

Independent Technical Report on the Khatystakh and Beenchime diamond projects, north-west of the Republic of Sakha (Yakutia), the Russian Federation



Report Prepared for
Polarctic Management LLC

Report Prepared by



SRK Exploration Services Ltd.
ES8053
20 June 2019

Head Office

12 St Andrew's Crescent
Cardiff
CF10 3DD
United Kingdom

UK: +44 (0) 2920 233 233
Russia: +7 (0) 4955 454 413
Gabon: +241 (0) 173 0501

Email: enquiries@srkexploration.com

Web: www.srkexploration.com



Contents

Resume	ii
1 Introduction and technical assignment	1
1.1 The Scope of Work	1
1.2 Basis for the Technical Report	1
1.3 SRK professional reputation and specialist qualifications	2
1.4 Field visit.....	2
1.5 Disclaimer	2
2 Using the opinions of other experts	3
3 The position and description of the Projects	3
3.1 Terms and conditions of the License Agreement.....	6
3.2 Permits and authorization.....	6
4 Access, climate, local resources, infrastructure, physical-geographical conditions	6
4.1 Access	6
4.2 Local resources and infrastructure	6
4.3 Climate.....	7
4.4 Physical-geographical conditions	7
4.4.1 The Beenchime area	7
4.4.2 The Khatystakh area	8
5 Historical Exploration	9
5.1 The Beenchime area.....	10
5.2 The Khatystakh area	11
6 Geological conditions and mineralization	13
6.1 Regional geology	13
6.2 Geology of the licence areas.....	15
6.2.1 The Beenchime area	15
6.2.2 The Khatystakh area	18
7 Types of diamond deposits	20
7.1 Geological-commercial types of diamond deposits.....	20
7.2 The Beenchime area.....	20
7.3 The Khatystakh area	21
8 AGK exploration work at the licensed areas	21
8.1 Methodology of works	21
8.2 The Beenchime area.....	23
8.3 The Khatystakh area	26
9 AGK estimation of potential resources	32
9.1 The Beenchime area.....	32
9.2 The Khatystakh area	35
9.3 SRK ES comments	35
9.3.1 The Beenchime area	35
9.3.2 The Khatystakh area	35
10 AGK Works Program at the license areas	36
10.1 The Beenchime area.....	36
10.2 The Khatystakh area	37
10.3 SRK ES comments	39

10.3.1	The Beenchime area	39
10.3.2	The Khatystakh area	39
11	Adjacent licences	40
12	SRK ES conclusions and recommendations	42
12.1	Assessment of the expediency of selecting the areas and criteria for their diamond content 42	
12.2	Correctness in the substantiation of potential resources.....	42
12.3	Assessment of the methodology of prospecting-assessment works and recommendations for its improvement.....	43
12.4	The accuracy of development of the cost estimates of the Projects	43
12.5	Assessment of the risk reduction of potential resources	43
13	References.....	44

List of tables

Table 3-1:	Information on AGK license areas	4
Table 3-2	The corner coordinates of Beenchime area	4
Table 3-3	Corner points of the Khatystakh Project	5
Table 5-1	The results of the bulk sampling at the Bulkur site (Grakhanov, 2009).....	12
Table 6-1	Granulometric composition of diamonds from placers in the north-east of the Yakitia diamond-bearing province (Koptil et al., 1978)	16
Table 8-1	Types and scopes of AGK field-work at the Beenchime and Khatystakh areas (2016-2017).....	21
Table 8-2	The results of AGK and historical workers in the Beenchime area	25
Table 8-3	AGK results at the Khatystakh area.....	30
Table 9-1	Categories of reserves and potential resources used in the Russian Federation	34
Table 10-1	The volume of core drilling in different parts Khatystakh license area	38

List of figures

Fig. 3-1	AGK Licenses location plan.....	4
Fig. 4-1	The Beenchime River (photo by Dmitry Yakovlev, Institute of Geochemistry SB RAS)	8
Fig. 4-2	Khatystakh river valley (photo by Sergey Mulivanov, www.wikznanie.ru).....	9
Fig. 5-1	Drilling profile, which penetrated the Cranian layer in the Khatystakh area, drilled in 2011 (from archives of S.A. Grakhanov).....	12
Fig. 6-1	Yakitia diamond-bearing province (http://science.ykt.ru).....	13
Fig. 6-2	Geological map of the north-eastern part of the Yakutia diamond province	14
Fig. 6-3	The geological structure of the Beenchime area	17
Fig. 6-4	Geological map of the Khatystakh license area	19
Fig. 8-1	Stages of sample preparation: a - collection and washing of the sample; b-sieving (screening); c-jigging on a portable jig; d-visual check of coarse mineral fraction; e, f-concentrates after screening and jigging on a portable jig.....	23

Fig. 8-2 Sample collection points at the Pyropovy, conducted in various years. The yellow dots represent the AGK sampling points.	24
Fig. 8-3 Sampling of the Beenchime riverbed	24
Fig. 8-4 Visual findings of large diamond crystals in samples BenG5 (a, b), BenG9 (v), BenG10 (g).	26
Fig. 8-5 Location of trenches along the strike of the Carnian horizon in the western flank of the Bulkur anticline (Bulkur area).....	27
Fig. 8-6 Development of Trench KHG56.....	28
Fig. 8-7 Trench KhG94.....	29
Fig. 8-8 Trench KhG120.....	30
Fig. 8-9 Diamonds from trench KhG120 – general view (a) and gem varieties of (b)	32
Fig. 11-1 Currently valid (filled-in contour) and revoked (unfilled contour) licenses for geological study and mining of diamonds in the area of AGK works (https://openmap.mineral.ru)	41