to define the continuity and thickness of the laterite profile.
	Lateral drill hole spacing is reflected by the Mineral Resource classification and is principally at regular spacings of 50, 100 and 200 m. Limited 25 m and 12.5 m spaced drilling was also completed.
Orientation of data in relation to geological structure	The drill holes are mostly vertical with only a few inclined drill holes used when targeting deeper fresh rock zones. This intersects the flat laterally extensive laterite profile at the optimal angle.
	No specific security measures were undertaken by Platina.
Sample security	From 2011 to 2014 samples were collected and organised by Platina personnel. Sampling procedures have been documented in internal reports. Snowden personnel audited the process in 2011 and 2013 and found that the process was well organised and consistently applied and maintained. Sample location integrity was maintained through the use of sample bag numbering and by the inclusion of numbered tags, with sampling records maintained and monitored by the supervising geologist. Sample dispatch from site to laboratory was undertaken through commercial transport companies, laboratory personnel or Platina personnel. Sample dispatch forms were forwarded to laboratories and reconciled upon receipt.
	In 2017 drilling, sampling and dispatch were supervised by a subcontracting exploration service company. All work was overseen by Platina staff.
	In 2018 drilling, sampling and dispatch were undertaken by Platina staff.
Audits or reviews	Snowden Mining Industry Consultants Pty Ltd (2012) prepared an NI 43-101 format technical report that was not publically released. Snowden report completing a 10% audit of the Platina database against hard copy assay certificates, a reviewed 2011 QAQC and a site visit in April 2011.

Criteria	Explanation
	Snowden subsequently reviewed exploration field procedures on a site visit 14 April 2013.
	Geo Logical Pty Ltd independently compiled and reviewed the QAQC data for Platina drilling programs in 2013 and 2014.
	During the 2013 Mineral Resource update Golder Associates Pty Ltd undertook drill hole database validation, statistical review, established laterite domaining process and reviewed the previous QAQC data.
	In 2016 and 2017 Platina undertook re-assaying of two Helix RAB drill holes that twin existing Platina RC drilling to ensure there were no indications of degradation of the Helix pulp sample material. Reassaying was extended to a large number of Helix and also previous Platina drilling. Both programs resulted in similar grade tenors though some bias was determined.

Criteria	Explanation
Mineral tenement and land tenure	The Owendale deposit falls within Exploration Licence EL7644. This licence is 100% owned by Platina Resources Ltd and was granted on the 2 Dec 2010 and renewal has been offered for a further term of 5 years expiring in 2020 (Figure 3).
status	The licence measures approximately 9.3 km north-south and 7.8 km east-west.
	The Owendale intrusive was first recognised in 1961 by a Bureau of Mineral Resource aeromagnetic survey. The area has been held under a series of exploration licences and companies since 1964 including:
	<ul> <li>1964 to 1967 Anaconda Australia Inc and Quality Earths Pty Ltd</li> </ul>
	• 1969 to 1970 Platina Developments NL
	• 1982 to 1983 CRA Exploration Pty Ltd
	• 1979 to 1980 Shell Company of Australia Ltd
Exploration done by other parties	<ul> <li>1985 to 2006 Helix Resources Ltd and in joint ventures with Chevron Exploration Corporation (1985 to 1988) and Black Range Minerals (1999 to 2004)</li> </ul>
	2006 ongoing Platina Resources Ltd
	Initial exploration focused on vermiculite, kaolin and deep lead platinum mineralisation.
	Helix undertook the first extensive drilling program with 39 000 m of RAB drilling, 10 000 m of drilling and 6 000 m of costeans. This identified a number of platinum group mineral anomalies that included placer, residual and primary mineralisation. Helix also explored for copper porphyry systems and nickel laterite mineralisation.
	Platinum production is limited to the Fifield deep lead deposits to the south of Owendale.
	The nickel-cobalt laterite at Owendale is developed over ultramafic and pyroxenite rocks and is typical for laterite mineralisation which forms through both residual and supergene enrichment processes. The relatively low grade of nickel at Owendale, compared to other nickel laterite Mineral Resources, is consistent with the lower grade of the underlying ultramafic rocks.
Geology	The enrichment of scandium occurs during lateritisation through similar processes to nickel-cobalt and is similar to other known occurrences nearby at Syerston and in North Queensland. The high scandium grades are also consistent with higher than usual scandium grades in the underlying pyroxenite units.
	Enrichment of platinum in the laterite profile appears to be from residual processes as there is no evidence of supergene processes.

Criteria	Explanation
Drill hole information	Exploration results and individual drill holes are not presented in this report. Recent drilling and reassaying by Platina is provided in announcements dated 29 May, 15 June, 19 June, 26 June 2017, 2 Aug 2018.
Data aggregation	Exploration results and aggregates are not presented in this report.  No metal equivalent calculations are used or reported.
methods	1 m composites were used for the Mineral Resource estimate.
Relationship between mineralisation widths and intercept lengths	Exploration results are not presented in this report.  The vertical drilling is effectively perpendicular to the horizontal laterite providing the optimal intersection angle.
Diagrams	Maps and cross sections are provided in Figure 3 to Figure 6.
Balanced reporting	Exploration results are not presented in this report.  All recent drilling results have been reported on receipt and include announcements dated 20 May, 15 June, 19 June, 26 June 2017, 2 Aug 2018.
Other substantive exploration data	Mineral Resources are primarily defined by drilling and assaying. Geophysics and surface geochemistry are used in exploration but have no meaningful input to the Mineral Resource definition.
Further work	<ul> <li>Additional follow-up sampling is in progress for the Helix drilling and includes</li> <li>Further sampling around identified intersections</li> <li>Additional drill holes where mineralisation is indicated by current re-assaying</li> <li>Further review, validation and interpretation of the Helix logs is required to extract the best regional geological model to assist exploration and ground water modelling.</li> <li>Extension of the reassaying program moving southwards would likely result in higher scandium grades and improve future mine planning.</li> <li>Additional prospects have been identified from the recent Helix resampling that deserve follow-up exploration.</li> <li>Infill drilling below 50 m will be required for the stat-up pit design following the feasibility study to confirm the production basis for the initial small production throughput current envisaged.</li> </ul>

Section 3: Estimation and reporting of Mineral Resources

Criteria	Explanation
	Platina have engaged a database management company Maxwell Geoservices to maintain their drill hole database in Datashed and Microsoft Access.
Database	The Helix drilling database remains in its original format in a Microsoft Access database.
integrity	Platina is yet to fully integrate the Helix data into their database as additional data entry and validation has been progressively undertaken. Platina maintains their own drilling data to an acceptable standard incorporating QAQC data and using external expertise.
Site visits	Consulting geologists from Snowden who completed previous Mineral Resource estimates and visited the site for review purposes in 2011 and again in early 2013 to review field practises.  Exploration and Mineral Resource evaluation from mid-2016 was supervised by John Horton,

Criteria	Explanation
	encompassing several site and laboratory visits, with the last site visit in August 2018.
Geological interpretation	Interpretation of the laterite profile is based on anomalous platinum and scandium grades. This was initially undertaken on a 100 ppb Pt or 100 ppm Sc thresholds. These thresholds were progressively reduced to values of 50 ppb Pt and 50 ppm Sc in lower grade and marginal areas to assist the lateral extension of the laterite domaining. The geochemical domaining process defined the mineralised laterite zone which is abruptly lower grade in platinum going up into the alluvial cover and a more gradational lower boundary going down into the saprock and bedrock where basement grades range from 30 to 80 ppb Pt.
	Where Platina drilling was available with multi-element chemistry the laterite profile was subdivided into vertical zones for limonite, transition and saprolite. Where magnesium was assayed the thresholds of 2% (limonite-transition) and 8% (transition-saprolite) MgO were used. Where iron assays existed but no magnesium assays then the thresholds of 22% (limonite-transition) and 38% (transition-saprolite) $Fe_2O_3$ were used. These criteria are varied based on the interpreted bedrock and magnesium and iron grades change for dunite and pyroxenite bedrock materials.
	This approach reflects the systematic geochemical laterite profile and is consistent with other laterite deposits where geochemical domaining is considered more reliable than qualitative geological logging.
Dimensions	The laterite deposit is thin (up to 55 m in depth) and laterally extensive. The main area has an extent of about 3 km (north-south) by 1 km (east-west) and is horizontal. The deposit is covered by alluvium over all areas.
	The estimated geological Mineral Resource cover 1141 Ha with an average thickness of 15.4 m of laterite and 10.5 m of overburden.
	The scandium Mineral Resource Statement covers a smaller area of 389 Ha with an average Mineral Resource thickness of 7.5 m and 13 m of overburden.
Estimation and modelling techniques	A block model was constructed to represent the laterite profile using regular block size of 12.5 by 12.5 by 1 m with no sub-blocking, except at surface with vertical definition to 10 cm.
	Block grade were estimated using Ordinary kriging (OK). Unfolding of each laterite domain was used to reflect the geological profile and improve sample selection during estimation. Grades were estimated on a parent block basis using block discretisation of 5 by 5 by 1. A three pass search ellipse was used during estimation at an increasing radius of 70, 140 and 420 m.
	Extreme grades for potential economic elements were restricted by applying top-cut values determined from summary statistics (the 99.9 percentile). Applying the top-cut values to the drill hole assay data do not have a significant impact on the average grades except for platinum, which has a more skewed distribution.
	The estimate was validated by: visual inspection of the model, construction of swath plots in easting, northing and RL comparing drilling with model estimates and comparison with the previous Mineral Resource.
Moisture	All density samples are calculated on a dry basis and dry bulk density used for the Mineral Resource estimation.
	Average moisture content derived from sample drying weights was also estimated and average 13% for laterite. Diamond core samples return greater moisture content but are contaminated with drilling fluid and the results considered misleading.
Cut-off parameters	Mineral Resources are stated for both cut-off grades of $0.1\%$ Co and $300\mathrm{ppm}$ Sc, which overlapped in significant areas.
	There is no significant Scandium market and the first stable mine production will affect both supply

Criteria	Explanation
	and demand. Owendale also presents a large relatively high grade Mineral Resource.
	Consequently the selection of cut-off grade is not based on a marginal economics which at current metal prices would classify more of the laterite profile at Owendale as potentially economic. Instead a 300 ppm scandium cut-off was selected to present a significant Mineral Resource, effectively reporting at the 19 <sup>th</sup> percentile of the laterite profile or 34 <sup>th</sup> percentile of the upper laterite profile. The 300 ppm Sc cut-off represents a robust cut-off with extensive lateral continuity that should not present any mining selectivity issues.
Mining factors or assumptions	The laterite at Owendale is thin, laterally extensive and has minimal cover. The topography is relatively flat making strip mining feasible where free digging is expected. Hence there are no technical impediments to mining the estimated Mineral Resources.
	The Mineral Resource is based on block grade estimates within the laterite profile. At the 300 ppm Sc cut-off the Mineral Resource is drawn from within the upper laterite horizon. The estimation of Sc grade does not use any selective grade boundary interpretations, instead using block grade estimation to define blocks above 300 ppm Sc. Block estimation and inherent smoothing will have introduced most of the expected mining dilution required for mine planning.
Metallurgical factors or assumptions	The Owendale PFS announced on 10 July 2017 included HPAL (high pressure acid leach) processing with sulphuric acid leach and downstream metal extraction with SX (solvent exchange) and refining for scandium to produce a scandia (scandium oxide) product and a circuit to precipitate nickel and cobalt as a MSP (mixed sulphide product).  Overall recoveries included:  85.7% for cobalt (80% payable)  83.1% for nickel (75% payable)
	90.3% for scandium
Environmental factors or assumptions	There are no significant known environmental liabilities on the Platina exploration licence.
	Wet and dry bulk density measurements are derived from a number of sources including:
Bulk density	<ul> <li>Down hole gamma tools density measurements for five diamond holes with 19794 long and short wavelength readings</li> <li>Archimedes method for five diamond holes drilled for density in 2011 with 823 wet and 343 dry measurements</li> <li>Calliper method for three diamond holes drilled for density in 2014 with 45 wet measurements</li> <li>Seven diamond holes drilled for geotechnical sampling in 2017 with         <ul> <li>Calliper method with 53 wet and 20 dry measurements</li> </ul> </li> </ul>
	<ul> <li>Laboratory method with 4 wet and dry in-situ measurements</li> <li>The 2017 program targeted a greater understanding of the density and moisture content and has resulted in a reinterpretation of the previous work and a re-evaluation of the laterite in-situ moisture content and bulk density.</li> </ul>
	Average dry bulk density for the Mineral Resource material is
	<ul> <li>Limonite 1.6 dt/m³</li> <li>Transition 1.3 dt/m³</li> <li>Saprolite 1.5 dt/m³</li> </ul>
	Classification previously considered Platinum that is residually enriched in the laterite profile and has

Criteria	Explanation
	supergene processes and as a result has significant lateral continuity. This is evident as consistent enrichment throughout the laterite profile to levels typically >100 ppm Sc as well as higher enrichment in the upper iron rich part of the laterite profile.
	Only Platina drilling or recently re-assayed historic holes with scandium assays available were used for estimation and considered for classification purposes. Average drill spacing was used to determine the confidence categories of the mineralisation as follows (see Figure 4 and Figure 5):
	Measured Mineral Resource regular pattern of 50 m spaced drill holes
	Indicated Mineral Resource regular pattern of 100 m spaced drill holes
	Inferred Mineral Resource generally 200 m drill hole spacing
	Selected older Helix drilling was used only for geological interpretation and estimation. In half the cases the drilling is replaced with selectively reassays.
Audits or reviews.	The Mineral Resource estimate has not been independently reviewed.
	Comparison of the Mineral Resource estimate to the previous estimate has demonstrated increases consistent with the additional sample data.
Discussion of relative accuracy/confidence	No statistical or geostatistical method (non-linear or simulation) was used to quantify the relative accuracy of the estimate within confidence limits. Accuracy of the estimate is strongly dependent on the spacing of the drilling data as indicated in the classification and quality of the drilling data.
	Use of some the older Helix drilling and assays (where not reassayed) does place some reliance on the less reliable Ni and Co assayed from the 1980s and 1990s. These generally inform wide spaced drilling areas where their inclusion is warranted.