

The background of the slide is a wide-angle landscape photograph. In the foreground, there is a vast, flat, dark-colored area, possibly a dry lake bed or a frozen body of water, with some lighter patches. In the middle ground, there is a large, rugged mountain range with steep, rocky slopes. The mountains are partially covered in snow, and there are some evergreen trees on the lower slopes. The sky is a pale blue with some light, wispy clouds. The overall scene is a dramatic, natural landscape.

# ALROSA

## SITE-VISIT TO YAKUTIA

24-26 July 2019



# Event Details

Dates: 24-26 July 2019

## ALROSA representatives:

- Dmitry Byaloshitskiy
- Pavel Prytkov

## Hotel in Mirny:

AZIMUT Hotel  
11A Lenina Str.  
tel. +7 411 364 64 09

**Local time:** Moscow+6 hours (GMT+9)

**Dress code:** casual, protective clothing (e.g. rubber boots for swampy areas) for site tour to be provided on request

## Health & safety:

Medical assistance is available 24/7

Mandatory safety induction training are provided before visit to facilities

### 23 July 2019

21:15 Flight Moscow - Mirny (DME, flight 6R532)

### 24 July 2019

8:30 Arrival in Mirny

8:30-11:00 Hotel check-in, breakfast, free time

11:00-11:30 Visit to Diamond Sorting Center

12:00-13:00 Flight Mirny – Nakyn (Nyurba Division)

13:00-16:00 Visit to key facilities of Nyurba Division, lunch

16:00-17:00 Flight Nakyn - Mirny

17:30-18:30 Yakutniiproalmaz Institute (ESG discussion)

19:00 Dinner with CFO, Alexey Philippovskiy

### 25 July 2019

08:00-08:30 Breakfast

09:00-10:30 Flight Mirny – Polyarny (Udachny) – Verkne-Munskoye deposit

10:30-14:00 Visit to infrastructure of Verkhne-Munskoye deposit, lunch

14:00-15:20 Flight to the Polyarny airport, transfer to Udachny

15:20-18:00 Visit to Udachny Division and infrastructure of the town

18:30-20:30 Flight Polyarny (Udachny) – Mirny

20:30 Dinner

### 26 July 2019

6:30-8:30 Breakfast, Transfer to the Mirny airport

10:00 Flight Mirny – Moscow (DME, flight 6R597)

09:40 Arrival in Moscow



# Day 1

# Nyurba Division

24 July 2019

# Nyurba Division (GOK)

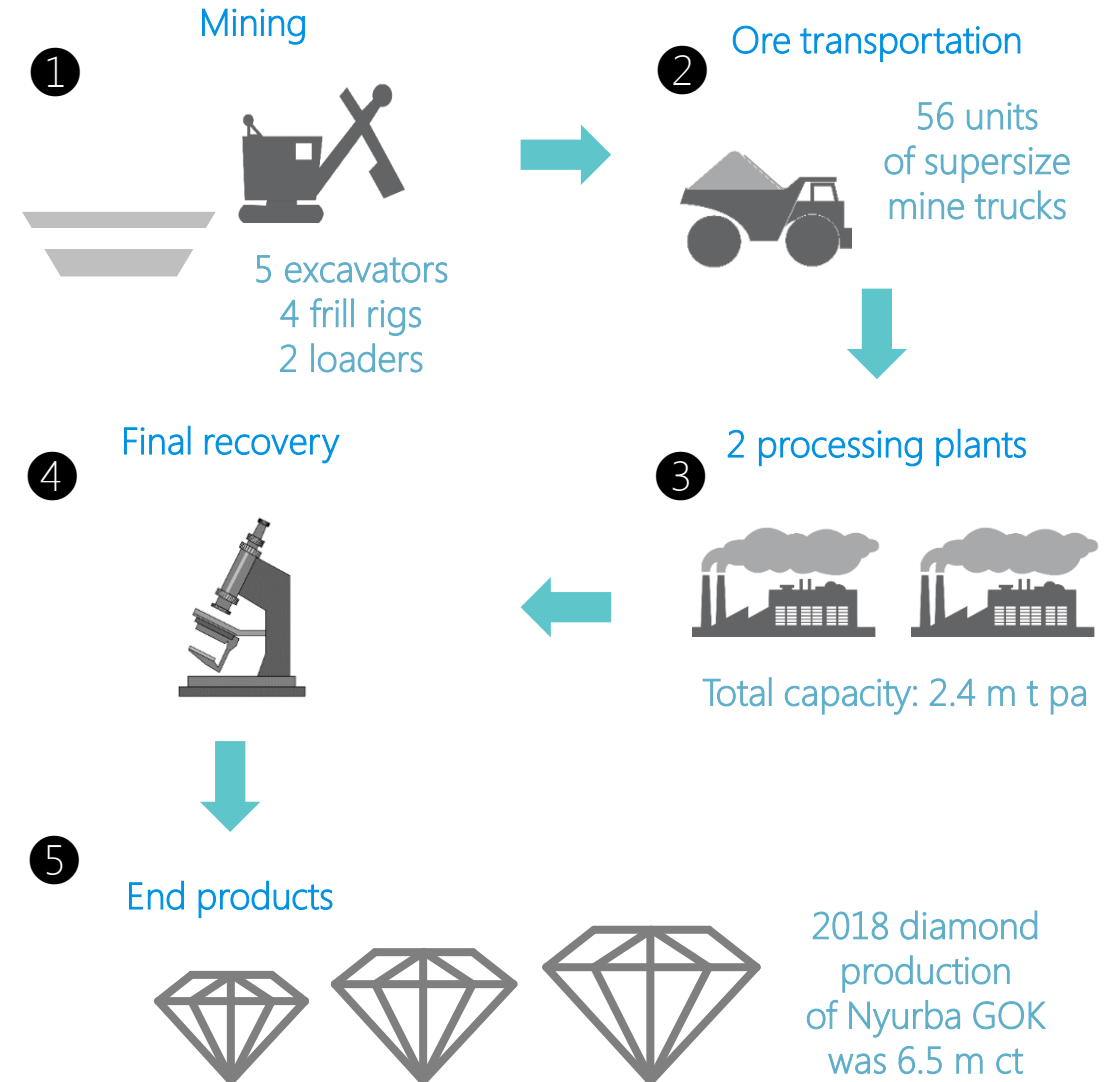
- Production facilities of Nyurba GOK are located 320 km northeast of Mirny
- Key assets:
  - Nyurbinskaya pipe (open-pit mine)
  - Botuobinskaya pipe (open-pit mine)
  - Placer deposits
- 2018 diamond production: 7.7 m ct
- Total headcount<sup>1</sup>: 1,556 employees
- Director: Anatoliy Platonov since 2018



# Production Process Scheme

## Comments

- ① **Mining:** open-pit and alluvial mining methods are used in Nyurba GOK  
**Open-pit:** rock mass is removed with advanced machinery: 5 excavators, 4 drill rigs and 2 loaders
- ② **Transportation:** extracted ore is transported to a processing plant by 56 supersize mine trucks (10 units of them have a capacity of 45 t and 46 units have a capacity 136 t)
- ③ **Processing plant** (located close to Nyurbinskaya and Botuobinskaya pipes): 5 key processing stages (see page 18)
- ④ **Final recovery** is carried out at the processing plant: at this stage, diamonds are extracted from concentrates, pre-classified and sorted
- ⑤ **End products** are packed and sent to the Company's United Selling Organization for preliminary valuation and subsequent sale

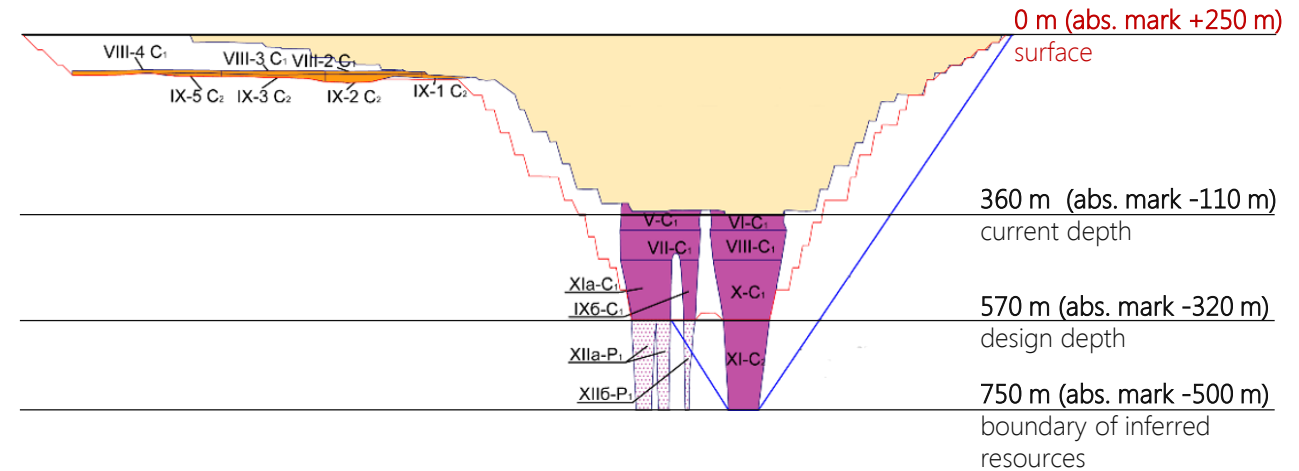


# Nyurbinskaya Pipe

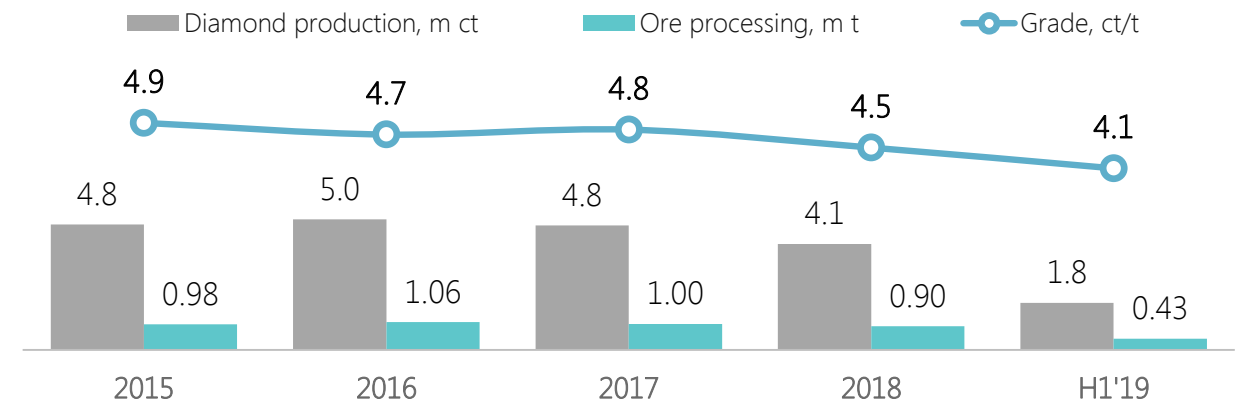
## Highlights

- Nyurbinskaya pipe is the largest pipe within the Nakynsky kimberlite field, it is characterized by high diamond grades (av. 4 ct/t)
- Mined since 2001
- ~11% of the 2018 Group's annual production
- Expected LOM: 2034
- Depth: currently 360 m (design depth – 570 m)
- Resources<sup>1</sup>:
  - Pipe – 36.3 m ct, incl. 29.4 m ct of reserves
  - Alluvial – 28.5 m ct, incl. 19.6 m ct of reserves
- 2018 operating results:
  - diamond production: 4.06 m ct
  - ore processing: 0.9 m t

## Nyurbinskaya pipe and alluvial deposits



## Operating performance (pipe)



1. In accordance with JORC report of resources and reserves of ALROSA Group as at 1 July 2018

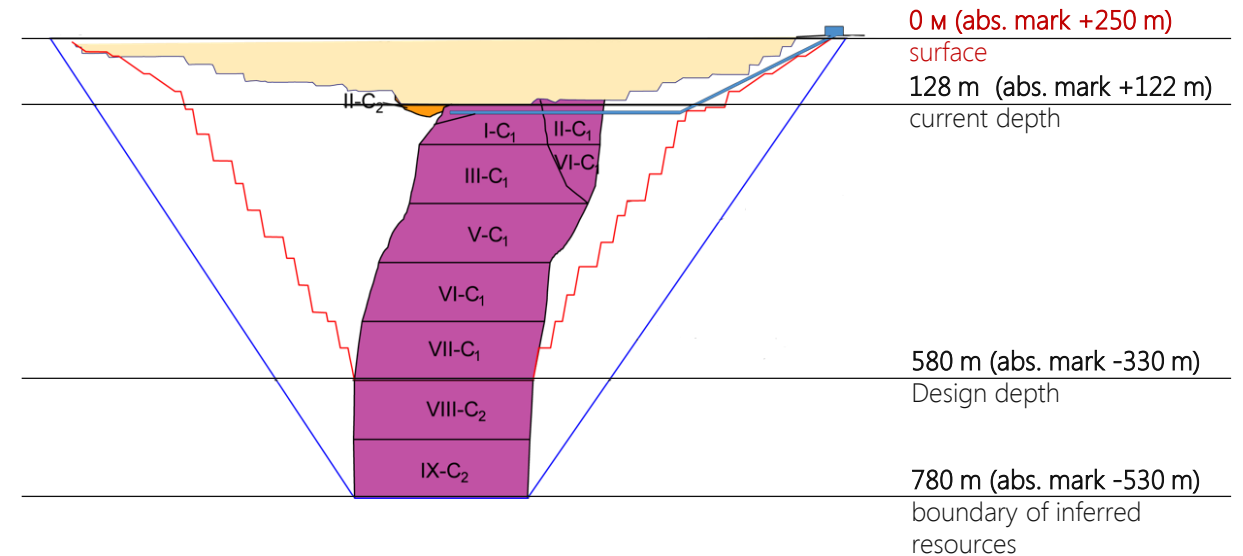
# Botuobinskaya Pipe

## Highlights

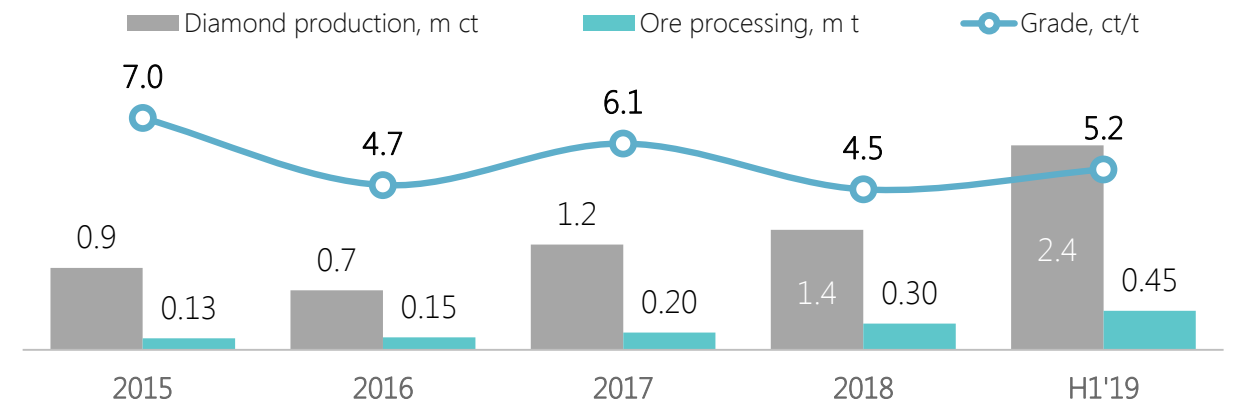
- The general geology of the area around the Botuobinskaya pipe is similar to that of the Nyurbinskaya pipe. It has an irregular shape changing from dyke shape in the southwest to a oval shape in the northeast.
- Diamond grade is high (av. 5 ct/t)
- Mined since 2013
- Expected LOM: 2039
- ~4% of the 2018 Group's annual production
- Depth: currently 128 m (design depth – 580 m)
- Resources<sup>1</sup>:
  - Pipe – 92.3 m ct, incl. 76.3 m ct of reserves
  - Alluvial – 0.2 m ct
- 2018 operating results:
  - diamond production: 1.38 m ct
  - ore processing: 0.3 m t

1. In accordance with JORC report of resources and reserves of ALROSA Group as at 1 July 2018

## Botuobinskaya pipe and alluvial deposits



## Operating performance (pipe)

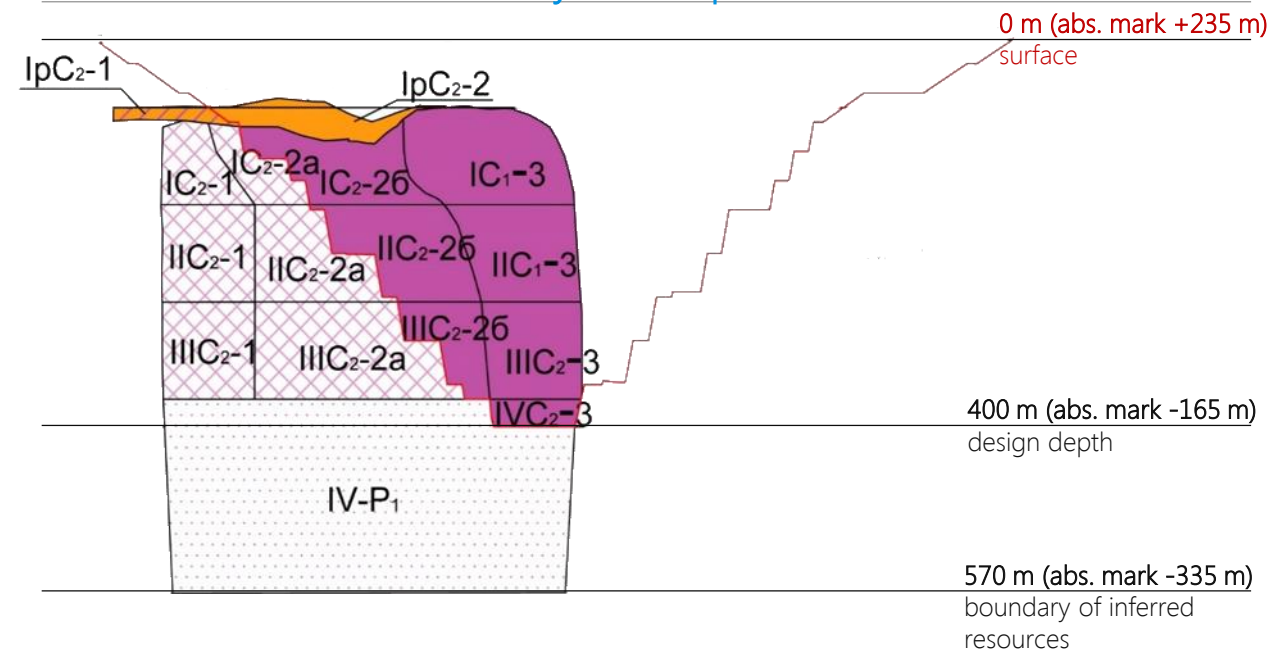


# Mayskoye Deposit

## Highlights

- Mayskoye kimberlite body is linear elongated dyke-shaped formation, varying in thickness from 15 to 40 m, which is located close to Botuobinskaya Pipe (~3 km).
- Deposit has a high av. grade of 2.4 ct/t
- The production will start in 2025, ramp up is expected in 2027
- Expected LOM: 2039
- Design depth: 400 m
- Resources<sup>1</sup>: 12.7 m ct
- Target production capability:
  - ore output – 0.3 m t pa
  - diamond output – 1.2 m ct
- Total CAPEX: RUB 5.6 bn

## Mayskoe deposit



1. In accordance with JORC report of resources and reserves of ALROSA Group as at 1 July 2018

# Operational Turnaround Program at Nyurba

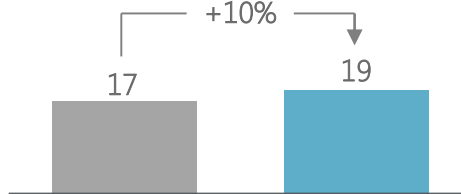
Nyurba's success can be replicated and scaled up across other divisions

## Key streams and initiatives

- Improving mine fleet dispatching processes by SIC<sup>1</sup> procedures implementation
- Optimizing OEE<sup>2</sup> by reducing non-value added operations
- Optimizing maintenance and repairs operations will lead to improved equipment availability and
- ... improved plant availability
- Increasing hourly throughput by optimizing ore blending processes

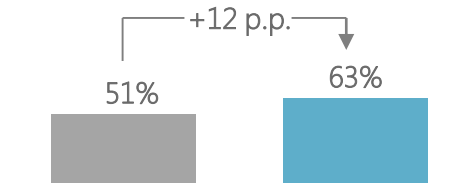
## Run of mine

m m<sup>3</sup>



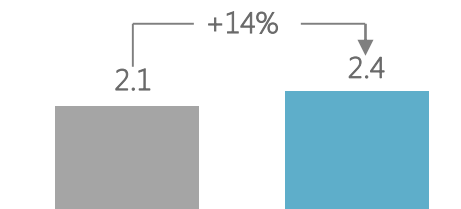
## Overall equipment efficiency

%



## Processing

mt

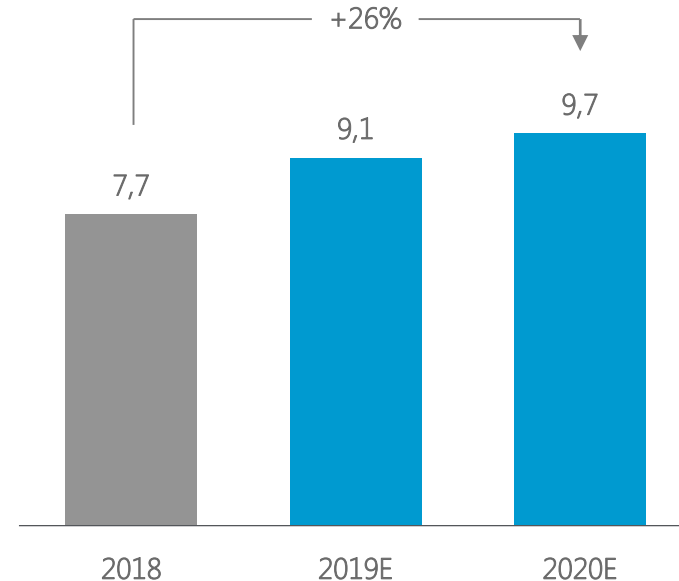


2018

2019E

## Diamond production growth

m ct



2018

2019E

2020E

Source: Company data and analysis.

1. Short interval control.

2. OEE – overall equipment efficiency.



# Day 2

# Udachny Division

25 July 2019

# Udachny Division (GOK)

- Production facilities of Udachny GOK are based in town of Udachny (population ~15K), which is located 550 km north of Mirny
- Key assets:
  - Udachnaya pipe (underground mine)
  - Verkhne-Munskoye deposit (open-pit mine)
  - Zarnitsa pipe (open-pit mine)
  - Placer deposits
- 2018 diamond production: 3.9 m ct
- Total headcount<sup>1</sup>: 4,475 employees
- Director: Roman Deniskin since 2019



Source: Company data  
1. As of 31.12.2018

# Production Process Scheme

## Comments

① **Mining:** all three types of mining methods (open-pit, underground and alluvial) are used in Udachny GOK

**Open-pit:** rock mass is removed with advanced machinery: **6 excavators**, **5 drill rigs** and **2 loaders**

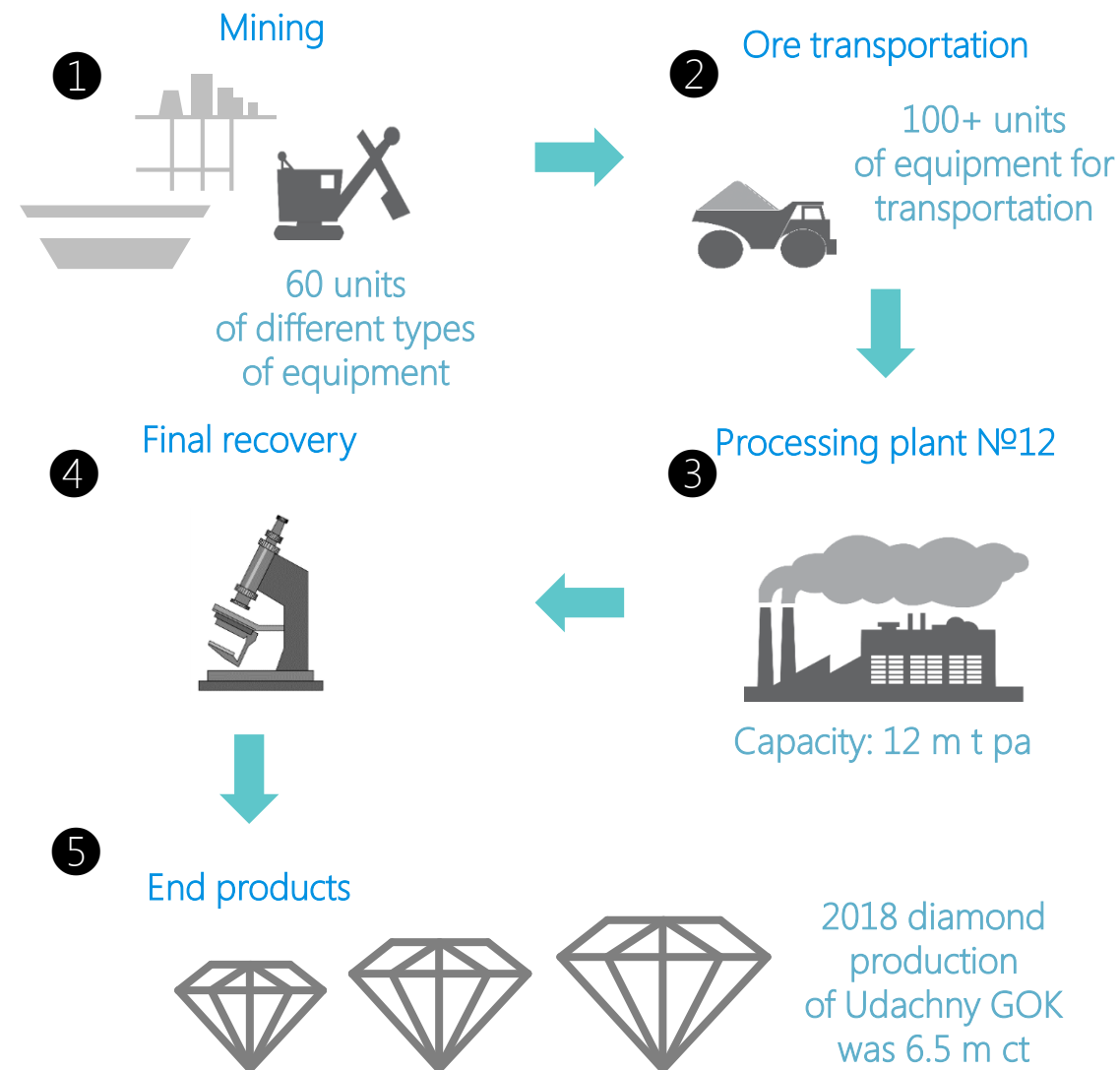
**Underground mining** (sub level caving method): mine comprised of many kilometers of shafts and horizontal mine workings; **14 underground trucks**, **20 loaders** and **15 drill rigs** are used in production process

② **Transportation:** extracted ore from open-pits and underground mine is transported to a processing plant by **24 supersize mine trucks** (with a capacity of **45** or **136 t**), ore from V. Munskeye deposit is transported by **81 road trains** (from 90 to 130 t)

③ **Processing plant** (located in Udachny town: close to Udachnaya pipe, 170 km from V.Munskeye deposit, 21 km from Zarnitsa pipe): **5 key processing stages** (see page 18)

④ **Final recovery** is carried out at the processing plant: at this stage, diamonds are extracted from concentrates, pre-classified and sorted

⑤ **End products** are packed and sent to the Company's United Selling Organization for preliminary valuation and subsequent sale

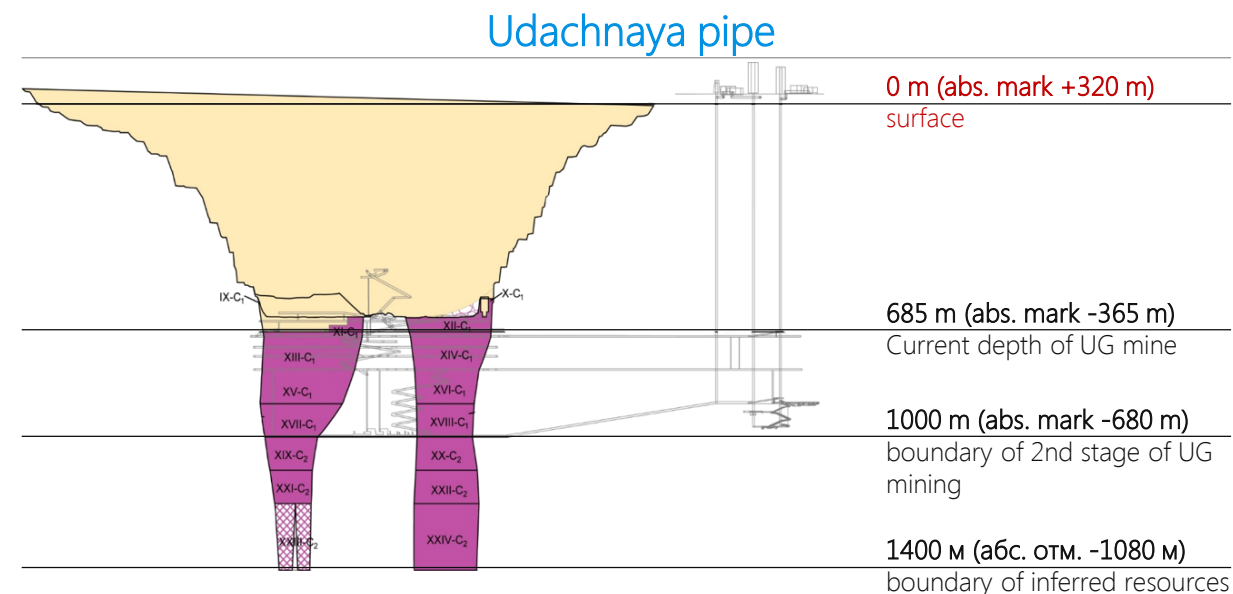


# Udachnaya Pipe

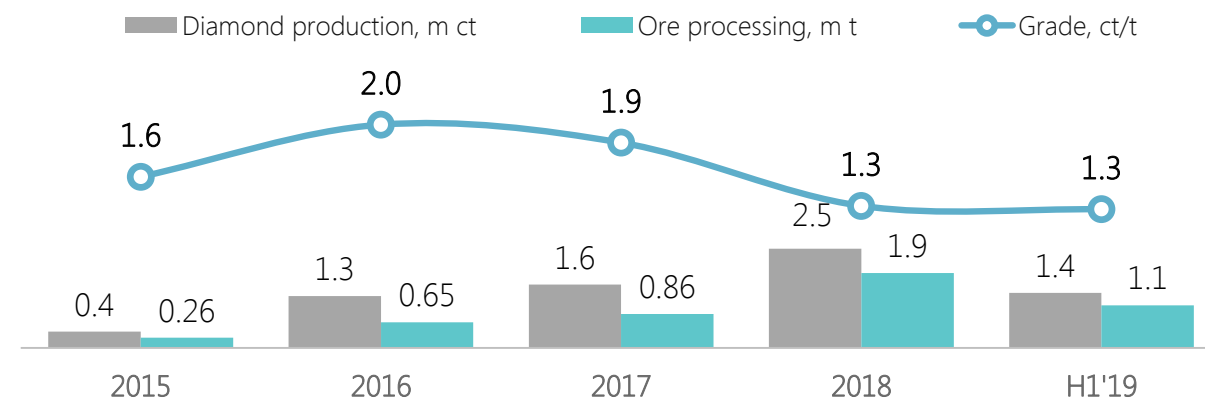
## Highlights

- Udachnaya kimberlite pipe discovered in 1955, it is one of the largest kimberlite pipes in Yaktia
- The open-pit was commissioned in 1971, at full capacity mine produced 12 m t pa, reserves in the open-pit were exhausted in 2016
- The first phase of underground mine development was completed in 2014
- ~7% of the 2018 Group's annual production
- **Expected LOM:** 2037 (1<sup>st</sup> stage), 2069 (2<sup>nd</sup> stage)
- Current depth of UG mine – **685 m**
- **Resources<sup>1</sup>:** 207.6 m ct, incl. 128.5 m ct of reserves
- **2018 operating results:**
  - diamond production: 2.53 m ct
  - ore processing: 1.91 m t
  - av. grade: 1.32 ct/t

1. In accordance with JORC report of resources and reserves of ALROSA Group as at 1 July 2018



## Operating performance (UG mine)

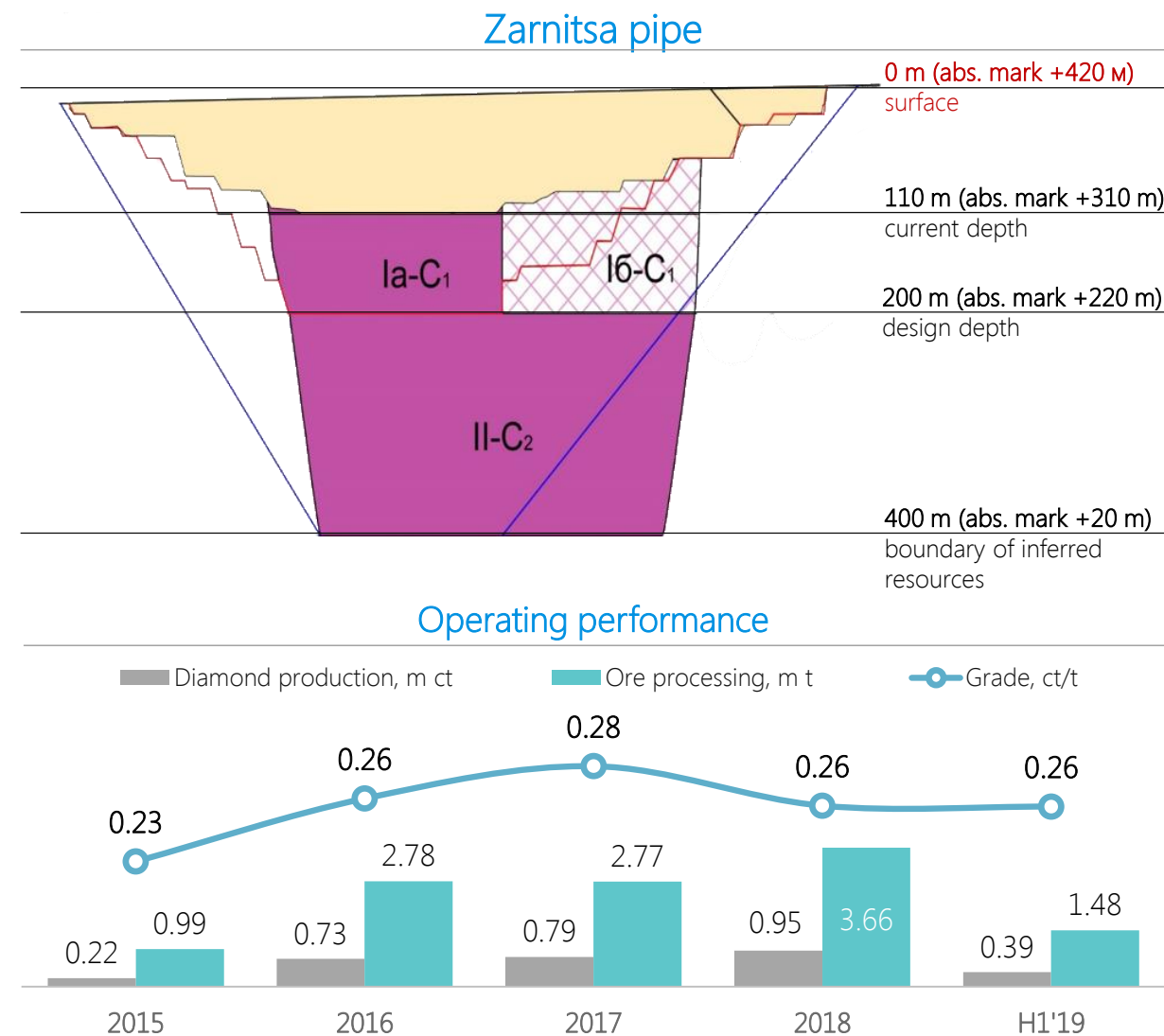


# Zarnitsa Pipe

## Highlights

- Zarnitsa pipe is located ~16 km east of Udachny town
- Discovered in 1954, has been mined since 1998 with peak of production 4.5 m t of ore being recorded in 2008
- Deposit characterized by low av. grade (~0.2 ct/t)
- Expected LOM: 2044
- ~3% of the 2018 Group's annual production
- Depth: currently 110 m (design depth – 200 m)
- Reserves<sup>1</sup>: 5.4 m ct
- 2018 operating results:
  - diamond production: 0.95 m ct
  - ore processing: 3.7 m t

1. In accordance with JORC report of resources and reserves of ALROSA Group as at 1 July 2018

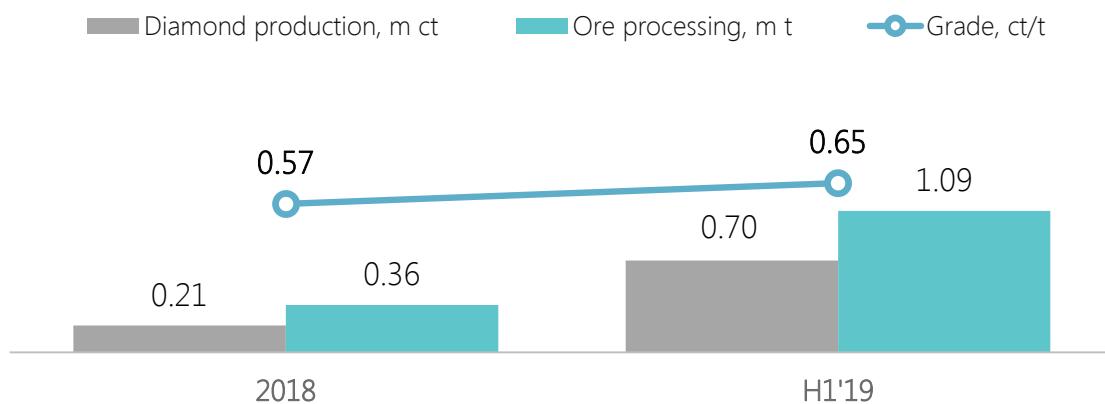


# Verkhne-Munskoe Deposit

## Highlights

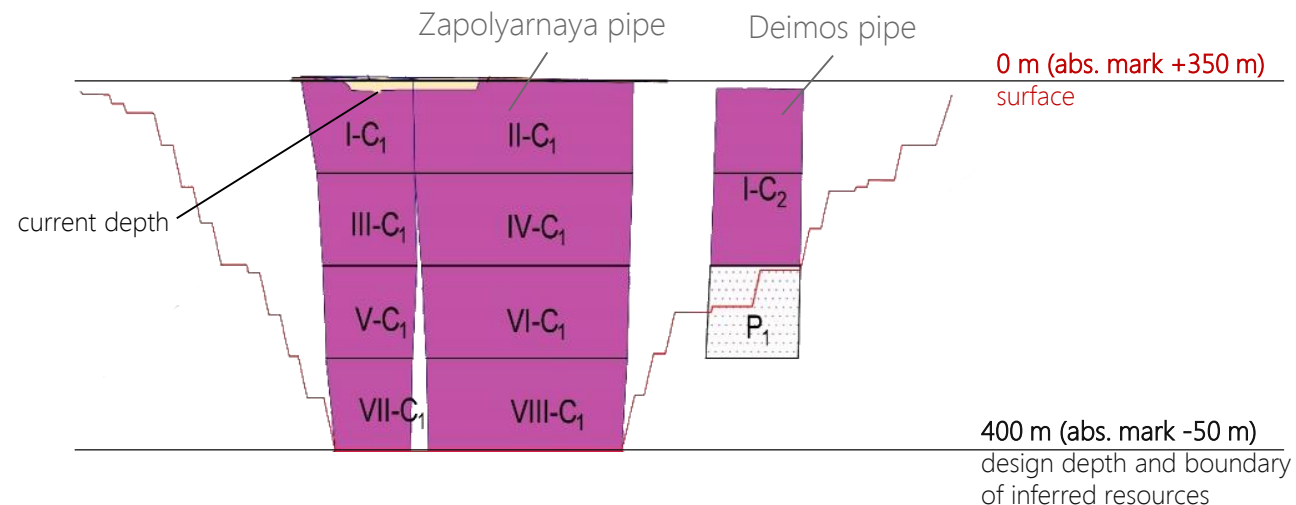
- V.Munskoe deposit located 160 km northeast of Udachny town. Extracted ore transported to a processing plant №12 (~170 km)
- Currently developed by Zapolyarny open-pit mine (incl. Zapolyarnaya and Deimos pipes, launched in October 2018), development by Magnitny open-pit mine will begin in 2021
- **Expected LOM: 2041**
- Design depth of Zapolyarny open-pit mine: **400 m**
- **Resources<sup>1</sup>**: 40.7 m ct, incl. 30.4 m ct of reserves

## Operating performance

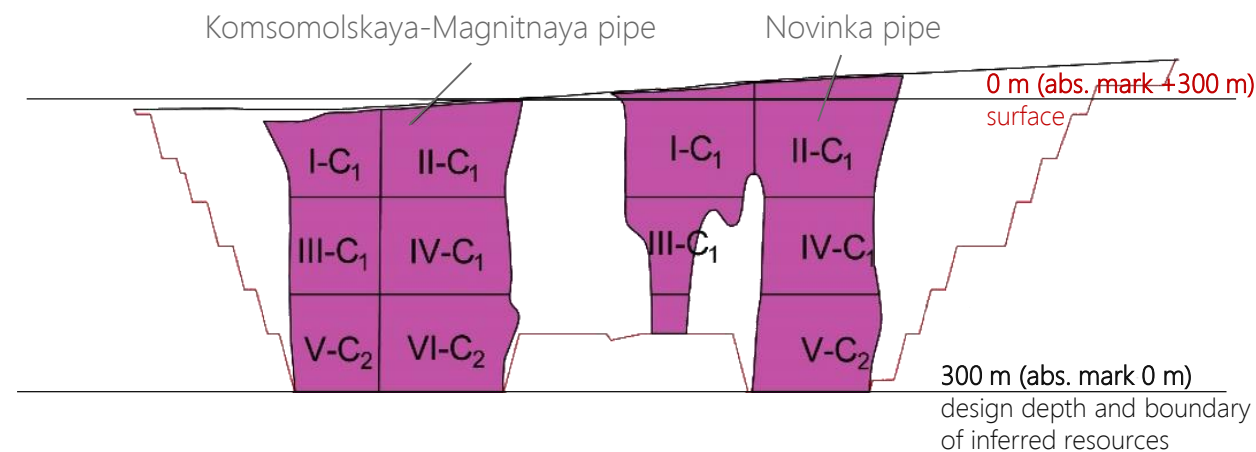


1. In accordance with JORC report of resources and reserves of ALROSA Group as at 1 July 2018

## Zapolyarny open-pit mine



## Magnitny open-pit mine (from 2021)

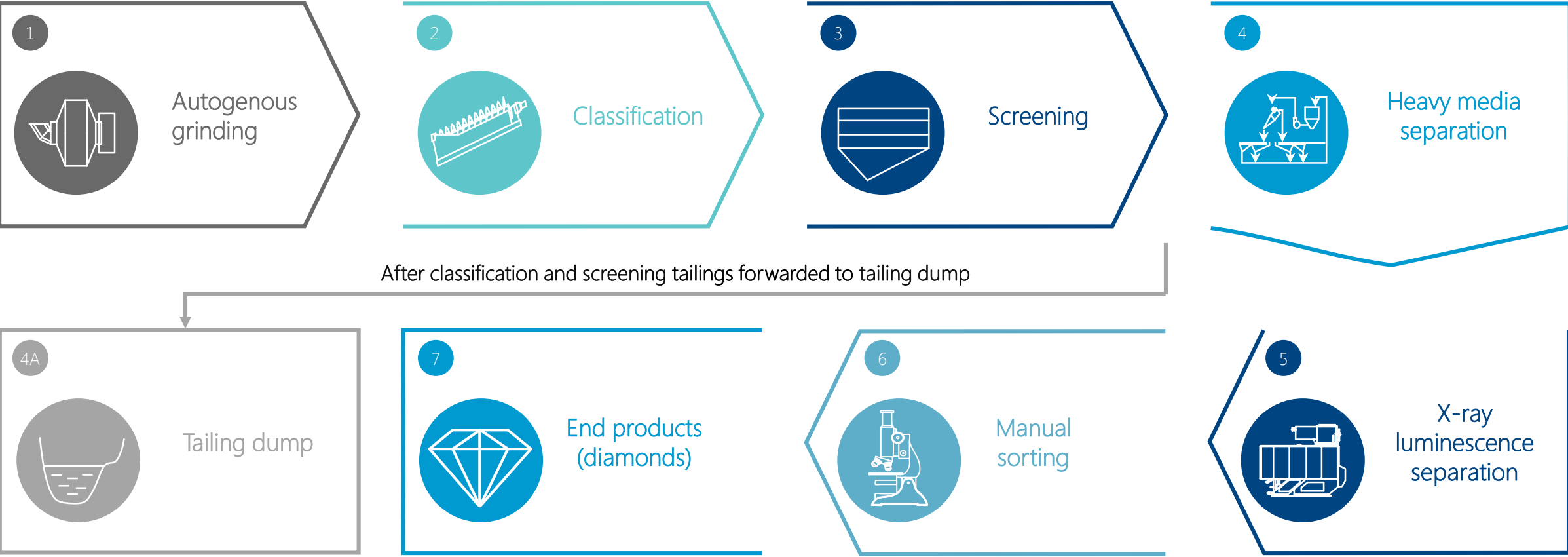




# Appendix

# Processing Of Diamondiferous Materials

Key stages of processing – from ore grinding to end product



# Detailed Program

23 July 2019

21:15 Flight Moscow – Mirny (DME, flight 6R532)

24 July 2019

8:30-09:00 Transfer to Mirny, Azimut Hotel check-in  
 09:00-11:00 Free time  
 11:00-11:30 Visit to Diamond Sorting Center (DSC)  
 11:30-11:50 Transfer to the Mirny airport  
 12:00-13:00 Flight Mirny - Nakyn. Flight over industrial sites of Nyurba Division.  
 13:00-14:00 Lunch  
 14:00-16:00 Visit to key facilities of Nyurba Division:  
 • Nyurbinskaya pipe  
 • Botuobinskaya pipe  
 • Processing plant №16  
 16:00-17:00 Flight Nakyn - Mirny. Transfer to Azimut Hotel  
 17:00-17:20 Transfer to Yakutniiproalmaz research and design institute  
 17:30-18:30 Report of ALROSA experts on ecology, exploration and HSE. Q&A session  
 18:30-18:50 Transfer to Azimut Hotel  
 19:00 Dinner with CFO, Alexey Philippovskiy

25 July 2019

08:00-08:30 Breakfast  
 08:30-08:50 Transfer to the Mirny airport  
 09:00-10:30 Flight Mirny - Polyarny  
 10:30-11:30 Flight over industrial sites of Verkhne-Munskoye deposit  
 11:30-13:30 Visit to infrastructure facilities of Verkhne-Munskoye deposit  
 13:30-14:00 Lunch  
 14:00-15:00 Flight to the Polyarny airport  
 15:00-15:20 Transfer to Udachny  
 15:20-16:30 Visit to key facilities of Udachny Division:  
 • Observation deck at the Udachny pipe  
 • Processing plant №12  
 • Motor pool  
 16:30-18:00 Visit to infrastructure facilities of Udachny  
 18:30-20:30 Transfer to the Polyarny airport. Flight Polyarny - Mirny. Transfer to Azimut Hotel  
 20:30 Dinner

26 July 2019

6:30 Breakfast  
 8:30 Transfer to the Mirny airport  
 10:00 Flight Mirny - Moscow (Domodedovo airport, flight 6R597)  
 9:40 Arrival in Moscow



# Thank You!

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