



**Petra**Diamonds



## **Cullinan – The World's Most Celebrated Diamond Mine**

15 October 2013



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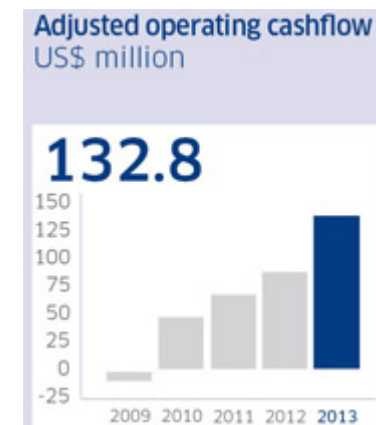
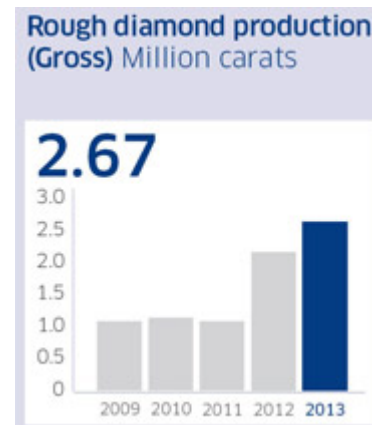
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- **Mid-tier diamond producer** (LSE:PDL; FTSE 250)
- **Quality management team** delivering strong growth
- **Major resource base** of +300m carats
- **Diversified portfolio** of producing mines & exploration
- **On track** for 5 Mctpa\* / c.US\$1bn\* revenue by FY 2019
- **Sustainability** at heart of Petra
- **Pure play** exposure to late cycle diamonds




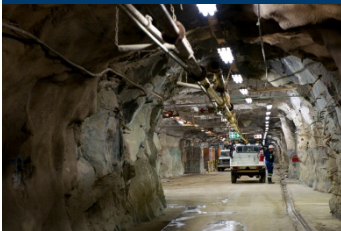



Building a world-class diamond group

\* FY 2019 figures are management estimates calculated using a 4% real price increase



# An Exceptional Growth Path

Petra has acquired five non-core diamond mines from De Beers:

July 2007	July 2008	February 2009	May 2010	September 2011
Koffiefontein	Cullinan	Williamson	Kimberley UG	Finsch
				
70% Petra <sup>1,2</sup> ; 30% BEE	74% Petra <sup>1</sup> ; 26% BEE	75% Petra; 25% Government of Tanzania	76% Petra <sup>1</sup> ; 24% BEE	76% Petra <sup>1</sup> ; 24% BEE
Sub Level & Block Cave	Block Cave	Open Pit	Block Cave	Sub Level & Block Cave

## The Petra approach:

- Focus on efficiencies and simplification
- Utilise in-house capabilities and share services across mines
- Focus on 'value' as opposed to 'volume' production
- Maximise rough diamond prices through competitive tender sales system

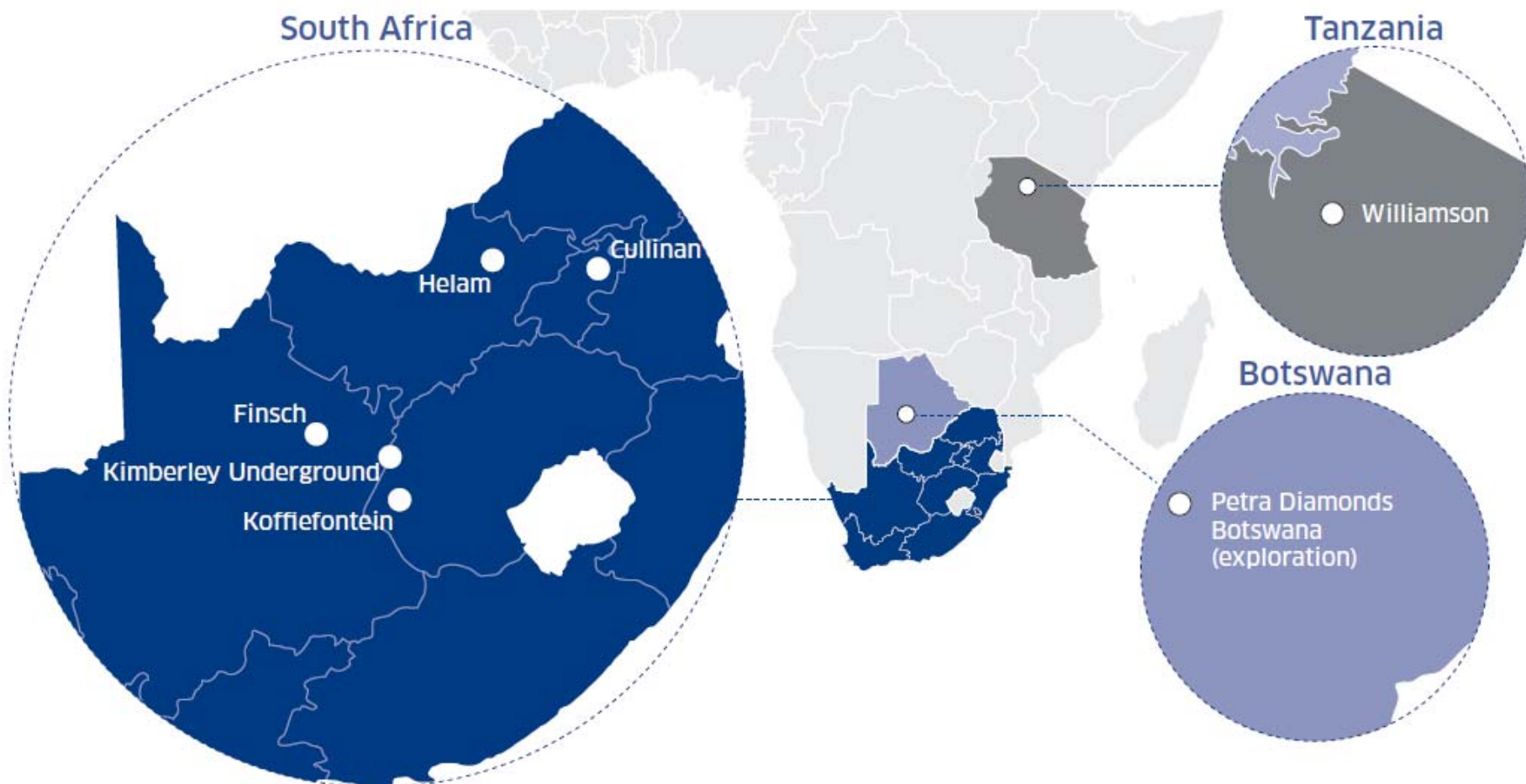
(1) Other than the percentage interests above, Petra has an interest in Sedibeng Mining (Pty) Ltd, one of its BEE partners – refer document 'Effective Interest in Mines: [www.petradiamonds.com/investors/analysts/analyst-guidance](http://www.petradiamonds.com/investors/analysts/analyst-guidance)

(2) Petra holds a further 4% effective interest in the Koffiefontein mine through its 13.33% interest in Re Teng Diamonds (Pty) Ltd, the BEE partner at the mine



# Focus on Africa

- Africa produces ca. 60% of the world's diamonds by value
- Multi-mine portfolio provides flexibility in terms of operational performance





# CULLINAN OVERVIEW



# A Unique Heritage

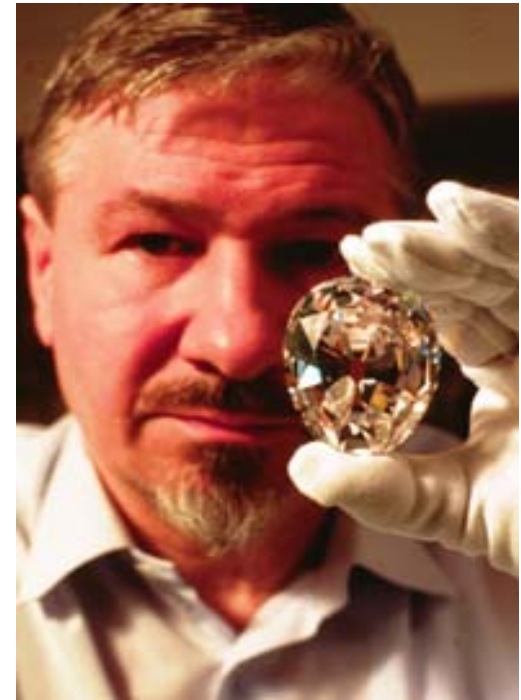
- Source of many of the most famous diamonds
- Source of “the Cullinan”, the world’s largest gem diamond (3,106 carats)
- Has produced a quarter of all the world’s diamonds of +400 carats; >125 stones of +200 carats; 745 stones of +100 carats
- World’s most important source of truly rare and highly prized blue diamonds
- One of the world’s largest diamond resources by in-situ value – 200.8 Mcts (incl. 17.0 Mcts tailings)
- Petra ramping up production from ca. 1 Mctpa to ca. 2.2 Mctpa by FY 2019 (2 Mctpa ROM & 0.2 Mctpa tailings)
- Substantial expansion capital programme in progress, mainly related to C-Cut Phase 1
- Current life of mine plan of 17 years (actual life of +50 years)





# Cullinan – Writing the History of Diamonds

The Cullinan – 3,106 carats rough  
Largest gem diamond ever discovered



Also source of the largest polished diamonds in the world, incl. The Great Star of Africa (530 carats)



# Cullinan – Iconic Gems



**The Golden Jubilee**  
755.50ct rough,  
545.65ct polished  
1986



**The Cullinan  
Heritage**  
507.55 carats rough  
2009

**The Niarchos**  
426.50ct rough  
128.25ct polished  
1954



**The Centenary**  
599.10ct rough,  
273.85ct polished  
1986

**The Premier Rose**  
353.90 ct rough  
137.02 polished  
1978



**The Safia**  
338.46ct rough,  
90.97ct polished  
1990's



**The Blue Heart**  
30.82ct polished  
1909

**The Taylor Burton**  
240.80ct rough,  
69.42ct polished  
1966





# World-class Diamonds Recovered by Petra

- The 507.5 carat Cullinan Heritage – sold for **US\$35.5m** (highest price on record for a rough stone) in February 2009
- A 25.5 carat exceptional blue recovered in April and sold in May 2013 for **US\$16.9m (US\$663k per carat)** (could be world record per carat value for rough)
- The Star of Josephine, a 26.6 carat rough blue diamond cut and polished by Petra to 7.0 carats – sold on auction for **US\$9.4m (US\$1.349m per carat)** in May 2009
- A 39.9 carat rough blue diamond – sold for **US\$8.8m** in 2008
- 4.8 carat blue diamond – sold for **US\$1.45m**, or **+US\$300k per carat** in 2012
- In FY 2013, 9 diamonds sold for **+US1m** each



*The Cullinan Heritage diamond – a 507 carat white diamond recovered at Cullinan in September 2009*



*The 25.5 carat exceptional blue diamond sold in May 2013*

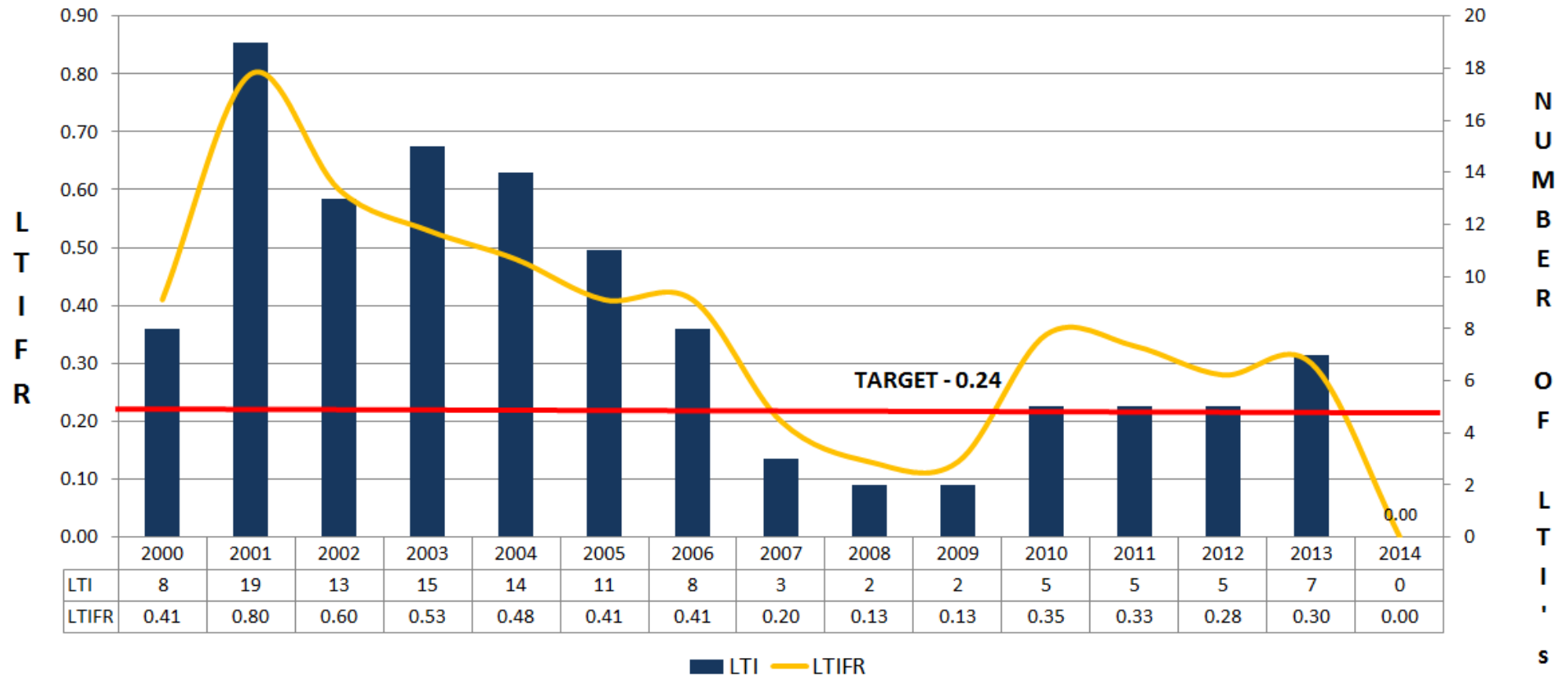


*The 'Star of Josephine' – fancy vivid blue and internally flawless diamond, being the top rating for a blue diamond*



# SHE Overview

LTI AND LTIFR COMPARISON



- Cullinan maintains the highest standards and is:
  - ISO14001 certified
  - OHSAS18001 certified
  - ISO9001 certified



# Corporate Social Investment

- Cullinan plays an active and supportive role in the local community
- The mine contributes to a wide number of community projects – below are just a few examples:

*SMME Support and Skills Department*

*Ikwezi Agricultural Hub*

*Cullinan Sports Centre*

*Imfundiso Jewellery School*

*Refilwe Orphan Care Project*

*Cullinan Field Band*

*Local NGOs*

*Tshepong Disability Centre*

*Chokoe Primary School*



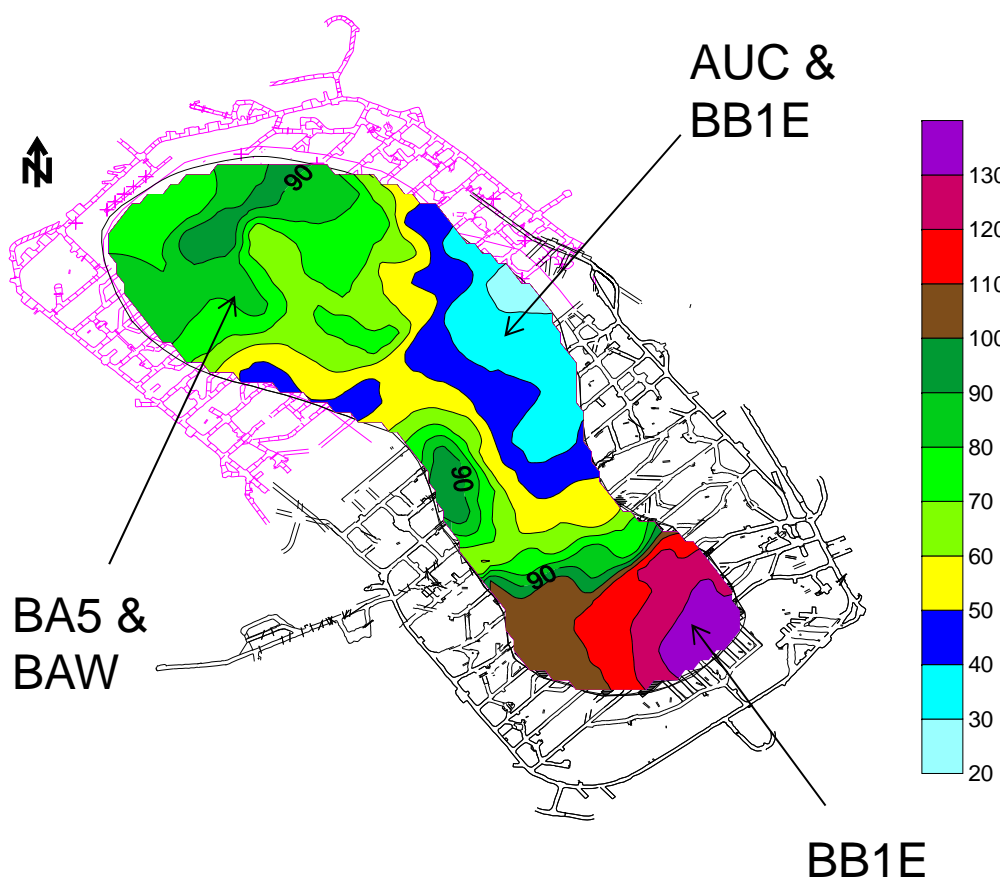


# MINING OVERVIEW

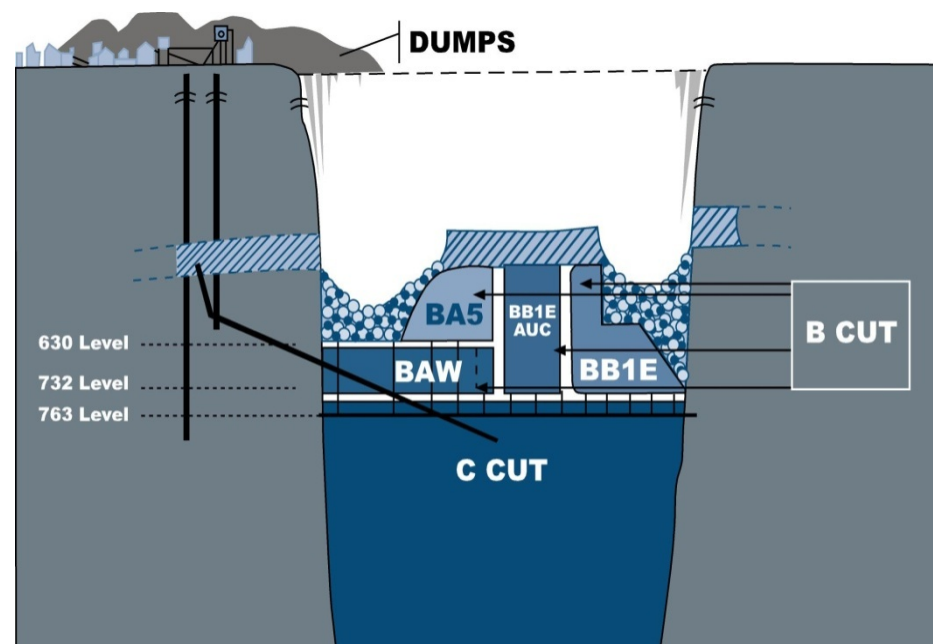


# Grade Distribution & Underground Schematic

Kimberlite in-situ grade (cpht) distribution



Schematic showing Cullinan mine blocks



Petra is currently mining the BB1E, BA5 and AUC blocks – development work moving into the higher grade BAW and AUC South areas



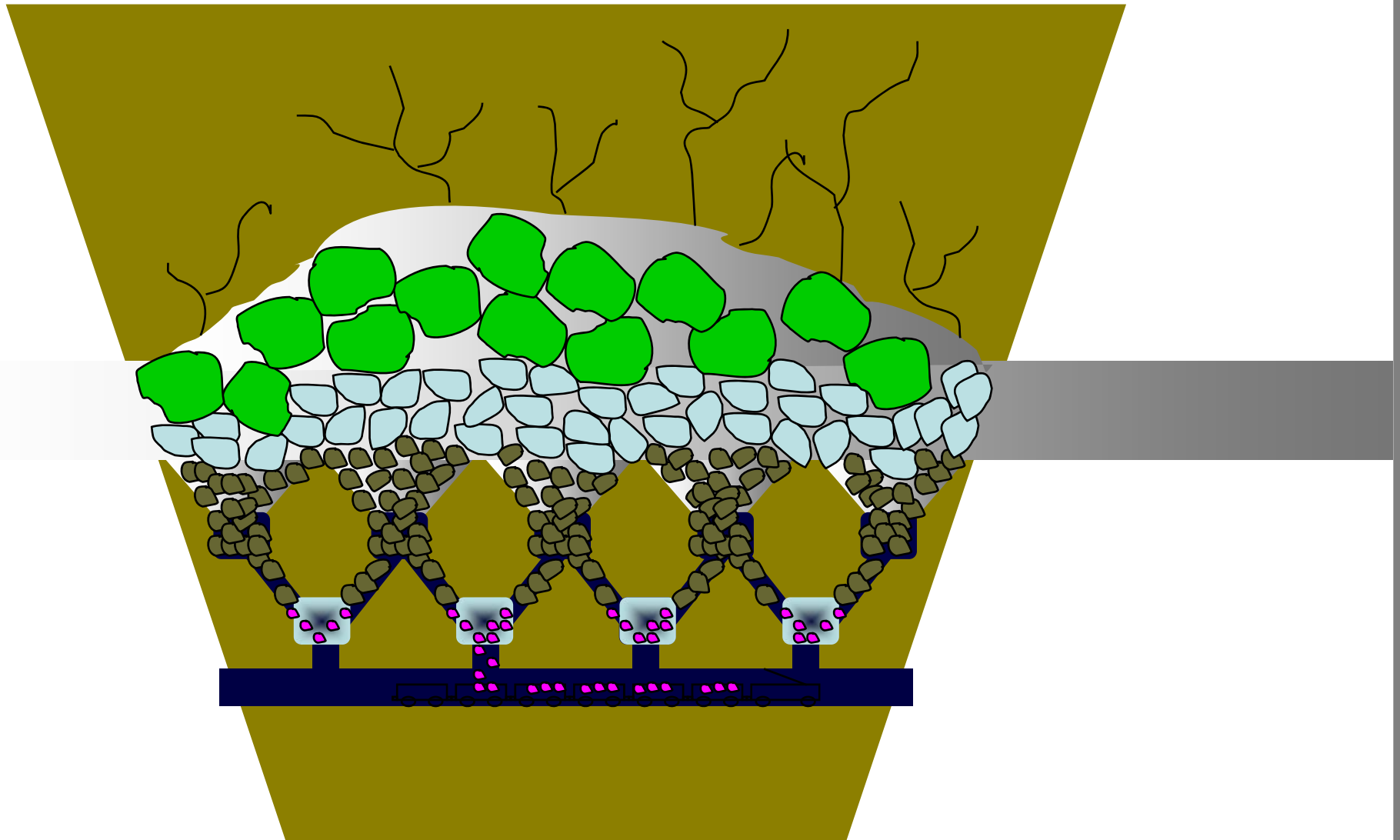
# Major Diamond Resource

Category	Gross		
	Tonnes (millions)	Grade (cpht)	Contained Diamonds (Mcts)
<b>Reserves</b>			
Proved	-	-	-
Probable	63.2	41.8	26.4
<b>Sub-total</b>	<b>63.2</b>	<b>41.8</b>	<b>26.4</b>
<b>Resources</b>			
Measured	-	-	-
Indicated	260.3	70.6	183.7
Inferred	170.0	10.0	17.1
<b>Sub-total</b>	<b>430.2</b>	<b>46.7</b>	<b>200.8</b>

- Resource bottom cut-off: 1mm
- Reserve bottom cut off: 1mm
- B-Cut resource tonnes and grade are based on block cave depletion modelling and include external waste.
- C-Cut Resource stated as in-situ
- Reserve carats and grades are factorised as per the following resource to reserve liberation factors: "Brown" kimberlite 75.8%, "Grey" kimberlite 71.4%, and Hypabyssal kimberlite 71.8%
- Changes in Reserve and Resource figures due to mining depletions and PCBC modelling for the following mining areas: BB1E, AUC, AUC North, BA5, BA West Phase 1 and C-Cut Phase 1).

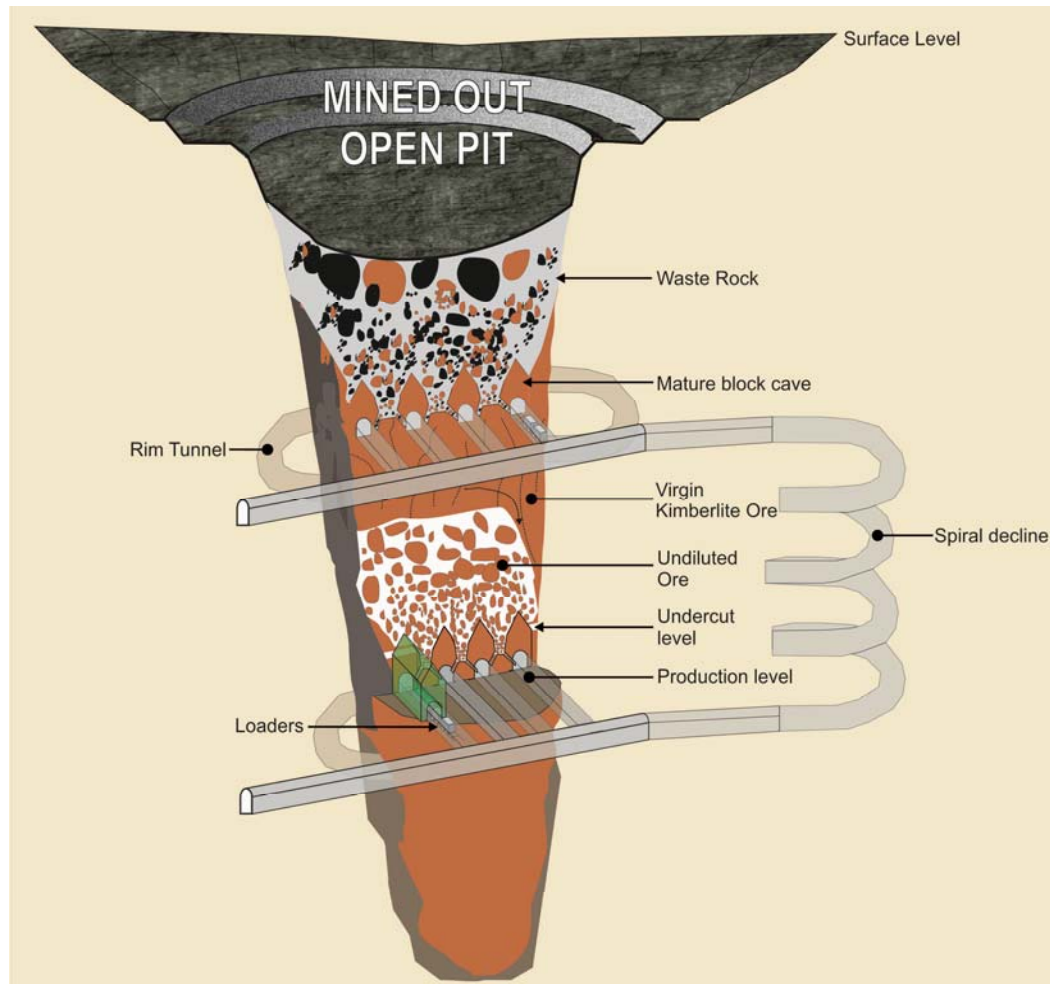


# Block Caving Schematic





# Moving into Undiluted Ore



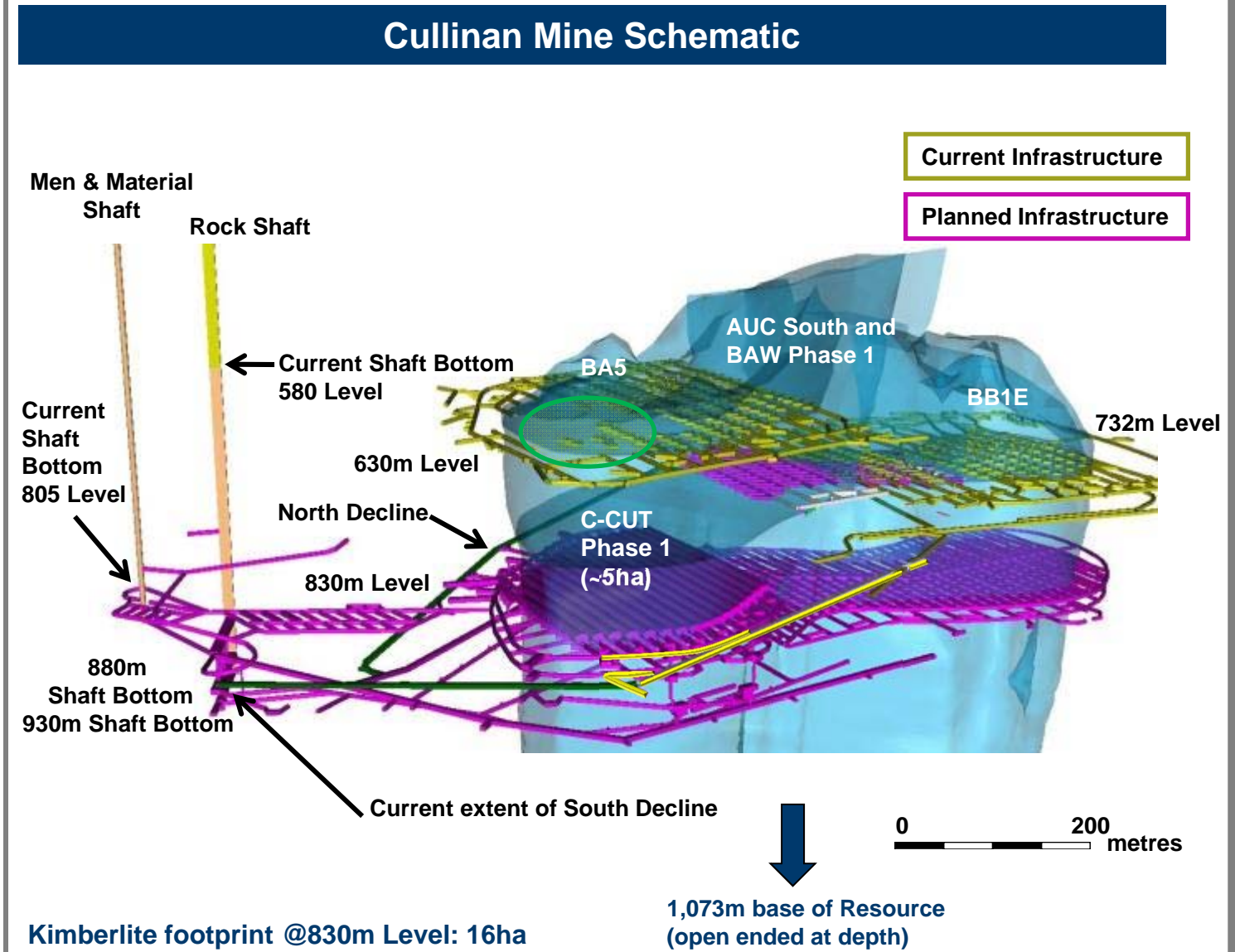
- Caving is a safe and proven mechanised mining method; provides access to higher volumes of ore than other methods
- Current underground mining taking place in diluted, mature caves nearing end of lives
- Expansion programmes to take next 'cut' by deepening and establishing new block/sub level caves in undiluted kimberlite
- Grades expected to rise significantly, increasing margin per tonne mined:
  - *Finsch* c. 34 cpht to c. 56 cpht
  - *Cullinan* c. 31 cpht to c. 50 cpht
- Will reduce wear and tear on processing systems (waste rock is harder and more abrasive than kimberlite)



# Expansion Plan – Overview

**Expansion Plan – to take production to c. 2.2 Mctpa by FY 2019 (2.0 Mctpa ROM & 0.2 Mctpa tailings)**

- Commenced rehabilitation of BA5 areas at 645m to create access to undiluted ore – **FY 2013**
- Development of declines, access tunnels and shaft deepening on track – **FY 2013**
- Tailings ramp up to steady state 2.7 Mtpa – **FY 2014**
- New production levels to be established at 839m and shaft to 930m to be commissioned – end **FY 2016**
- 880m ore-handling system, allowing for future ramp-ups to utilise full C-Cut footprint (16ha vs current 5ha) – end **FY 2016**
- Initial production from new C-Cut cave – **FY 2016**
- Upgrading and streamlining of plant facilities in order to handle increased tonnes – from **FY 2015** to **FY 2019**





# Expansion Plan – Current Status

- Decline to access new production level has passed 839m level; breakaway for 830m undercut level has been established
- Shaft deepening (and related infrastructure) to 930m in progress using contractor Murray & Roberts
- Development of waste tunnels in progress and over 6,000 metres developed to date
- Refinements to allow for increased flexibility and to increase capacity of mine infrastructure
  - Upgrading of support specifications to cater for anticipated longer life of the block cave
  - Inclusion of batching plant to deliver concrete to shaft and production infrastructure, freeing up shaft time and reducing potential disruptions
  - Optimisation of 880mL ore-handling systems allowing for potential future ramp up
- First development on contact openings planned for FY 2014





# Expansion Plan – Current Status





# PLANT OVERVIEW



# An Aerial Perspective

- Existing plant footprint ca. 27ha, including 13.5km of conveyor belts
- Ongoing objective to simplify and streamline processing route

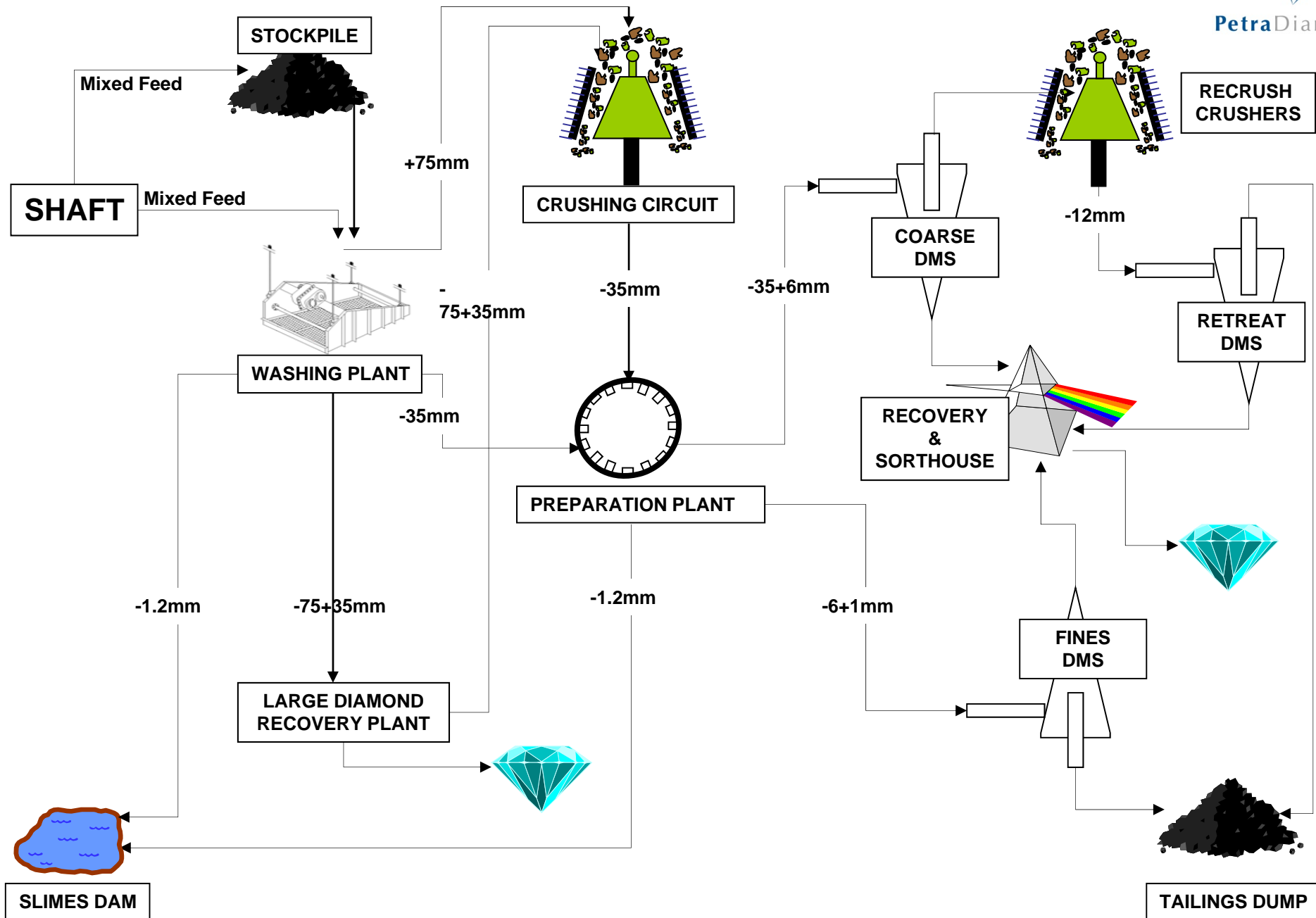




# Treatment Plant Flow Diagram



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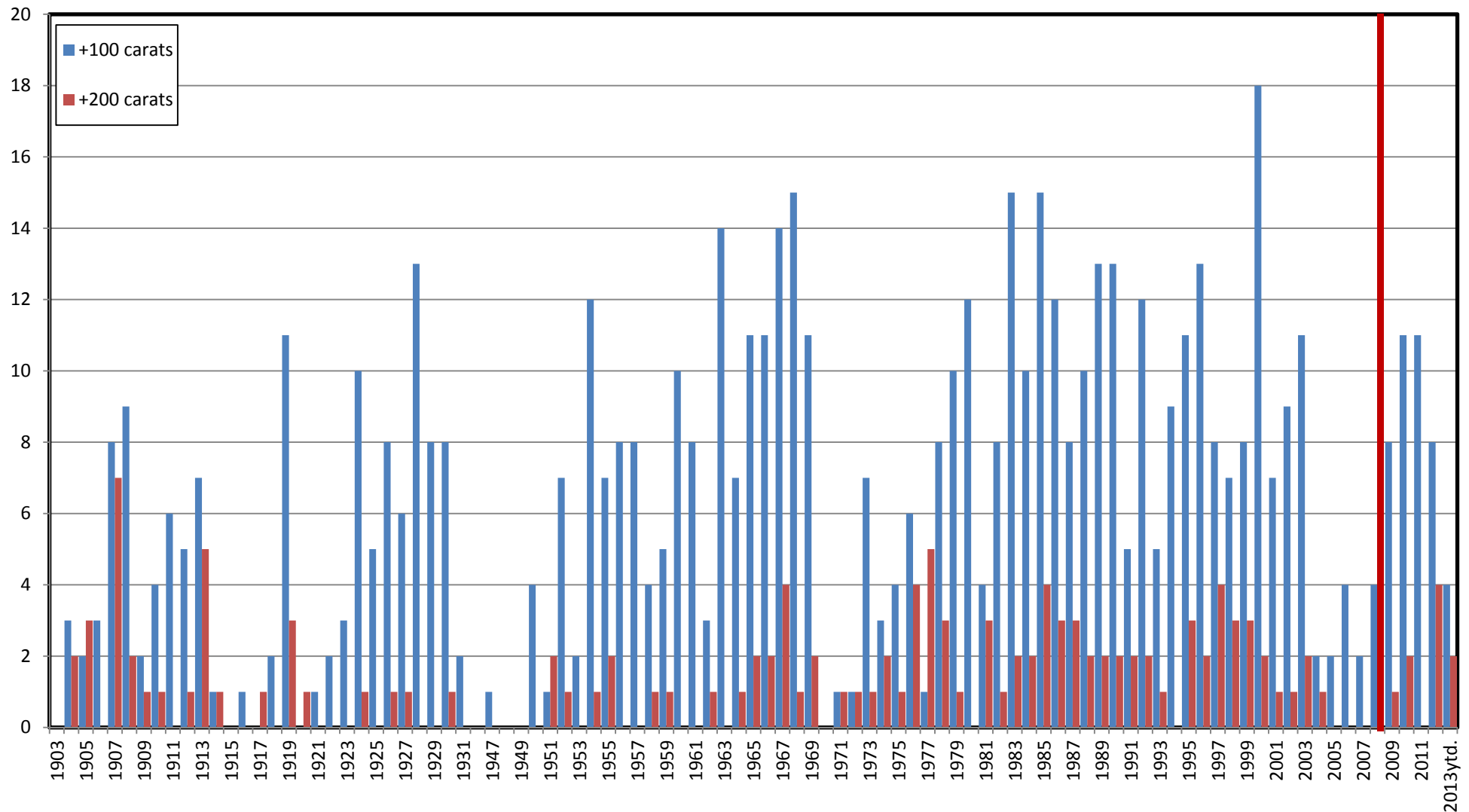




# Consistent Production Of Specials

+100 +200 carat stones recovered at Cullinan Diamond Mine

Date of acquisition





# Major Tailings Project

Resource of 165 Mt (17.0 million carats)

- Construction and commissioning of the new tailings treatment facility has been completed
- The re-crush extension is under construction; this will serve to liberate the last diamonds from the tailings oversize material
- Tailings treatment to increase from 1.5 Mtpa in FY 2013 to steady state 2.7 Mtpa in FY 2014 at a grade of 5-6 cpht
- Resources sufficient for 40 years at this level





# OUTLOOK



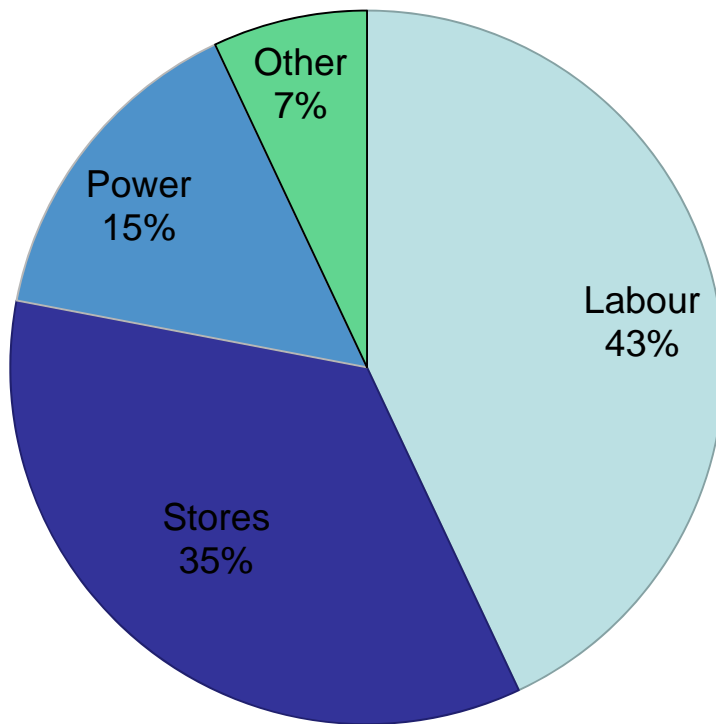
# FY 2013 Results

	Unit	FY 2013 A	FY 2012 A
<b><u>ROM Production</u></b>			
Tonnes treated	Tonnes	2,595,004	2,504,137
Diamonds produced	Carats	795,370	833,285
Grade	Cpht	30.7	33.3
<b><u>Tailings Production</u></b>			
Tonnes treated	Tonnes	1,485,889	668,534
Diamonds produced	Carats	73,605	34,495
Grade	Cpht	5.0	5.2
<b><u>Total Production</u></b>			
Tonnes treated	Tonnes	4,080,893	3,172,671
Diamonds produced	Carats	868,975	867,780
<b><u>Sales</u></b>			
Revenue	US\$M	133.0	112.0
Diamonds sold	Carats	816,611	876,384
Average price per carat	US\$	163	128
<b><u>Costs</u></b>			
On-mine cash cost per tonne treated	ZAR	158	177
<b><u>Capex</u></b>			
Expansion Capex	US\$M	64.0	42.4
Sustaining Capex	US\$M	17.2	7.5
Borrowing Costs Capitalised	US\$M	7.8	4.5

- Good throughput performance – increase in ROM and tailings tonnages
- FY 2013 ROM grade lower due to increased dilution of current mining areas
- FY 2013 average value per carat excluding the 25.5ct blue diamond sold for US\$16.9m was US\$142
- Unit cash operating cost decreased mainly due to increased volumes of tailings throughput
- Capex increased in line with progression of development plan



# Cost Make-up And Objectives



*FY 2013 on-mine cash cost of R158 per tonne treated*

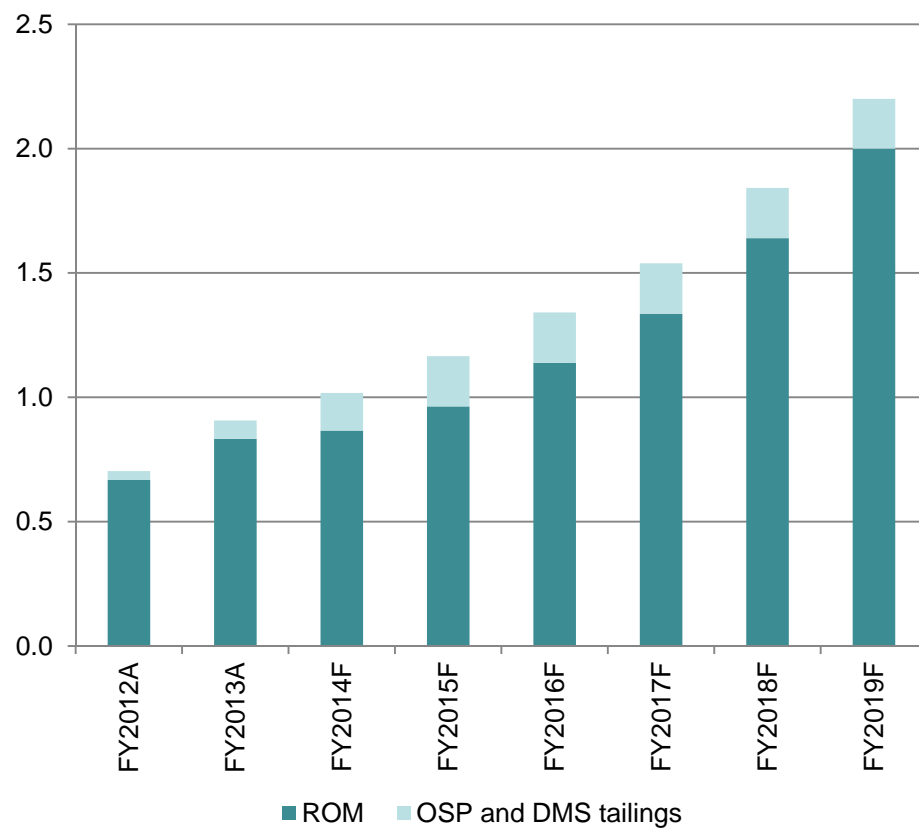
- Risk of rising electricity costs managed through efficient design of new infrastructure
- Maintenance and management of new and old infrastructure
- New designs cater for high degree of automation
- Advancement of a Group procurement strategy to yield benefits related to economies of scale



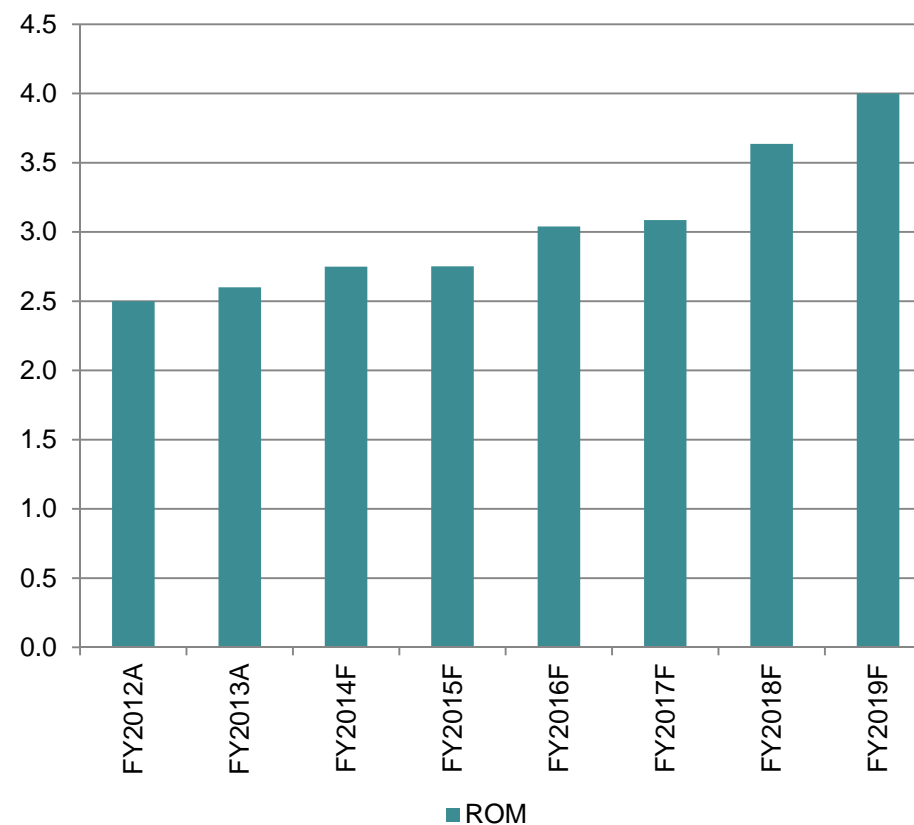
# Production Forecast

Targeting 2.2 million carats by FY 2019

## Carats (Mct)



## ROM Tonnes (Mt)





# Cullinan Outlook

- Spectacular diamonds – regular production of ‘specials’
- Major resource – world’s second largest indicated resource by in-situ value
- Improving recoveries – ongoing plant changes
- Improving grades – grade to rise from ca. 36 cpht to ca. 50 cpht when new mining block established
- Improving mining costs – Petra focus on increasing efficiencies, simplification of underground ore-handling system and streamlining of process route
- Very robust economics – positive cashflow even at depth of downturn
- Longevity – current 17 year mine plan will only exploit 21% of total resource
- Potential for future ramp ups – not currently planned but Petra readying underground infrastructure

**Strategy to grow production from 1 million to 2.2 million carats pa**





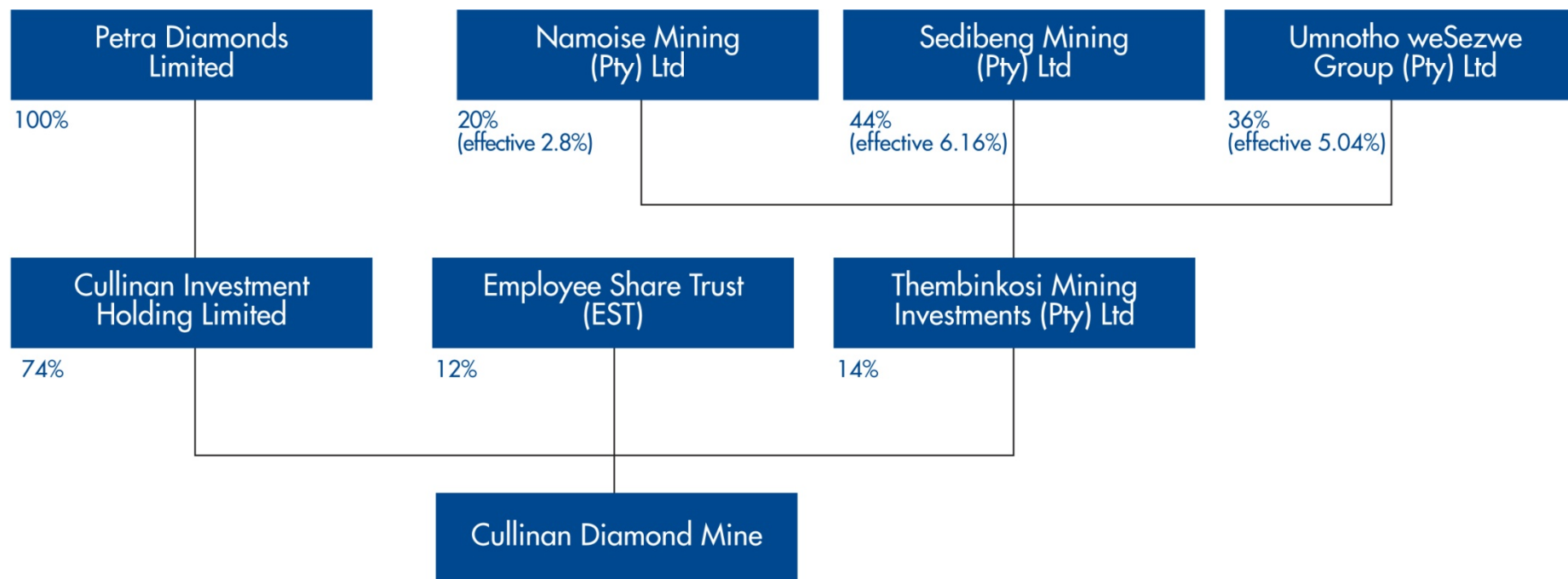
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**Appendix**



# Ownership Structure

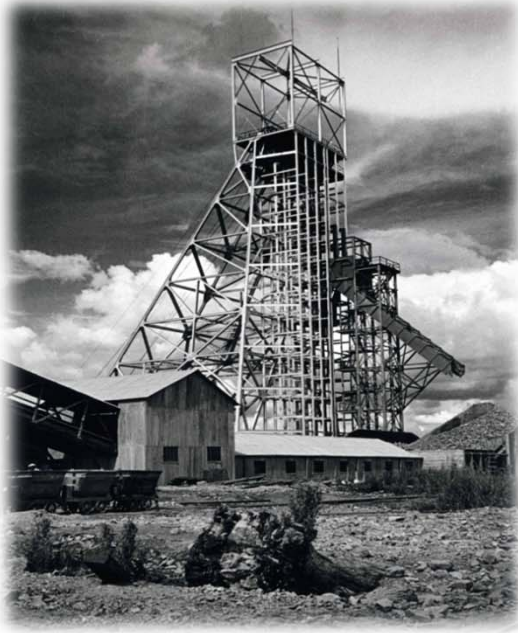


**Note:**

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# The History Of Cullinan



- 1902 Cullinan kimberlite pipe originally discovered by Sir Thomas Cullinan - at 32ha surface area, largest diamondiferous kimberlite ever found in SA
- 1903 Open pit mining commenced at 'Premier Mine' - at time of outbreak of WW1 14,000 were employed at mine
- 1930 De Beers acquired controlling interest in Premier through scheme of arrangement with Anglo American
- 1932 Mine closed due to depression and lack of market for luxury goods
- 1945 Mine reopened and pit dewatered for development of underground mine
- 1997 Premier (Transvaal) Diamond Company amalgamated into De Beers Consolidated
- 2003 Mine renamed 'Cullinan' as part of centenary celebrations
- 2008 Mine acquired by Petra Diamonds Cullinan Consortium on 16 July as a going concern – acquisition cost of R1bn – Petra had an initial effective interest of 37%
- 2009 Petra increased its interest in the mine to 74% by buying out Al Rajhi's interest



# Capex Profile

Financial Year		2013A	2014	2015	2016	2017	2018	2019
Operation								
Finsch	Expansion Capex (ZARm)	293.5	512.3	422.2	346.9	467.9	403.0	354.3
	Sustaining Capex (ZARm)	93.7	132.7	115.3	76.7	74.3	73.1	71.8
Cullinan	Expansion Capex (ZARm)	565.7	765.3	842.7	755.7	219.4	100.2	76.8
	Sustaining Capex (ZARm)	152.0	81.3	74.9	52.3	49.3	50.1	50.3
Koffiefontein	Expansion Capex (ZARm)	96.4	171.0	103.6	57.9	31.6	-	-
	Sustaining Capex (ZARm)	84.0	25.1	32.8	34.7	28.7	28.2	27.8
Kimberley	Expansion Capex (ZARm)	155.6	96.1	111.0	37.3	-	-	-
	Sustaining Capex (ZARm)	35.4	28.2	28.8	28.7	28.5	28.1	27.6
Helam	Expansion Capex (ZARm)	-	-	-	-	-	-	-
	Sustaining Capex (ZARm)	15.7	9.8	10.1	10.0	10.0	9.9	9.8
PETRA (SA Operations)	Expansion Capex (ZARm)	1 111.2	1 544.6	1 479.4	1 197.8	718.9	503.2	431.1
	Sustaining Capex (ZARm)	380.8	277.0	261.9	202.5	190.9	189.4	187.3

Williamson	Expansion Capex (USDm)	8.4	8.2	6.8	6.8	-	-	-
	Sustaining Capex (USDm)	3.3	5.9	5.8	6.0	6.2	5.0	4.9

1. All Capex numbers are stated in FY 2014 money terms (except for FY 2013 actuals).
2. Depreciation on mining assets for FY 2014 guided at ca. US\$45 million.
3. As in prior guidance, capital estimates above do not include any capitalised borrowing costs. Guidance is to assume 95% of borrowing costs are to be capitalised.





# PetraDiamonds



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