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Kareevlei Mineral Resource Update  
For: Kareevlei Diamonds (Pty) Ltd

## **Kareevlei Mineral Resource Update As at End November 2018**

Prepared for Kareevlei Mining (Pty) Ltd  
16<sup>th</sup> January 2019

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## Executive Summary

This report summarises the updated mineral resource estimate for the Kareevlei West kimberlite pipes. Importantly, the estimate update was required due to:

- Improved geological knowledge from the mining and re-interpretation of delineation holes from KVV02 (provided by Dr J Robey);
- More comprehensive revenue data in terms of both the SFD and assortment from production;
- A bulk sample from KVV05; and
- The depletion of the mined volume.

The identification of a shale raft in KVV02 has led to the re-interpretation of the tuff in KVV03 as shale and this has positively affected the grade of the Kimberlite High zone in this pipe.

Importantly, this resource update supersedes the original mineral resource estimate prepared in 2013 and should be quoted as the official mineral resource estimate from this point forward.

The updated mineral resource is summarised in the Table below and is quoted at a strict 1mm bottom cut-off. Furthermore, the carats, volume and tonnes have been rounded to the nearest 100.

Pipe	Classification	Lithology	Weathering	Volume (m <sup>3</sup> )	SG (t/m <sup>3</sup> )	Tonnes	Carats (+1mm)	Grade (cpht +1mm)
KVV01	Inferred	Kimberlite	Calcretised	23 800	2.53	60 200	3 800	6.3
			Weathered	267 900	2.52	675 200	42 900	6.4
			Fresh	314 100	2.63	826 000	50 300	6.1
		Total	605 800	2.58	1 561 400	97 000	6.2	
KVV02	Inferred	Diatreme	Calcretised	4 900	2.53	12 400	600	4.8
			Weathered	172 500	2.52	434 700	20 400	4.7
			Fresh	534 300	2.63	1 405 200	63 000	4.5
		Hypabyssal	Weathered	0	2.47	0	0	4.8
			Fresh	22 300	2.57	57 400	2 600	4.5
		Total	734 000	2.60	1 909 700	86 600	4.5	
KVV03	Inferred	Diatreme High	Calcretised	154 500	2.45	378 500	16 100	4.3
			Weathered	511 800	2.42	1 238 500	53 200	4.3
			Fresh	795 300	2.53	2 012 200	82 700	4.1
		Total	1 461 600	2.48	3 629 200	152 000	4.2	
KVV05	Inferred	Kimberlite	Calcretised	30 600	2.53	77 400	3 800	4.9
			Weathered	173 300	2.52	436 800	21 500	4.9
			Fresh	49 500	2.63	130 100	6 100	4.7
		Total	253 400	2.54	644 300	31 400	4.9	
<b>Grand Total</b>				<b>3 054 800</b>	<b>2.54</b>	<b>7 744 600</b>	<b>367 000</b>	<b>4.7</b>

At a strict bottom cut-off of +1mm, the Kareevlei kimberlite cluster comprise 367 000 carats in 7.74Mt at a grade of 4.7cpht at an Inferred level of confidence.

It should be noted that the revenue estimates of US\$323/carat and US\$411/carat for the KVV01/02/03 and KVV05 pipes, respectively, are related to the production plant process and are thus not compatible with the mineral resource estimate at a strict +1mm bottom cut-off. An SFD analysis suggests that a factor of 0.8 may need to be applied to the resource grades to produce expected production grades that are compatible with the revenue estimates should the discrepancy be due to a reduced efficiency of the current production plant.



**Contents**

Executive Summary..... 3

1 Introduction..... 6

2 Geology..... 6

3 Data Provided ..... 7

4 Geological and Volume Modelling ..... 9

5 Estimation ..... 11

    5.1 Density Estimation ..... 11

    5.2 Grade Estimation ..... 12

    5.3 Revenue Estimation..... 15

        5.3.1 Previous Estimate ..... 15

        5.3.2 SFD Modelling ..... 15

        5.3.3 Assortment Modelling ..... 19

6 Mineral Resource Classification and RPEEE ..... 20

7 Mineral Resource Estimate ..... 22

8 Reconciliation to 2013 Estimate..... 22

9 Incompatibility of Grade and Revenue Estimates ..... 23

10 Glossary of Terms ..... 26

## **Table of Figures**

Figure 1-1: Location of the Kareevlei West kimberlite cluster approximately 100km northwest of Kimberley (after Grills, 2013).....	6
Figure 4-1: NW-SE cross-section of the KVV02 pipe showing the new shale unit.....	10
Figure 4-2: SW-NE cross-section of the KVV03 pipe showing the re-interpreted shale unit .....	10
Figure 4-3: New model of the KVV05 pipe (grid is 10x10m).....	10
Figure 5-1: Plan view of KVV03 showing the vertical Diatreme High/Low boundary.....	14
Figure 5-2: KVV02 production SFD data and model.....	16
Figure 5-3: KVV01 and KVV05 sample data compared to KVV02 model .....	17
Figure 5-4: KVV05 SFD model shown against the KVV05 data and compared to the KVV02 model.....	18
Figure 5-5: Kareevlei average US\$/carat/size class values for the period June 2017 to November 2018 for the well supported size classes .....	19
Figure 5-6: Average US\$/Carat/Size Class plotted against stone size on a log scale.....	20
Figure 9-1: Grade size plot comparing the KVV01/02/03 revenue models for the 2013 and End November 2018 estimates. ....	23

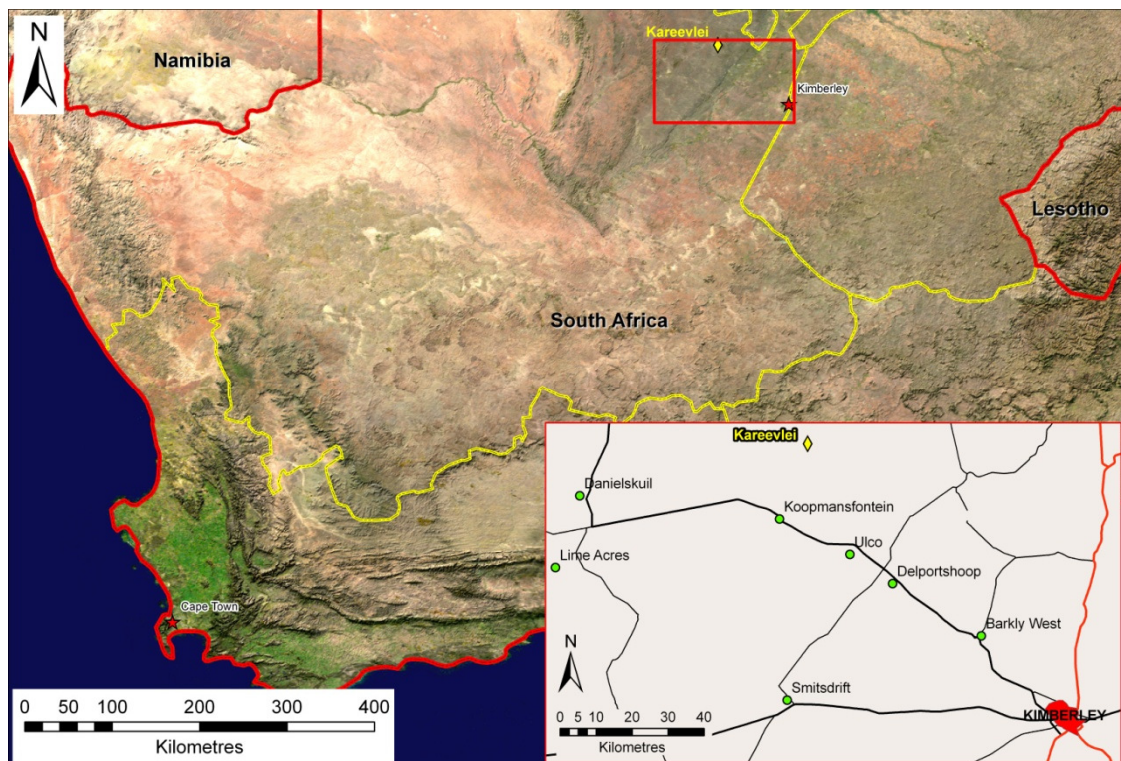
## **Table of Tables**

Table 4-1: End November 2018 depleted modelled volumes for the Kareevlei kimberlite pipes .....	11
Table 5-1: Density estimates for KVV01, KVV02, KVV03 and KVV05 pipes .....	12
Table 5-2: The % shale waste removed from the KVV03 auger sample volumes.....	13
Table 5-3. Finalised grade estimation dataset (the sampled volume has been amended for shale in the samples highlighted in yellow) .....	13
Table 5-4: End November 2018 grade estimates for the Kareevlei Kimberlite Cluster...	15
Table 5-5: Finalised SFD models for use in the revenue estimate .....	19
Table 5-6: Modelled Kareevlei assortment applied to the modelled SFDs .....	20
Table 7-1: Kareevlei kimberlite cluster mineral resource statement at a strict 1mm bottom cut-off as at End November 2018 .....	22
Table 7-2: Official reporting table for the Kareevlei Kimberlite Cluster.....	22
Table 8-1: Reconciliation of end November 2018 mineral resource to the 2013 estimate .....	23

## 1 Introduction

This report details the work that Z Star Mineral Resource Consultants (Pty) Ltd (Z\*) have undertaken to quantify an updated mineral resource estimate for the Kareevlei West kimberlite cluster.

The Kareevlei West kimberlite cluster is located approximately 100km northwest of Kimberley in the Northern Cape Province of South Africa (Figure 1-1). Four of the kimberlites (KVV01, KVV02, KVV03 and KVV04) are situated in close proximity to each other on the farm Weshoek 113, the fifth kimberlite (KVV05) lies 1.5km further northeast on the farm Skietfontein 113.



**Figure 1-1: Location of the Kareevlei West kimberlite cluster approximately 100km northwest of Kimberley (after Grills, 2013)**

The original Inferred level of confidence mineral resource estimate was completed in 2013 by Z\* based on historic exploration and sampling data. Subsequently, bulk-sampling and later mining commenced on the KVV02 pipe and provided vital information in terms of the geology, grade and revenue. This additional information has necessitated the mineral resource update which will also cater for the depletion of the KVV02 pipe to the end of November 2018.

The mineral resource update has been requested by Kareevlei Mining (Pty) Ltd (Adam Waugh).

## 2 Geology

The Ghaap Plateau is approximately 25,000km<sup>2</sup> in extent and is primarily comprised of carbonate sediments, predominantly dolomites. The Kareevlei kimberlite cluster has been emplaced into coarsely crystalline and recrystallised sub-horizontal dolomites of the Campbellrand subgroup of the Ghaap Plateau Formation. Importantly, these dolomites are part of a stable craton (>2.5 billion years old) that is known to host diamondiferous kimberlite pipes.

A total of five kimberlite pipes (namely KVV01, KVV02, KVV03, KVV04 and KVV05) have been confirmed as part of the Kareevlei kimberlite cluster, although the smaller KVV04 pipe may coalesce with KVV01 at depth. The three pipes that were the primary focus of historic exploration programmes are KVV01, KVV02 and KVV03 which have sub-crop surface areas against the overburden calcrete of 1.2ha, 1.1ha and 5.6ha, respectively.

The historic exploration on the Kareevlei kimberlite cluster used a traditional nomenclature that included:

- A root zone which occurs at the base of the kimberlite pipe and typically is irregular in shape and comprised of Hypabyssal (magmatic) material.
- A diatreme zone is usually the central portion of the kimberlite and the largest in terms of volume. It is characterised by the presence of Tuffisitic Kimberlite Breccia ('TKB') which can be easily weathered at higher levels in the pipe. The TKB typically consists of angular xenoliths of country rock combined with mantle derived fragments set in a fine-grained matrix.
- A crater zone is the upper level of the pipe where the kimberlite has often been reworked to form sub-horizontal, layered kimberlite-rich sedimentary deposits along with debris flows and pyroclastic units.

The historic logging indicated that the vast majority of the Kareevlei pipe volumes are diatreme zone kimberlite. However, there is evidence of an earlier Hypabyssal phase in KVV03 and to a lesser extent in KVV02.

Importantly, the mining of KVV02 has provided excellent exposure to better understand the geology. A kimberlite specialist, Dr J Robey has mapped the in-pit geology and re-interpreted the delineation holes and has come to a number of key conclusions:

- a) There is a previously unknown shale raft in KVV02 and this is probably replicated in KVV03 where it was identified as mudstone in some areas and tuff in others. This shale will be essentially barren; and
- b) There is a highly diluted portion of KVV02 (kimberlite breccia) that although previously modelled needs to be amended.

These understandings will be built into the updated geological model that provides the framework for grade estimation.

### 3 Data Provided

A number of exploration companies have worked on the Kareevlei kimberlite cluster and this has resulted in various phases of prospecting through time. The historic data provided for the original estimate undertaken by Grills in 2013 are summarised below:

- Following an airborne magnetic survey of the Ghaap Plateau by De Beers Exploration Services (DBES) a set of anomalies were identified as kimberlite targets. DBES proceeded to drill three holes on the larger anomalies and discovered the Kareevlei kimberlite cluster in 1991.
- In 1993, a Gencor/Diamond Resources JV drilled a total of nine percussion holes (for geological delineation) and seven tricone holes (for grade sampling) to further investigate the kimberlite occurrences. Sample treatment was through a pan plant with later grease recovery. Based on a limited sample mass of 108tonnes, a grade of 2.6cpt was calculated for this mixed sampling programme on the KVV02 and KVV03 kimberlite pipes.
- Diamond Resources (DR) undertook a phase of 1m diameter auger drilling for evaluation purposes in 1994. A total of 13 holes were drilled, three holes into each of the KVV01 and KVV02 pipes and seven holes into the larger KVV03 pipe. The sample material was crushed and treated through an eight foot pan plant. Coarser

fractions were hand-sorted whilst the finer fractions were concentrated on a Pleitz jig. Excluding the pan cleaning (0.36carats) a total of 58 diamonds weighing 18.03carats were recovered. Based on the limited sample volumes, individual pipe grades of 5.3cpht, 7.8cpht and 2.5cpht were calculated for the KVV01, KVV02 and KVV03 kimberlite pipes, respectively, from this sampling programme.

- In early 2002, Tawana Resources purchased DR and thus acquired ownership of the Kareevlei kimberlite cluster. A phased evaluation programme was planned which started with percussion drilling (for geological delineation, grade and density sampling) to evaluate the KVV02 and KVV03 kimberlite pipes in 2003. The sample treatment process commenced on site but after two months of slow progress a decision was taken to terminate the on-site treatment and the remaining samples were collected and treated through a DMS plant, under contract, by the De Beers Evaluation Services Department ('ESD') in Kimberley. Importantly, although the sample size for the 20m lifts was insufficient in terms of representative individual sampling of these relatively low grade pipes, it is evident that diamond recoveries have occurred at all depths throughout the two pipes, thus confirming the presence and reasonable continuity of grade to a depth of 100m. Based on this sampling campaign which has good spatial coverage but, unfortunately, a limited sample size, grades of 6.0cpht and 2.4cpht can be calculated for the KVV02 and KVV03 kimberlite pipes, respectively.
- In 2004, a decision was taken by Tawana Resources to implement a Bauer auger sampling programme to significantly increase the sample size and obtain more representative individual sample results. Initially a 2.5m diameter (cross sectional area of 4.909m<sup>2</sup>) auger bucket was utilised but it quickly became apparent that this large tool had difficulty in penetrating the ground conditions. As a result a change was made to a smaller 1.5m diameter (cross sectional area of 1.767m<sup>2</sup>) auger bucket. The holes were drilled as close as possible to the maximum kelly bar length of 54m. As the kimberlite became more competent with depth a considerable number of the holes had to be terminated early. A total of 5, 19, 21 and 2 holes were drilled on the KVV01, KVV02, KVV03 and KVV05 pipes, respectively. The calcrete and kimberlite was stockpiled separately adjacent to each hole for transport and treatment at a 10tph DMS plant that was commissioned on site. The process incorporated a scrubber and trommel that sized material to a +1.5mm - 16mm DMS feed. Oversize from the scrubber and +6mm -16mm DMS tailings were collected and in certain cases this material was subjected to a re-crush circuit to produce +1.5mm -6mm material that was fed through the DMS as a separate sample. It should be noted that there appears to be a discrepancy in the bottom cut-off reporting (1mm in the plant flowsheet and 1.5mm in the Snowden CPR) in the various reports. During a site visit the screens were viewed and found to be slotted 1.5mm screens. The 1.5mm bottom cut-off is more in keeping with the observed raw data size frequency distribution curves when they were plotted (see Section 6.3). DMS concentrates were stored and transported in sealed plastic drums. Final recovery involved a double pass through a Flowsort™ X-ray machine and hand-sorting. X-ray tails were also passed over a grease table. Both the DMS and X-ray components of the process were audited regularly with real diamonds. The author assumes that these diamonds were accurately accounted for as tracers. These Bauer auger results per hole are the key grade data used for both the original estimate in 2013 and this current update. It should be noted that these samples have been assigned geological codes that are compatible with the updated 3D Datamine™ model created by Z\*, the grade data are discussed at length in Section 5.2.

The following additional datasets were provided for this current mineral resource update:

- End November 2018 depletion surface for KVV02;
- Re-interpretation of KVV02 delineation holes by Dr J Robey;
- Geological face mapping interpretation and coordinates for KVV02 by Dr J Robey;



- KVVW05 kimberlite dolomite sub-crop mapping by Dr J Robey; and
- KVVW05 bulk sample result.

#### 4 Geological and Volume Modelling

Geological logging of the various phases of percussion holes was undertaken by the respective geologists on the project at the time. The most important phases of geological data acquisition are provided by the 10" percussion drilling of the KVVW02 and KVVW03 kimberlites and the 6.5" percussion drilling of the KVVW01 pipe. Both of these phases involved vertically orientated drilling and were undertaken and logged by Tawana Resource's geologists. As the percussion chips were treated for diamond recoveries there is no possibility of verifying the geological logging. In 2013 there were insufficient percussion data to model the KVVW04 and KVVW05 kimberlite pipes and therefore the possibility of generating mineral resources for these pipes was not considered.

The 10" percussion holes were drilled to a depth of 100m on a 20m and 40m grid for the KVVW02 and KVVW03 pipes, respectively. The 6.5" percussion holes on KVVW01 were drilled to an average depth of 20m on a star pattern due to the shape of the kimberlite. A number of older generation percussion holes also exist on all three pipes. In 2013 the quantity of information on all three pipes was considered sufficient for 3D geological solid models to be created. Datamine™ software was utilised to create the models which were based purely on the Tawana Resources geological logging. It should be noted that the more recent 6.5" percussion holes were logged with different geological codes to the 10" percussion drilling and as such were assigned an Undifferentiated Kimberlite code as Diatreme and Hypabyssal facies were not differentiated in the logging. Strings for the kimberlite facies were modelled in plan view on a 10m vertical spacing and on the drill hole section lines for the various weathering surfaces. In both cases the strings were then connected to create the required solids and surfaces to represent the various facies. For each of the three pipes the solid models were constrained to a depth of 25m below the deepest drill hole.

All the pipes exhibit a calcrete capping which varies from 3-15m in depth, it should be noted that the calcrete volumes in the model are constrained to the area immediately above each pipe. Below this a calcretised kimberlite unit is present (0-11m in thickness) before intersecting the weathered kimberlite. The weathering profile is variable in thickness. The kimberlite, as logged by Tawana Resources is primarily diatreme facies although a partial ring of an earlier phase of Hypabyssal facies kimberlite was modelled in both the larger KVVW03 pipe and the KVVW02 pipe. In 2013 a tuff and mudstone unit was identified towards the top of the KVVW03 pipe and this was modelled separately.

For this latest 2019 mineral resource update the model has been reviewed based on the additional information provided. The principal changes are:

- Standardising the data on a single coordinate system (LO25);
- The remodelling of KVVW02 based on the face mapping exposure in the mined out area and the delineation hole re-interpretation. In particular, near surface the pipe extends approximately 30m towards the SE and there is evidence of shale rafts within the pipe (Figure 4-1);
- The re-interpretation of the mudstone/tuff unit in KVVW03 as a shale raft and the subsequent re-interpretation of the Diatreme high/Low boundary (Figure 4-2);
- The modelling of a portion of KVVW05 (Figure 4-3). This modelling was possible as a result of the kimberlite/dolomite contact being drilled below the calcrete to provide the near surface expression of the pipe. The pipe envelope was then reduced at an angle of 80° to a final depth of 60m; the depth of the deepest Bauer auger hole. A calcrete/calcretised kimberlite boundary was introduced based on the

shallow drilling results. Calcretised kimberlite/weathered kimberlite and weathered kimberlite/fresh kimberlite boundaries were also introduced based on drilling information and the weathering profile in KVV01 and KVV02; and

- For KVV01 a weathered kimberlite/fresh kimberlite boundary was introduced based on the weathering profile in KVV01 and KVV02.

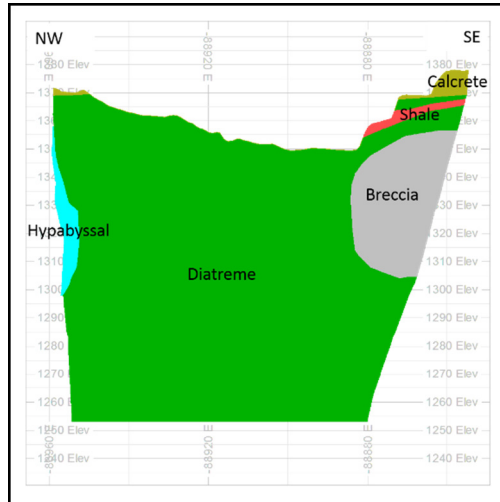


Figure 4-1: NW-SE cross-section of the KVV02 pipe showing the new shale unit

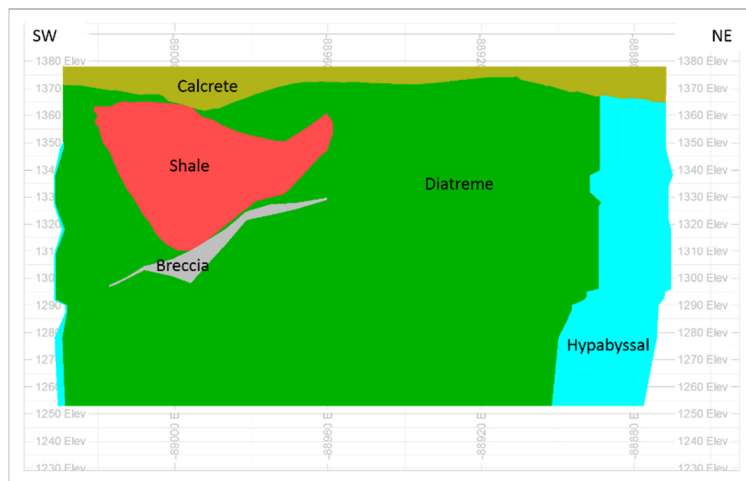


Figure 4-2: SW-NE cross-section of the KVV03 pipe showing the re-interpreted shale unit

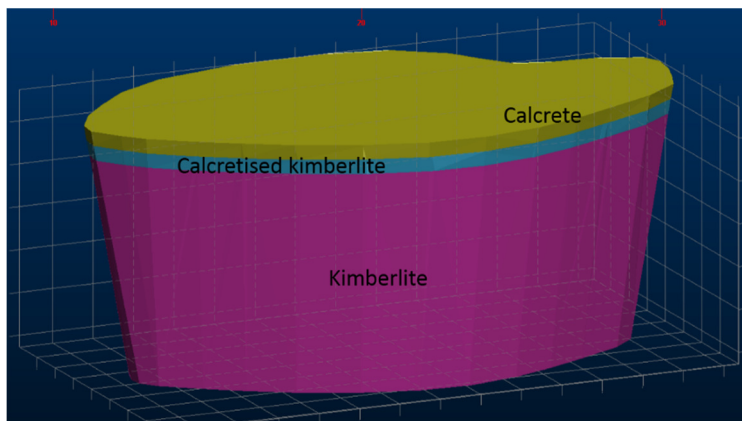


Figure 4-3: New model of the KVV05 pipe (grid is 10x10m)

The volumes are combined with the end November 2018 mining surface to account for depletions. The remaining insitu volumes (rounded to the nearest 100m<sup>3</sup>) as at end November 2018 are summarised in Table 4-1.

Depleted End November 2018			
Pipe	Lithology	Weathering	Volume (m <sup>3</sup> )
KVV01	Calcrete		216 400
	Kimberlite	Calcretised	23 800
		Weathered	267 900
		Fresh	314 100
	Total		
KVV02	Calcrete		44 700
	Breccia	Weathered	7 000
		Fresh	80 300
	Shale	Calcretised	100
		Weathered	4 100
		Fresh	4 800
	Diatreme	Calcretised	4 300
		Weathered	164 100
		Fresh	706 200
	Hypabyssal	Weathered	0
		Fresh	22 100
Total			1 037 700
KVV03	Calcrete		932 900
	Breccia	Calcretised	0
		Weathered	41 800
		Fresh	110 000
	Shale	Calcretised	18 000
		Weathered	174 100
		Fresh	61 600
	Diatreme	Calcretised	260 200
		Weathered	905 500
		Fresh	2 553 000
	Hypabyssal	Calcretised	84 100
		Weathered	397 400
		Fresh	1 156 600
Total			6 695 200
KVV05	Calcrete		108 700
	Kimberlite	Calcretised	30 600
		Weathered	173 300
		Fresh	160 300
	Total		
<b>Grand Total</b>			<b>9 028 000</b>

**Table 4-1: End November 2018 depleted modelled volumes for the Kareevlei kimberlite pipes**

## 5 Estimation

### 5.1 Density Estimation

Density measurements are available for the 10" percussion sampling programme on the KVV02 and KVV03 kimberlite pipes. Due to the variable sample length a decision was taken to discretise the data into 0.5m sample lengths to remove bias related to sample size. The data were then electronically coded onto the Datamine™ geological model. Density will not only vary in relation to rock type but also according to the extent of

alteration or weathering that has occurred. An integral part of the geological modelling was the interpolation of surfaces to separate calcretised kimberlite from weathered kimberlite and weathered kimberlite from fresh kimberlite.

As the geological model has not changed significantly since the last estimate the zonal density estimates were retained for use in this estimate update.

No robust density measurements were available for the KVV01 and KVV05 pipes and thus density estimates were extrapolated from the adjacent KVV02 pipe. Additional definition in terms of weathering was added to the KVV01 pipe. As expected, the weathered kimberlite units exhibit lower densities than their fresh equivalents.

Mean density values (zonal estimates) for each of the rock units for the KVV02 and KVV03 pipes are shown in Table 5-1.

Rock Code	KVV01	KVV02	KVV03	KVV05
	Density (t/m <sup>3</sup> )			
Calcrete	2.53	2.53	2.41	2.53
Calcretised Kimberlite	2.53	2.53	2.45	2.53
Weathered Diatreme	2.52	2.52	2.42	2.52
Weathered Hypabyssal	-	2.47	2.37	-
Weathered Shale	-	-	2.28	-
Weathered Kimb Breccia	-	2.55	2.44	-
Fresh Diatreme	2.63	2.63	2.53	2.63
Fresh Hypabyssal	-	2.58	2.48	-
Fresh Shale	-	-	2.37	-
Fresh Kimb Breccia	-	2.66	2.55	-

**Table 5-1: Density estimates for KVV01, KVV02, KVV03 and KVV05 pipes**

## 5.2 Grade Estimation

As in the original 2013 estimate the chosen variable for grade estimation is carats per cubic metre at a strict 1mm bottom cut-off (c/m<sup>3</sup> +1mm).

Due to the insufficient sample support of the earlier sampling campaigns the only viable dataset for grade estimation is the Bauer auger results.

The original 2013 report showed that significant recoveries were returned by re-crush samples and a re-crush factor was used to ensure a consistent base for estimation. No change has been made in this regard for this latest update.

This factored dataset was further amended to move the +2 diamond sieve up to a 1mm bottom cut-off; factors of 1.56% and 1.12% were used for the KVV01, KVV02 and KVV03 and KVV05 pipes, respectively. These factors are unchanged from the original 2013 estimate.

As before a decision was taken to utilise the theoretical Bauer auger hole volume (cross sectional area x sample length) as the sample volume in each case. However, the introduction of shale in the KVV02 pipe (Figure 4-1) based on face mapping and the subsequent re-interpretation of the tuff/mudstone unit as shale in the KVV03 pipe (Figure 4-2) necessitates a change to certain Bauer auger sample volumes. As the shale is barren, the length of waste material was calculated for each auger hole that intersected the shale and the volume removed. The kimberlite to waste percentage for each of the samples affected is shown in Table 5-2. It should be noted that sample volume was not removed where kimberlite breccia was intersected as the breccia is diamondiferous.

The final grade estimation dataset with updated sample volumes is detailed in Table 5-3.

Pipe	BHID	Total Length (m)	Shale (m)	% Waste	% Kimberlite
KVV03	LD06 Diatreme Sample	24.20	7.50	31	69
	LD10 Diatreme Sample	25.09	22.30	89	11
	LD15 Diatreme Sample	38.70	13.25	34	66
	LD18 Diatreme Sample	29.40	11.10	38	62
	LD19 Diatreme Sample	32.80	15.45	47	53
KVV02	LD8 1st Diatreme Sample	19.30	2.90	15	85

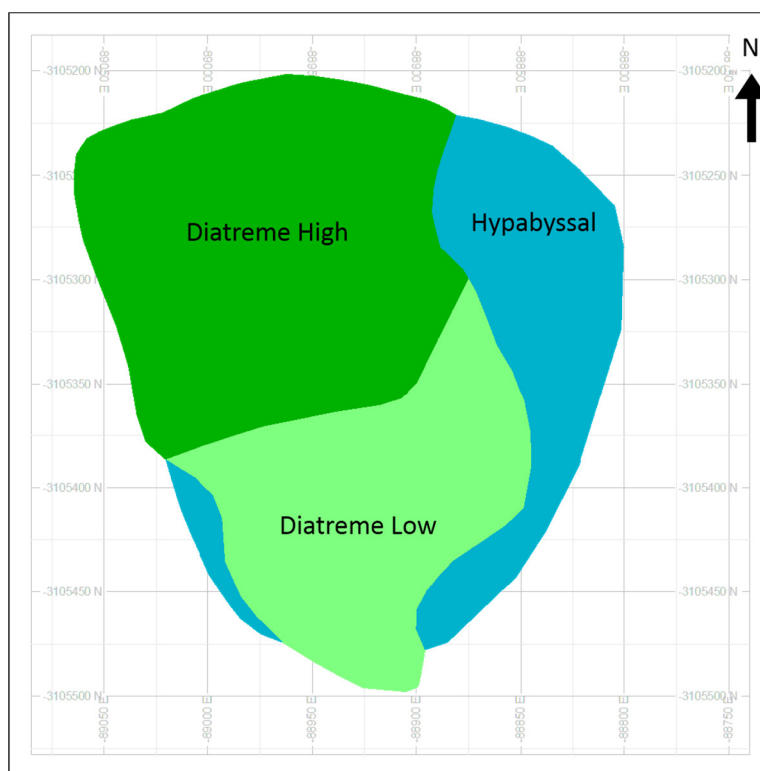
**Table 5-2: The % shale waste removed from the KVV03 auger sample volumes**

Pipe	Bauer Hole	Original Sample Volume (m <sup>3</sup> )	New Sample Volume (m <sup>3</sup> )	Rock Type	Carats (+2 sieve)	Carats (+1mm)
KVV1	LD1	50.0	50.0	Undiff Kimb	6.03	6.12
KVV1	LD2	63.4	63.4	Undiff Kimb	10.58	10.75
KVV1	LD3	18.0	18.0	Undiff Kimb	1.13	1.15
KVV1	LD4	52.1	52.1	Undiff Kimb	11.02	11.19
KVV1	LD5	69.8	69.8	Undiff Kimb	11.17	11.34
KVV2	LD1	49.1	49.1	Calcrete	1.04	1.06
KVV2	LD1	132.5	132.5	Diatreme	16.69	16.95
KVV2	LD5	61.4	61.4	Calcrete	0	0.00
KVV2	LD5	174.8	174.8	Diatreme	5.35	5.43
KVV2	LD6	22.3	22.3	Calcrete	0	0.00
KVV2	LD6	38.2	38.2	Diatreme	6.66	6.76
KVV2	LD8	24.7	24.7	Calcrete	0	0.00
KVV2	LD8	34.1	29.0	Diatreme	3.65	3.71
KVV2	LD8	13.8	13.8	Diatreme	0.74	0.75
KVV2	LD7	24.0	24.0	Calcrete	1.67	1.70
KVV2	LD7	39.9	39.9	Diatreme	5.81	5.90
KVV2	LD7	26.2	26.2	Diatreme	5.88	5.97
KVV2	LD9	64.8	64.8	Calcrete	1.09	1.11
KVV2	LD9	37.3	37.3	Diatreme	4.85	4.93
KVV2	LD3	17.7	17.7	Calcrete	0.02	0.02
KVV2	LD3	63.4	63.4	Diatreme	13.7	13.91
KVV2	LD4	21.7	21.7	Calcrete	0.66	0.67
KVV2	LD2b	15.4	15.4	Calcrete	0	0.00
KVV2	LD2b	44.0	44.0	Diatreme	6.26	6.36
KVV3	LD11/b	16.8	16.8	Diatreme High	3.44	3.49
KVV3	LD8	37.5	37.5	Hypabyssal	0.14	0.14
KVV3	LD9	50.2	50.2	Hypabyssal	0	0.00
KVV3	LD7	43.6	43.6	Diatreme High	3.09	3.14
KVV3	LD6	28.1	19.4	Diatreme High	0.62	0.63
KVV3	LD5	50.7	50.7	Diatreme High	4.83	4.91
KVV3	LD1	36.8	36.8	Diatreme High	0.8	0.81
KVV3	LD10	39.8	4.4	Diatreme High	4.26	4.33
KVV3	LD2	51.9	51.9	Diatreme High	3.09	3.14
KVV3	LD3	21.7	21.7	Diatreme High	4.71	4.78
KVV3	LD4	65.2	65.2	Diatreme High	7.19	7.30
KVV3	LD12	52.3	52.3	Diatreme High	5.02	5.10
KVV3	LD16	28.4	28.4	Diatreme Low	0.85	0.86
KVV3	LD15	51.9	34.3	Diatreme Low	0.14	0.14
KVV3	LD18	26.7	16.6	Diatreme Low	0.14	0.14
KVV3	LD21	26.2	26.2	Hypabyssal	0.05	0.05
KVV3	LD19	42.4	22.5	Diatreme Low	0	0.00
KVV3	LD17	26.5	26.5	Diatreme Low	0.53	0.54
KVV3	LD13	31.5	31.5	Diatreme Low	0.49	0.50
KVV3	LD14	32.9	32.9	Hypabyssal	0	0.00
KVV3	LD20	46.5	46.5	Diatreme Low	0.34	0.35
KVV5	LD1	86.6	86.6	Undiff Kimb	7.36	7.44
KVV5	LD2	79.3	79.3	Undiff Kimb	12.93	13.07

**Table 5-3. Finalised grade estimation dataset (the sampled volume has been amended for shale in the samples highlighted in yellow)**

The estimation dataset was utilised to create  $c/m^3$  grades for each of the facies modelled. The estimates were calculated by dividing the total carats by the total sampled volume in each facies.

In the 2013 estimate the samples in the Diatreme facies of the KVV03 kimberlite showed a significant change in grade between the north and south regions of the pipe. As a result a decision was taken to model a vertical grade boundary to subdivide the grade estimate for the Diatreme facies. Based on the recalculation of the sample grades in the diatreme facies in KVV03 a decision was taken to change the boundary slightly (Figure 5-1).



**Figure 5-1: Plan view of KVV03 showing the vertical Diatreme High/Low boundary**

As a number of facies were not sampled, grades had to be extrapolated from adjacent facies. In the case of the calcrete, grades for KVV01, KVV03 and KVV05 were extrapolated from the Calcrete to Diatreme grade ratios in KVV02 (12.7%). In the case of KVV03 the relative proportion of the Hypabyssal, Diatreme High and Diatreme Low units in contact with the calcrete was considered in the grade calculation. The Hypabyssal unit in KVV02 was not sampled, based on mining information from KVV02 the Diatreme grade of  $0.118c/m^3$  was assigned to the Hypabyssal unit, as was the case in 2013. In KVV03 and KVV02 the kimberlite breccias which are significantly diluted with country rock were assigned 25% of the host Diatreme grade as in 2013. The former Tuff & Mudstone unit in KVV03 has now been re-interpreted as Shale and as such will not be assigned a grade.

It should be noted that the grades are based on the Bauer auger sampling which is typically limited to the upper half of the kimberlites being modelled and therefore has poor spatial coverage of the entire estimated volume.

The finalised grades for the mineral resource update for the various facies of the Kareevlei kimberlite cluster are summarised in Table 5-4.

KVW01	Sample Volume (m <sup>3</sup> )	Carats (+1mm)	Grade (c/m <sup>3</sup> +1mm)
Calcrete	-	-	0.021
Undiff Kimb (calcretised, weathered or fresh)	253.3	40.55	0.160
KVW02	Sample Volume (m <sup>3</sup> )	Carats (+1mm)	Grade (c/m <sup>3</sup> +1mm)
Calcrete	301.1	4.55	0.015
Hypabyssal (calcretised, weathered or fresh)	-	-	0.118
Diatreme (calcretised, weathered or fresh)	599.1	70.68	0.118
Kimberlite Breccia	-	-	0.029
Shale	-	-	0.000
KVW03	Sample Volume (m <sup>3</sup> )	Carats (+1mm)	Grade (c/m <sup>3</sup> +1mm)
Calcrete	-	-	0.007
Hypabyssal (calcretised, weathered or fresh)	146.8	0.19	0.001
Diatreme High (calcretised, weathered or fresh)	362.8	37.63	0.104
Diatreme Low (calcretised, weathered or fresh)	206.2	2.53	0.012
Kimberlite Breccia High (calcretised, weathered or fresh)	-	-	0.026
Kimberlite Breccia Low (calcretised, weathered or fresh)	-	-	0.003
Shale	-	-	0.000
KVW05	Sample Volume (m <sup>3</sup> )	Carats (+1mm)	Grade (c/m <sup>3</sup> +1mm)
Calcrete	-	-	0.016
Undiff Kimb(calcretised, weathered or fresh)	165.9	20.52	0.124

**Table 5-4: End November 2018 grade estimates for the Kareevlei Kimberlite Cluster**

### 5.3 Revenue Estimation

An estimate of the diamond revenue for a kimberlite pipe involves modelling of the diamond Size Frequency Distribution (SFD) and the diamond value or assortment (US\$ per carat per sieve class).

#### 5.3.1 Previous Estimate

In the 2013 mineral resource estimate the limited Bauer auger data were used to model two SFDs, one for KVW01, KVW02 and KVW03 pipes because the raw SFDs appeared similar and one for the KVW05 pipe because it appeared to be coarser. The very limited Kareevlei diamond parcel from 2005 was used to model the assortment. The modelled SFD and assortment was then combined to produce an average value of US\$141/carats as at 2005. This value for the KVW01, KVW02 and KVW03 kimberlite pipes was escalated to US\$183/carats to allow for the rough diamond price increase between 2005 and 2013. As no mineral resource was declared for KVW05 in 2013 a revenue was not estimated.

The mining of the KVW02 pipe provides a much more robust set of revenue data for the current mineral resource update.

#### 5.3.2 SFD Modelling

In terms of the SFD, KVW02 production from the period June 2017 to October 2018 (16 parcels in total) were analysed for modelling. The parcels varied in size from 101 to 957 carats. Relative to their caratage, the SFDs from all 16 parcels were found to be fairly compatible and were thus combined to form a single parcel of 7 459 carats. The SFD for the combined KVW02 parcel required modelling at the coarse end of the curve to allow for an under-recovery of large stones (Figure 5-2).

Two bulk samples containing 921 and 289 carats are available from the KVW01 and KVW05 pipes, respectively. These data are compared to the KVW02 SFD model in Figure 5-3.

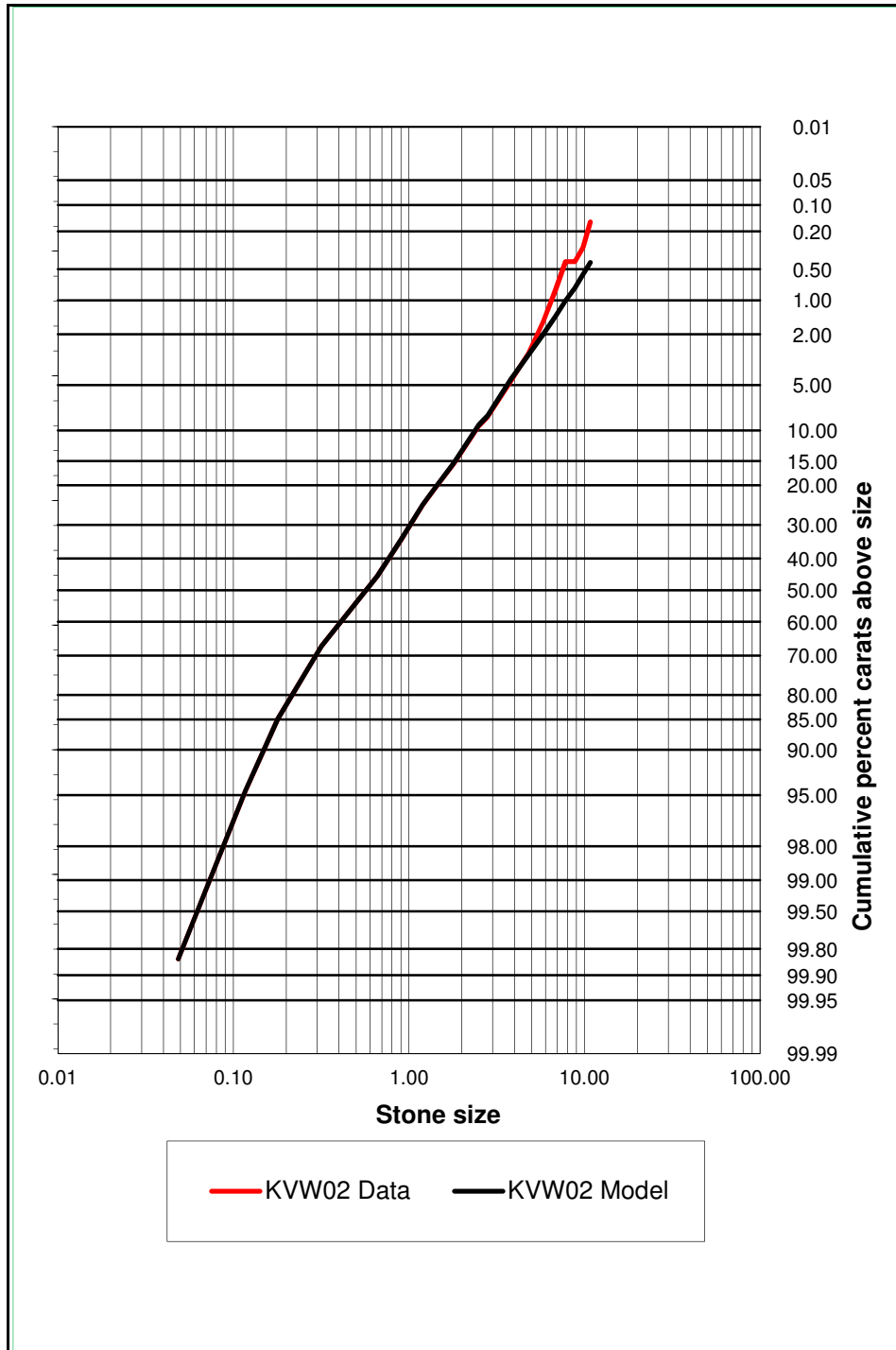


Figure 5-2: KVV02 production SFD data and model

In the small to medium size classes the KVV01 data follow the KVV02 model closely, only separating to appear slightly coarser in the large size classes. As a result, a decision was taken not to model the KVV01 parcel but rather accept the KVV02 SFD model for KVV01. Contrastingly, the KVV05 data separate from the KVV02 model much earlier in the middle size classes and exhibits a coarser SFD. This relationship was also seen in the 2013 estimate where, despite extremely limited data, the KVV05 pipe showed a coarser SFD. A decision was taken to model the KVV05 pipe SFD from the KVV05 data. The resulting KVV05 SFD model is shown against the backdrop of the data in Figure 5-4; the KVV02 model is also shown for comparative purposes.



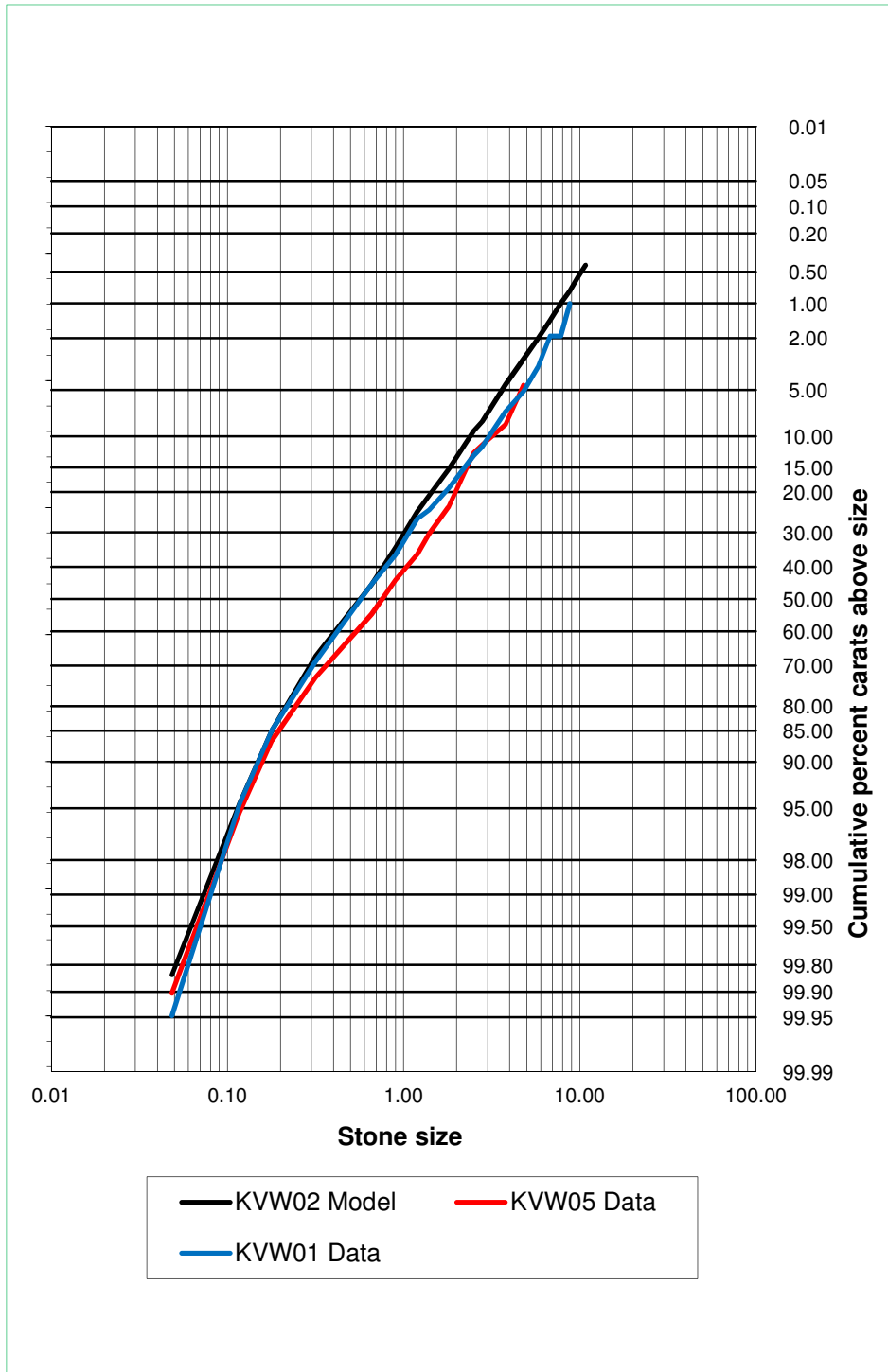


Figure 5-3: KVV01 and KVV05 sample data compared to KVV02 model

There is no bulk sample or production data available from the KVV03 pipe. In the 2013 estimate the limited Bauer auger sampling data showed similar SFDs for KVV02 and KVV03. As a result the KVV02 SFD model will be used for the KVV03 pipe.

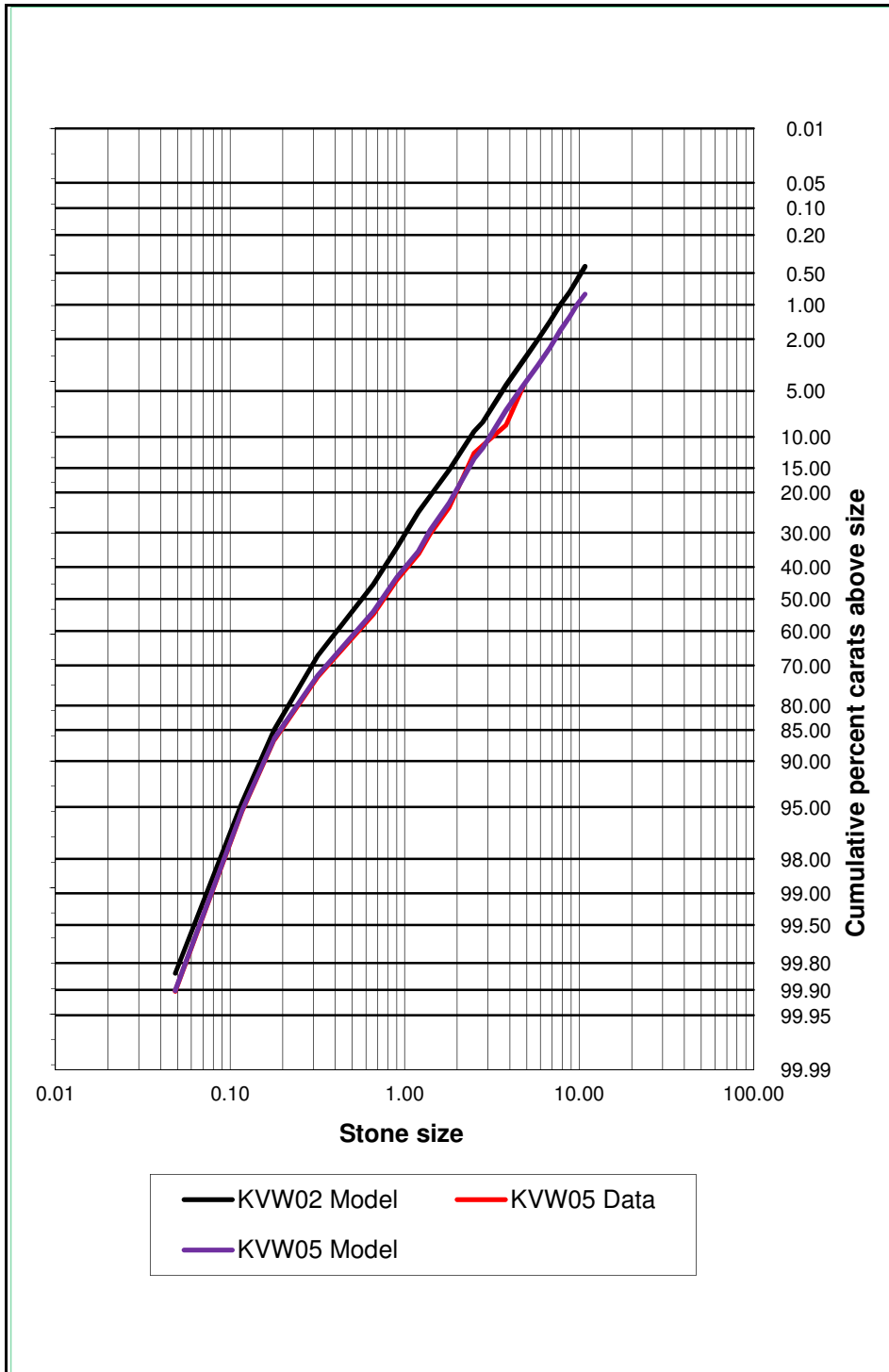


Figure 5-4: KVV05 SFD model shown against the KVV05 data and compared to the KVV02 model

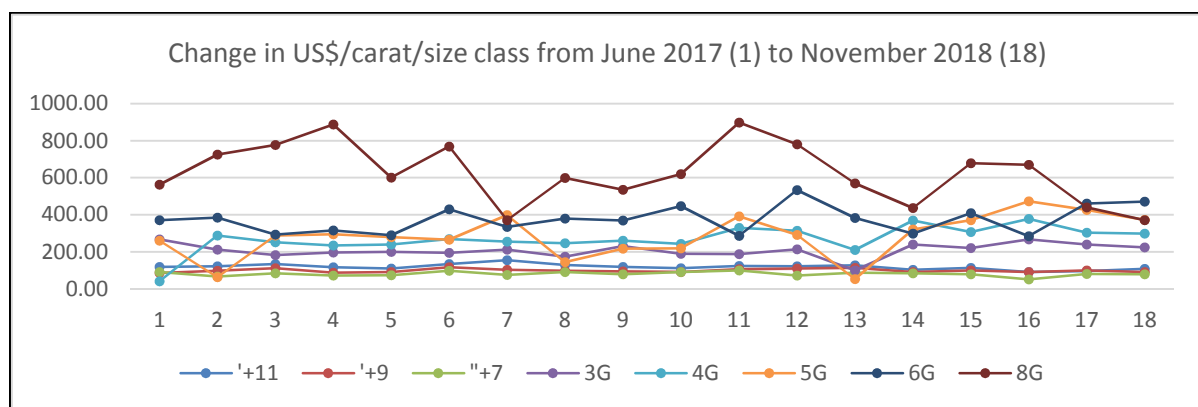
The finalised SFD models for use in the revenue estimate are summarised in Table 5-5.

Sieve Class	KVW01/02/03 Model	KVW05 Model
	% Carats/Sieve Class	% Carats/Sieve Class
+10.8	0.48%	0.80%
10C	0.18%	0.18%
9C	0.21%	0.31%
8C	0.26%	0.40%
7C	0.48%	0.67%
6C	0.72%	0.89%
5C	1.19%	1.33%
4C	1.67%	2.22%
3C	3.39%	4.88%
10G	1.19%	1.77%
8G	6.09%	8.87%
6G	5.34%	7.05%
5G	3.69%	5.90%
4G	9.66%	7.95%
3G	10.93%	10.89%
+11	22.06%	18.61%
+ 9	17.36%	13.80%
+ 7	9.72%	8.76%
+ 5	5.23%	4.63%
-5	0.14%	0.10%
Total	100.00%	100.00%

**Table 5-5: Finalised SFD models for use in the revenue estimate**

### 5.3.3 Assortment Modelling

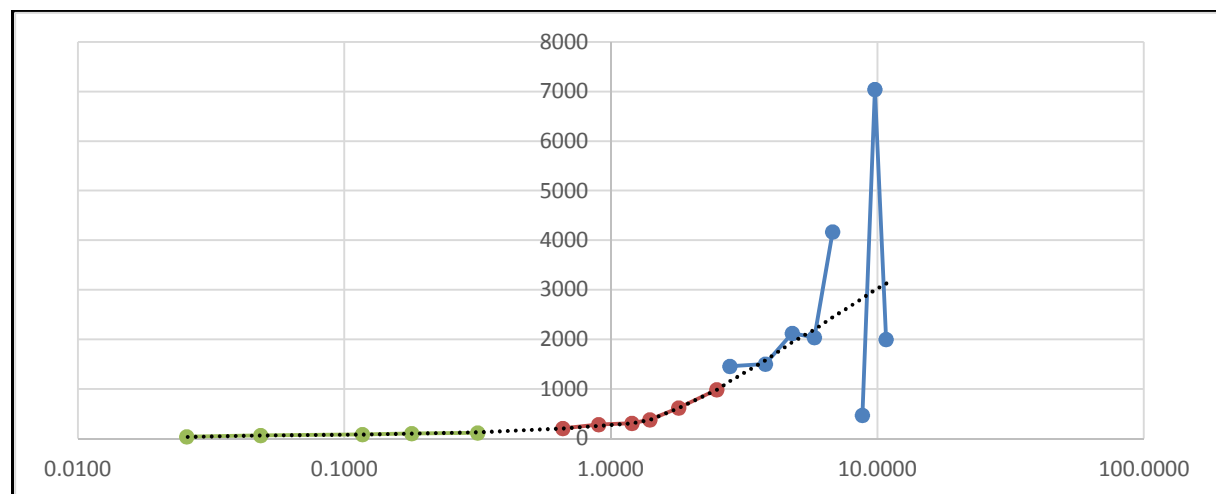
In terms of the assortment (US\$/carat/size class) the same 16 diamond parcels from KVW02 production for the period June 2017 to October 2018 were analysed in association with the KVW01 and KVW05 bulk samples. The KVW01 and KVW05 parcels showed similar diamond values to the KVW02 production, the 18 parcels had a raw average US\$/carat/size class value that varied from US\$246 to US\$675 with an average of US\$341. It is not unusual that pipes in a closely spaced kimberlite cluster with similar geology will exhibit the same diamond assortment. The average US\$/carat/size class values were plotted on a timeline for the 18 month period and the values appeared relatively stable for the well supported size classes (Figure 5-5). This indicates that the Kareevlei diamond prices have not shown large fluctuations over the period in question. Thus a decision was made to base the assortment on all 18 diamond parcels, a total of 8 609 carats.



**Figure 5-5: Kareevlei average US\$/carat/size class values for the period June 2017 to November 2018 for the well supported size classes**

The assortment data were combined and the average US\$/carat/size class value for each size class plotted against stone size on a log scale. The sieve class, grainer and carater

data are shown separately (Figure 5-6). A single model (dotted line) has been applied to fit the data, the raw data in the largest size classes are erratic and difficult to model.



**Figure 5-6: Average US\$/Carat/Size Class plotted against stone size on a log scale**

The finalised assortment model that will be applied to all four pipes is summarised in Table 5-6 where it is applied to the two SFD models to derive average values of US\$323/carat for the KVVW01/02/03 pipes and US\$411/carat for the KVVW05 pipe.

Sieve Class	Assortment Model	KVVW01/02/03		KVVW05	
	US\$/ct/sieve class	% Cts/Sieve Class	US\$ Contribution per Sieve Class	% Cts/Sieve Class	US\$ Contribution per Sieve Class
+10.8	3130	0.43%	13	0.80%	25
10C	3000	0.13%	4	0.18%	5
9C	2830	0.20%	6	0.31%	9
8C	2650	0.24%	6	0.40%	11
7C	2450	0.40%	10	0.67%	16
6C	2200	0.60%	13	0.89%	20
5C	1950	0.94%	18	1.33%	26
4C	1580	1.61%	25	2.22%	35
3C	1160	3.54%	41	4.88%	57
10G	989	1.16%	11	1.77%	18
8G	620	6.08%	38	8.87%	55
6G	379	5.40%	20	7.05%	27
5G	309	3.88%	12	5.90%	18
4G	255	9.64%	25	7.95%	20
3G	208	11.19%	23	10.89%	23
+11	125	21.90%	27	18.61%	23
+ 9	99	17.55%	17	13.80%	14
+ 7	81	9.72%	8	8.76%	7
+ 5	65	5.23%	3	4.63%	3
-5	34	0.15%	0	0.10%	0
Totals - Average US\$/carat		100.00%	323	100.00%	411

**Table 5-6: Modelled Kareevlei assortment applied to the modelled SFDs**

## 6 Mineral Resource Classification and RPEEE

In terms of assigning a level of confidence to the Kareevlei kimberlite cluster estimates the following issues have been considered:

- The geological solid models created are based on a reasonable data density and the extrapolation has been kept to a minimum. Unfortunately, the drilling

methodologies were percussion and auger and as such no core is available to review or check the geological interpretation and/or amend the nomenclature to current standards. It should also be noted that the logging of drill chips is traditionally difficult. Nonetheless the geological models created are deemed to be a reasonable framework for the estimation of the volume, grade, density and revenue variables. The mining of the KVV02 pipe has verified the geology in a general sense but there is added complexity that was not picked up by the historic drilling, e.g. the shale unit;

- The density estimates are robust and based on good spatial sample coverage in both the KVV02 and KVV03 pipes. The densities for KVV01 and KVV05 have been extrapolated from the KVV02 pipe and are thus of lower confidence;
- The grade estimates are zonal per facies and based on the Bauer auger drilling which has produced the only representative samples (in terms of size) taken at Kareevlei. Their spatial coverage is limited to the top half of the models in KVV02 and KVV03, although grade continuity to depth (100m) is confirmed by the 10" percussion drilling in these two pipes. The grades have been amended for a re-crush (where absent) and for a 1mm square aperture bottom cut-off. Carat recoveries are relatively limited but zonal grades have been estimated with a fair degree of confidence and these grades are, to a large extent, replicated by less representative historic sampling programmes. The mining of the KVV02 pipe has produced a lower than expected grade but this is interpreted as being due to two principal reasons:
  - Mining considerable amounts of waste (dilution); and
  - A production plant process that is cutting above the strict 1mm mineral resource bottom cut-off; and
- The revenue estimate is now based on significantly larger parcels. KVV02 production is the basis of the SFD model for the KVV01, KVV02 and KVV03 pipes. The SFD for KVV05 is coarser and is based on its own bulk sample. A single assortment (US\$/carat/size class) has been modelled from the KVV02 production and the KVV01 and KVV05 bulk samples. The production revenue estimates are incompatible with the grade estimates that are at a strict 1mm bottom cut-off.

Although there have been considerable improvements in the volume and revenue models there is still considerable risk associated with the estimates as the grade is zonal in nature and the mining of KVV02 has shown that the volume models are simplistic in nature.

In terms of Reasonable Prospects of Eventual Economic Extraction (RPEEE), KVV02 production shows that the undiluted kimberlite can be mined economically. In the original 2013 mineral resource estimate very simplistic financial models were used to define the mineable resource depth. These levels for the KVV01, KVV02 and KVV03 pipes were 65m, 80m and 80m, respectively. These elevations have been retained for the KVV01 and KVV03 pipes, the KVV02 resource has been deepened by 20m (the approximate mining depth) to 100m in this latest estimate. The KVV05 pipe has been modelled for the first time to a depth of 60m, but little is known of the pipe envelope below the sub-crop level and therefore a depth of resource level of 40m has been chosen.

In summary the unmined primary kimberlite units in the KVV01 (undifferentiated kimberlite), KVV02 Diatrema and Hypabyssal kimberlite, KVV03 (Diatreme High kimberlite) and KVV05 (undifferentiated kimberlite) have been classified at an Inferred level of confidence, in accordance with the SAMREC code, to depths of 65m, 100m, 80m and 40m, respectively.

## 7 Mineral Resource Estimate

The Inferred mineral resource for the Kareevlei kimberlite cluster as at End November 2018 and at a strict 1mm bottom cut-off is summarised in Table 7-1.

At a bottom cut-off of +1mm, the Kareevlei kimberlite cluster Inferred mineral resource comprises 367,000 carats in 7.74Mt at an average grade of 4.7cpht.

Pipe	Classification	Lithology	Weathering	Volume (m3)	SG (t/m3)	Tonnes	Carats (+1mm)	Grade (cpht +1mm)
KVV01	Inferred	Kimberlite	Calcretised	23 800	2.53	60 200	3 800	6.3
			Weathered	267 900	2.52	675 200	42 900	6.4
			Fresh	314 100	2.63	826 000	50 300	6.1
		Total	605 800	2.58	1 561 400	97 000	6.2	
KVV02	Inferred	Diatreme	Calcretised	4 900	2.53	12 400	600	4.8
			Weathered	172 500	2.52	434 700	20 400	4.7
			Fresh	534 300	2.63	1 405 200	63 000	4.5
		Hypabyssal	Weathered	0	2.47	0	0	4.8
			Fresh	22 300	2.57	57 400	2 600	4.5
		Total	734 000	2.60	1 909 700	86 600	4.5	
KVV03	Inferred	Diatreme High	Calcretised	154 500	2.45	378 500	16 100	4.3
			Weathered	511 800	2.42	1 238 500	53 200	4.3
			Fresh	795 300	2.53	2 012 200	82 700	4.1
		Total	1 461 600	2.48	3 629 200	152 000	4.2	
KVV05	Inferred	Kimberlite	Calcretised	30 600	2.53	77 400	3 800	4.9
			Weathered	173 300	2.52	436 800	21 500	4.9
			Fresh	49 500	2.63	130 100	6 100	4.7
		Total	253 400	2.54	644 300	31 400	4.9	
<b>Grand Total</b>				<b>3 054 800</b>	<b>2.54</b>	<b>7 744 600</b>	<b>367 000</b>	<b>4.7</b>

**Table 7-1: Kareevlei kimberlite cluster mineral resource statement at a strict 1mm bottom cut-off as at End November 2018**

For reporting purposes the mineral resource is summarised in Table 7-2.

Kareevlei Kimberlite Cluster							
Category	Gross			Net Attributable			Operator
	Tonnes (Millions)	Grade (cpht)	Contained Carats	Tonnes (Millions)	Grade (cpht)	Contained Carats	
Mineral Reserves							
Proved	-	-	-	-	-	-	
Probable	-	-	-	-	-	-	
Subtotal	-	-	-	-	-	-	
Mineral Resources							
Measured	-	-	-	-	-	-	
Indicated	-	-	-	-	-	-	
Inferred	7.74	4.7	367,000	7.74	4.7	367,000	Kareevlei Mining (Pty) Ltd
Subtotal	7.74	4.7	367,000	7.74	4.7	367,000	Kareevlei Mining (Pty) Ltd
Total	7.74	4.7	367,000	7.74	4.7	367,000	Kareevlei Mining (Pty) Ltd

**Table 7-2: Official reporting table for the Kareevlei Kimberlite Cluster**

## 8 Reconciliation to 2013 Estimate

A summarised comparison of the End November 2018 Kareevlei mineral resource update to the previous 2013 estimate is included as. The volume has decreased by 3.3% due to mining, the modelling of the pipes and movement of kimberlite to breccia and shale which are not included in the mineral resource due to RPEEE. This decrease is offset by the inclusion of a KVV05 mineral resource and a slight deepening of the KVV02 mineral resource. The density has essentially remained constant which means that the tonnes also



decrease by 3%. On a positive front the grade has increased by 5.4% due to the removal of barren shale from the Bauer auger samples and the inclusion of KVV05 in the mineral resource. As a result the carats have increased by 2.2%.

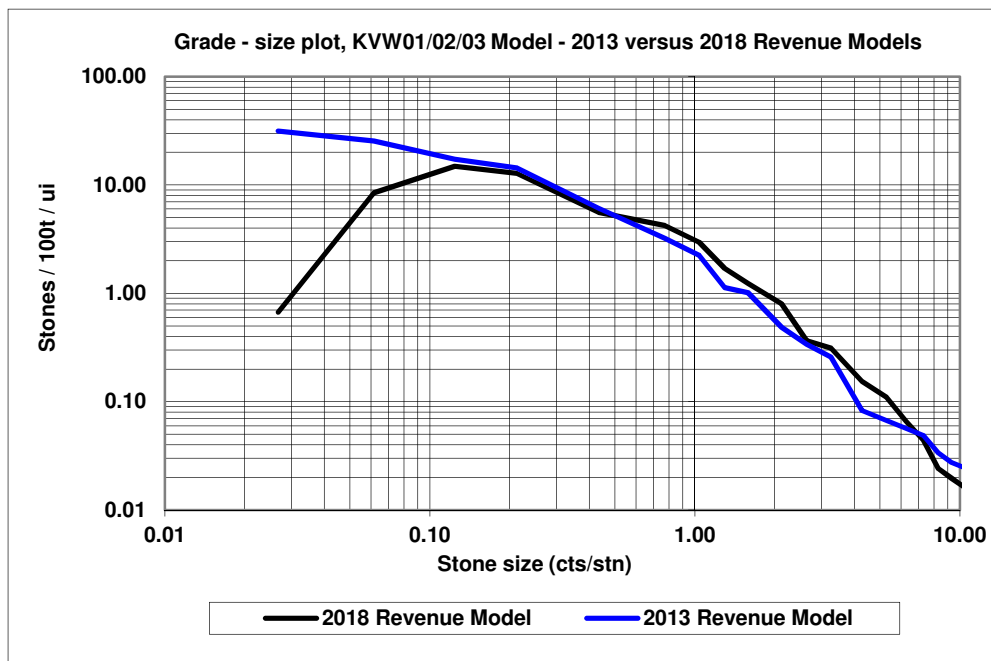
Estimate	Pipe	Classification	Volume (m <sup>3</sup> )	SG (t/m <sup>3</sup> )	Tonnes	Carats (+1mm)	Grade (cpht +1mm)
End November 2018	KVV01	Inferred	605 800	2.58	1 561 400	97 000	6.2
	KVV02		734 000	2.60	1 909 700	86 600	4.5
	KVV03		1 461 600	2.48	3 629 200	152 000	4.2
	KVV05		253 400	2.54	644 300	31 400	4.9
<b>End November 2018 Total</b>			<b>3 054 800</b>	<b>2.54</b>	<b>7 744 600</b>	<b>367 000</b>	<b>4.7</b>
2013	KVV01	Inferred	632 000	2.52	1 594 000	101 000	6.3
	KVV02		947 000	2.60	2 461 000	111 000	4.5
	KVV03		1 581 000	2.49	3 929 000	147 000	3.7
<b>2013 Total</b>			<b>3 160 000</b>	<b>2.53</b>	<b>7 984 000</b>	<b>359 000</b>	<b>4.5</b>
Difference End Nov 2018/2013			-3.3%	0.3%	-3.0%	2.2%	5.4%

**Table 8-1: Reconciliation of end November 2018 mineral resource to the 2013 estimate**

### 9 Incompatibility of Grade and Revenue Estimates

It should be noted that the end November 2018 grade estimates are quoted at a strict 1mm bottom cut-off and are based on the original Bauer auger sampling and associated sample treatment. The 2018 revenue estimates are, however, based on production and bulk sampling through the current production plant whereas the 2013 revenue estimate (like the grades) were based on the Bauer sampling data. The two revenue models are compared on a grade size plot (Figure 9-1) which clearly shows the reduced fine diamond recovery in the lowest sieve classes. Differences could be related to:

- Changing geology and/or SFD;
- Breakage in the original Bauer auger samples; and
- The difference between the efficiency of the original sampling plant and the current production plant.



**Figure 9-1: Grade size plot comparing the KVV01/02/03 revenue models for the 2013 and End November 2018 estimates.**



The differences in the SFDs will result in the End November 2018 production based revenue having a higher average US\$/carat value (partially responsible for the increase in KVVW01/02/03 revenue from US\$183/carat in 2013 to US\$323/carat in End November 2018) and a lower recoverable production grade because some fine diamonds are not being recovered. An approximate factor of 0.8 can be calculated to address the grade discrepancy and can be applied to the resource grades to derive an expected production grade for the various units.

Importantly, care should be taken when quoting the mineral resource grade estimates and the revenue values in tandem as they may be incompatible and could be misleading.



Estimate by:

A handwritten signature in blue ink that reads 'Andy Grills'.

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Dr J.A. Grills (Pr. Sci. Nat.)  
Director & Principal Mineral Resource Analyst (Z\*)

Andy Grills holds a BSc Honours degree in Geology and a PhD in Geology as well as a Diploma in Advanced Geostatistics from the Ecole des Mines de Paris. He has been directly involved in the estimation and classification of mineralised placer deposits for the last 30 years and diamond deposits specifically for the last 22 years. Andy has worked at Namaqualand Mines as Geologist in charge of the production service and contiguous evaluation for a 7 year period from 1995-2002. He is a member of the Geostatistical Society of South Africa and is registered as a Geological Scientist with the South African Council for Natural Scientific Professions (Registration No. 400426/04). Andy Grills is currently a director of Z Star Mineral Resource Consultants (Pty) Ltd and qualifies as a competent person as defined in the "South African Code for Reporting of Mineral Resources and Ore Reserves" (SAMREC).

3D Geology and Volume Model by:

A handwritten signature in black ink that reads 'C Lohrentz'.

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C Lohrentz (Pr. Sci. Nat.)  
Senior Mineral Resource Analyst (Z\*)

Cuan Lohrentz holds a BSc in Geology and Physics and a BSc Hons in Geology from the Nelson Mandela Metropolitan University, graduating in 2007. After completing his formal education he joined Bloy Resource Evaluation as an evaluation geologist. In 2012 he joined Z Star Mineral Resource Consultants as a Mineral Resource Analyst. He has received exposure to and conducted mineral resource estimates for many Southern African base metals and African gold deposits as well as numerous primary and secondary diamond deposits. He is experienced in geological modelling, mineral resource estimation and classification and has extensive Datamine Studio skills. Cuan is also competent in a number of additional software packages, including Isatis, and GsLib. Cuan is registered as a Professional Natural Scientist with the South African Council for Natural Scientific Professions (Registration No. 40224/12). He is currently employed by Z Star Mineral Resource Consultants (Pty) Ltd and qualifies as a competent person as defined in the "South African Code for Reporting of Mineral Resources and Ore Reserves" (SAMREC).

## 10 Glossary of Terms

Auger	A drilling methodology that incorporates a helical drilling tool to remove sample material.
Breccia	A rock type composed of sharp angled fragments embedded in a fine-grained matrix.
Bromoform	A heavy liquid that can be used to separate diamonds from concentrate.
Calcrete	A calcium-rich hardened layer formed as a result of climatic fluctuations in arid and semi-arid regions.
Carat	A measure of diamond mass that is equal to 0.2g.
Concentrate	The residual product of heavy particles separated by a density media separation (DMS) process.
cpht	A measure of diamond grade in carats per hundred tonnes.
Craton	Portions of the old continental crust (>2.5billion years old) that host the vast majority of the economically viable diamondiferous kimberlite pipes.
c/m <sup>3</sup>	A measure of diamond grade in carats per metre cubed.
Datamine™	A brand of software that facilitates the modelling of geological deposits in three dimensions.
Diatreme	A rock type characterised by fragmented volcanoclastic kimberlite and xenoliths ripped from margins of the vent on the magmas rise to the surface through the earth's crust.
Dolomite	A term used to describe the calcium magnesium carbonate rich rock, dolostone.
DMS	A machine that utilises a dense media in a cyclone to separate heavier concentrate from lighter particles.
Expected Production Grade	The grade recovered by the production plant when the mineral resource is mined.
Ferro-Silicon	A powdered alloy of iron and silicon that can be used as a dense media to separate heavy and light particles.
Final Recovery	The section of a diamond treatment plant that separates the diamonds from the concentrate.
Flowsort™	A brand of X-ray fluorescence machine that identifies and separates fluorescing particles, including diamonds, from the concentrate.
Grease Table	An apparatus for concentrating diamonds as they repel water and readily adhere to grease.
Hypabyssal	A rock type formed by the crystallization of hot, volatile-rich kimberlite magma that exhibits an intrusive appearance.
Kelly Bar	A drilling rod that transfers torque from the rotary drive to the drilling bit.

Kimberlite	A type of potassic volcanic rock typically found as pipe structures that may contain diamonds.
Mudstone	A fine-grained sedimentary rock.
Percussion	A drilling methodology that involves repeatedly raising and lowering a drilling bit to impact and break material to create a sample for removal from the drill hole.
Pleitz	A brand of jig that pulsates and separates heavier concentrate from lighter particles.
Pyroclastic	A term that means to form by or involve fragmentation as a result of volcanic action.
Proterozoic	A geological eon that represents the earth's past (2.5 billion to 570 million years ago).
RPEEE	Reasonable prospects of eventual economic extraction: a term used in the SAMREC code to test whether a mineral resource exists and can be declared.
SAMREC	The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves.
Scubber	A portion of a diamond treatment plant that breaks down and removes fine clay material from the ore.
Shale	A rock of laminated structure formed by the consolidation of clay or argillaceous material.
SFD	Size Frequency Distribution - the cumulative frequency of particulate material above a range of specified size cut-offs.
Tracers	Particles that simulate the density of diamonds and are used to calibrate a DMS unit.
Trommel	A portion of a diamond treatment plant that screens and removes coarse particles above a specific cut-off size.
Tricone	A three-headed drilling bit.
Tuff	A type of rock consisting of consolidated volcanic ash ejected from vents during a volcanic eruption.
t/m <sup>3</sup>	A measure of density in tonnes per metre cubed.
Xenolith	A rock fragment foreign to the igneous mass in which it occurs.