KRASNY LLC

TECHNICAL REPORT

MINERAL RESOURCE ESTIMATE

OF THE

KRASNOE GOLD DEPOSIT

IRKUTSK REGION

RUSSIAN FEDERATION

Report Date: 1st November 2016 Effective Date: 1st January 2016

Prepared By

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Table of Contents

1.0	EXECUTIVE SUMMARY1
1.1	INTRODUCTION
1.2	PROPERTY DESCRIPTION AND LOCATION
1.3	LICENCES AND PERMITS
1.4	INFRASTRUCTURE
1.5	GEOLOGY AND MINERALISATION
1.6	EXPLORATION
1.7	MINERAL RESOURCES
1.8	CONCLUSIONS AND RECOMMENDATIONS
2.0	INTRODUCTION
2.1	PURPOSE AND SCOPE OF THE REPORT7
2.2	CAPABILITY AND INDEPENDENCE7
2.3	DISCLAIMER
2.4	SOURCES OF INFORMATION9
2.5	UNITS OF MEASUREMENT9
3.0	GENERAL BACKGROUND INFORMATION
3.1	RUSSIAN GOLD INDUSTRY REGULATORY SYSTEM
3.	1.1 Subsoil Licences
3.	1.2 System of Payments
3.	1.3 Precious Metals Regulation
3.	1.4 Other Regulations
3.2	RUSSIAN SYSTEM OF RESOURCE/RESERVE
2.2	CLASSIFICATION
3.3	RESOURCE/RESERVE CLASSIFICATION AS DEFINED BY
2	JORC CODE
3.	3.1 Mineral Resources
3.	3.2 Ore Reserves
4.0	PROPERTY DESCRIPTION, INFRASTRUCTURE,
	PHYSIOGRAPHY, CLIMATE AND LOCAL RESOURCES16
4.1	PROPERTY DESCRIPTION AND LOCATION16
4.2	LICENCES AND PERMITS17
4.3	INFRASTRUCTURE17
4.4	PHYSIOGRAPHY AND CLIMATE17
4.5	LOCAL RESOURCES
5.0	GEOLOGY AND MINERALISATION
5.1	GEOLOGY
5.2	MINERALISATION
6.0	DEPOSIT TYPE23
7.0	EXPLORATION24
8.0	SAMPLE PREPARATION, ANALYSES AND SECURITY

Page

8.1	CHANNEL SAMPLING	
8.2	CORE SAMPLING	
8.3	SAMPLE PROCESSING AND ANALYSIS	27
8.4	OA/OC ANALYSIS	
8.4	.1 Internal Control	
8.4	.2 External Control	
9.0	MINERAL RESOURCE ESTIMATES	
9.1	NPF GEOPROGNOZ RESERVES	
9.2	MIRAMINE RESOURCE ESTIMATE	
9.3	MICON RESOURCE ESTIMATE	
9.3	.1 Database	
9.3	.2 Wireframes of Mineralised Zones	
9.3	.3 Geostatistics	
9.3	.4 Top-Cutting of Outlier Assays	
9.3	.5 Compositing	
9.3	.6 Variography	
9.3	.7 Search Ellipsoids	40
9.3	.8 Block Model	40
9.3	.9 Block Model Estimation	40
9.3	.10 Block Model Verification	41
9.3	.11 Mineral Resource Classification	
9.3	.12 Krasnoe Deposit Resources at Different Cut-Off Grades	
10.0	MINING AND MINEABLE RESOURCE ESTIMATES	47
10.1	MAIN TECHNICAL SOLUTIONS AND MINING PARAMETERS	47
10.2	FINAL PIT CONTOUR OPTIMISATION	51
10.3	OPEN PIT GEOMETRY	58
10.5	CUT-OFF GRADES	59
10.1	MINERAL RESOURCES	
11.0	CONCLUSIONS AND RECOMMENDATIONS	
12.0	CERTIFICATES	
13.0	GLOSSARY AND ABBREVIATIONS	
13.1	GLOSSARY	
13.2	ABBREVIATIONS	67



List of Tables

Table 1.1: Mineral Resources for the Krasnoe Deposit as at 1 st January 2016	5
Table 4.1: Apices of the Licence Area	17
Table 8.1: Analysis of the Internal Quality Control Results 2014 to 2016	29
Table 8.2: Analysis of the External Quality Control Results 2015 to 2016	31
Table 9.1: Krasnoe Deposit Mineral Resources as at 25 th March 2013	
Table 9.2: Drill Hole and Mine Workings Data Contained in the Database	35
Table 9.3: Main Statistics for Gold	
Table 9.4: Statistical Parameters for the Determination of Outliers	
Table 9.5: Main Statistics for Gold Grades after Removal of Outliers	
Table 9.6: Main Statistics for Composite Gold Grades	
Table 9.7: Parameters of the Search Ellipsoids	40
Table 9.8: Block Model Parameters	40
Table 9.9: Krasnoe Deposit Mineral Resources as at 1 st January 2016	45
Table 10.1: Parameters for the Final Optimised Open Pit	51
Table 10.2: Optimisation Results – Parameters of the Final Pit Shells	53
Table 10.3: Parameters for the Open Pit Mining Operations	58
Table 10.4: Krasnoe Deposit Mineral Resources as at 1 st January 2016	61



List of Figures

Figure 1.1: Geographical Map Illustrating the Krasnoe Deposit Location
Figure 3.1: Comparison of GKZ and JORC Code Resource/Reserve Classification
Figure 3.2: Exploration Results, Mineral Resources and Ore Reserves as Defined by the JORC Code
Figure 4.1: Geographical Map Illustrating the Krasnoe Deposit Location16
Figure 5.1: Geological Map of the Deposit Area20
Figure 8.1: Processing Flowsheet for Channel Samples27
Figure 8.2: Internal Control - Mean Absolute Error by Grade Classes 2014 to 201629
Figure 8.3: Internal Control - Comparison Control Comparison of Original and Duplicate Assays
Figure 8.4: Internal Control - Correlation of the Original and Duplicate Assays 2014 to 2016
Figure 8.5: External Control - Mean Absolute Error by Grade Classes 2015 to 201631
Figure 8.6: External Control - Comparison of Original and Duplicate Assays32
Figure 8.7: External Control - Correlation of the Original and Duplicate Assays 2015 to 2016
Figure 9.1: Contours of the Upper Ore Body
Figure 9.2: Krasnoe Deposit Ore Zones (Plan View)
Figure 9.3: Cumulative Frequency Distribution of Gold Assays
Figure 9.4: Downhole Variogram to Determine the Nugget Effect Value
Figure 9.5: Experimental Variogram along the Strike of the Upper Southern Mineralised Zone and Model
Figure 9.6: 3D View of the Block Model View from the Northeast
Figure 9.7: Comparison of Drill Hole and Block Model Cell Grades
Figure 9.8: Comparison of Declustered Composite and Block Model Grades43
Figure 9.9: Comparison of the Grades of Gold in the Declustered Composites and the Block Model Cells
Figure 9.10: Krasnoe Deposit Classified Mineral Resources
Figure 9.11: Tonnage Grade Curve for Indicated Mineral Resources at Different Cut- Off Grades
Figure 9.12: Tonnage Grade Curve for Inferred Mineral Resources at Different Cut- Off Grades
Figure 10.1: Krasnoe Deposit Block Model - Mineralisation Zones
Figure 10.2: Krasnoe Deposit Block Model – Section along the Strike of the Mineralisation Zones



Page

Figure 10.3: Krasnoe Deposit Block Model - Sections across the Strike of the	
Mineralisation Zones	50
Figure 10.4: Legend for Figures 10.1, 10.2 and 10.3	51
Figure 10.5: Diagram of Pit Shell Sequence	54
Figure 10.6: Block Model of the Krasnoe Deposit and the Final Pit Shell	56
Figure 10.7: Optimal Final Open Pit Contour - 3D View	57
Figure 10.8: Plan of the Final Open Pit	59

1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

Micon International Co. Limited (Micon) was contracted by Krasny LLC (Krasny) to complete an evaluation of the mineral resources of the Krasnoe gold deposit located in the Irkutsk region, Russian Federation. Krasny LLC is owned by OJSC GV Gold (51% shares) and a Swedish company Kopy Goldfields AB (49% shares). This Report contains the results of this evaluation and was prepared in accordance with the internationally recognised guidelines of the JORC Code 2012 (the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves prepared by the Joint Ore Reserve Committee of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists and the Minerals Council of Australia).

In addition Micon conducted a review of the exploration results and metallurgical testwork results. The evaluation of the mineral resources was based on the constructed deposit block model. The mineral resources were evaluated within the outline of the designed pit constructed on the basis of the optimal ultimate pit shell.

The principal consultants responsible for the review of the project and the preparation of this Report are listed in Section 2.2.

Evgeny Kondratiev MAusIMM(CP), Micon's Senior Exploration Geologist, visited Bodaybo at the end of November 2015. During the site visit the sampling area and laboratory were inspected. Core from two drill holes were reviewed along with the associated logs and additional information about the deposit was collected. Meetings were also conducted with the geological personnel from Krasny LLC and OJSC GV Gold.

It is emphasised that the results of this study are principally derived from the examination and interpretation of exploration works. No independent confirmatory sampling has been performed by Micon as a part of the current study to confirm or otherwise qualify the conclusions presented in this report.

1.2 PROPERTY DESCRIPTION AND LOCATION

The Krasnoe deposit is located on the upper reaches of the right bank of the Bodaybo River. The area is economic well developed and is located 70 km to 80 km from the hardrock deposits of Sukhoi Log, Verninskoye and Golets Vysochaishy. Gold mining from different types of placers occurs in the vicinity of the deposit. The property is located within the jurisdiction of the Artemovsky in the Bodaybo Area of the Irkutsk Region.

The deposit location is presented in Figure 1.1.





Figure 1.1: Geographical Map Illustrating the Krasnoe Deposit Location

Located within the Patomsk highland the deposit area is mountainous with elevations of between 800 m to 1,200 m, locally the elevations range between 500 m and 600 m. The majority of the river valleys are covered by technogenic sediments as a result of placer mining. These deposits significantly complicate exploration in the area. Permafrost occurs everywhere on the watersheds and slopes, particularly of northern exposure.

The climate in the area is extreme continental with long cold winters and temperatures reaching down to -54° C and short hot summers up to $+34^{\circ}$ C. The average annual temperature is -6° C. The average annual amount of precipitation is 350 mm, the majority falling within the summer. Snowfall begins in the middle or the end of September and thaws out completely by the end of June. The thickness of the snow cover in the valleys reaches between 2 m to 4 m.

1.3 LICENCES AND PERMITS

Micon has not undertaken any legal due diligence of the asset portfolio associated with the Krasnoe deposit and does not present any legal opinion regarding the corresponding



ownership or title. Micon has reviewed the documentation relating to the title of assets and licences for exploration and mining. Currently Licence IRK 02804 BR for geological surveying and mining of gold at the Krasnoe deposit belongs to Krasny LLC. The licence was registered on 18th July 2011 and is valid until 25th December 2035.

1.4 INFRASTRUCTURE

Artemovsky, the nearest settlement, is located 15 km to the southwest and the regional centre of Bodaybo 75 km to the southeast. The Bodaybo-Kropotkin-Perevoz road runs through the site. The site is covered with a network of gravel and dirt roads, currently used by the placer gold miners. In winter, the roads within the site require snow clearing. Cargo is delivered to the Krasny site from the Kopylovskoye LLC base (Bodaybo) by all-terrain trucks. The bulk of the cargo is delivered to the base from the nearest railway station of Taksimo (Baikal Amur Mainline) along the road for a distance of 220 km. During the navigation period it is possible to deliver cargo by water along the Lena and Vitim Rivers from the Osetrovo (Ust Kut) river port to Bodaybo (750 km). Bodaybo has an airport capable of handling medium capacity cargo and passenger airplanes from the cities of Irkutsk (1,200 km) Bratsk, Mirnyi, Kirensk and Ust Kut.

The power supply in the area is provided by the Mamakan Hydroelectric Power Station via the LEP-110 kV and the LEP-220 kV Taksimo-Bodaybo power lines. Near the area there are also 110 kV and 36 kV power lines.

1.5 GEOLOGY AND MINERALISATION

The Krasny deposit is located in the northern limb of the Bodaybo syncline, one of the main structures in the central part of the Bodaybo synclinorium. The Bodaybo syncline is composed of sedimentary and metamorphic rocks from the Bodaybo Series of the Upper Riphean and is capped with loose Quaternary deposits. The area is characterised by intense multi-scale folding complicated with numerous faults, micro-folding zones, boudinage and tectonic melange.

The deposit is located in the Vachskaya Suite of the Upper Riphean in the form of two saddle zones of vein-veinlet-disseminated quartz sulphide mineralisation, a Lower and an Upper zone. Mineralised zones are confined to the axial part of the main deposit's structure, the Rudnaya anticline. The anticline represents an overturned fold striking ESE, both limbs of which are dipping to the NNE, 85° for the northern limb and 70° to 75° for the southern. The limbs are composed of interstratified sandstones and phyllites with thicknesses of up to 60 m. The fold is complicated by large scale faults. The mineralised zone typically contains lens-like and complex folded quartz-sulphide veinlets, quartz veins and development of sparsely disseminated pyritic mineralisation.

An oxidation zone occurs at the deposit; the lower boundary of the oxide ores are located around 20 m to 100 m from the surface.

Two types of the gold mineralisation are identified within the Krasnoe ore field: veinlet-disseminated quartz-sulphides, lithologically/structurally controlled; and quartz veins with limited development. As a rule, these two types of gold mineralisation are spatially concurrent.

Quartz-sulphide mineralisation forms veinlet-disseminated zones within metamorphogenic zones of sulphide mineralisation in the structurally complicated areas. The internal structure



of the zones is complex and consists of a dense network of hetero-oriented veinlets, lenses and nests of quartz occurring together with scattered dissemination of sulphides occurring as more than 1% to 3% in schistose and fractured host rocks. Sulphide mineralisation is typical over the entire ore field with a wide distribution, mainly represented by pyrite. Pyrrhotite, chalcopyrite, sphalerite, galena occur to a lesser degree.

The quartz mineralisation is localised in veins and veinlets which usually have lens-like shapes, thicknesses ranging from 0.2 cm to 0.5 m and lengths ranging from a few centimetres to several metres. Quartz vein fields and zones are confined to the southern limb of the Rudnaya anticline. They are located within the sub-latitudinal zones (strips) of the scattered quartz and quartz-sulphide mineralisation. The distribution of quartz vein material in these strips is uneven and the intervals with elevated concentrations alternate with barren areas.

Gold is predominantly found in joints with pyrite or in the form of inclusions in pyrite. The size of the gold grains ranges from $1 \mu m$ to $150 \mu m$, with an average size of $30 \mu m$ to $70 \mu m$. The surfaces of gold grains forming joints with pyrite are smooth, the edges may slightly "branch"; skeletal gold crystals are rare.

In addition, free gold is also registered, which is characterised by smooth surfaces and sizes of up to $200 \,\mu\text{m}$.

1.6 EXPLORATION

The Krasnoe veinlet-disseminated morphological mineral deposit was identified within the cognominal ore field during the course of identification of the potentially ore-bearing areas within the complex syncline in the Bodaybo territory from 1978 to 1979.

During 1981 to 1983, exploration was completed within the Artemovsky ore cluster. As a result, three quartz-sulphide zones were identified and traced within the mineralisation area. Two ore bodies were identified in the No. 1 quartz-sulphide zone. The first ore body was classified as C_2 category gold reserves, estimated at 1 t. The second ore body as P_1 category prognostic resources, estimated at 1.4 t. Within zone No. 3, at depths of between 150 m to 300 m, two "blind" ore bodies with the strike lengths of up to 900 m, thicknesses from 6 m to 12 m and average grades of between 2.0 g/t Au to 2.6 g/t Au were identified. The total P_1 category prognostic resource of the mineral occurrence was 19.3 t of gold at an average grade of 2.57 g/t Au. The estimate was completed using the following parameters: cut-off grade 1 g/t Au; minimum commercial block grade 1.5 g/t Au and minimum thickness of ore bodies set at 3 m. A negative assessment was reported for the remaining area.

From 2004 to 2005 exploration continued within the Krasnoe ore field. As a result, the Verkhne-Bodaibinskaya anticline structure, especially within its periclinal closure, was detailed and the control factors of the gold mineralisation were described. Eight gold-bearing zones were identified within the outlined zones of intensive sulphide mineralisation and silicification in the project area within the Verkhne-Bodaibinskaya anticline.

From 2010 to 2012, the Krasnoe mineral occurrence was investigated by prospecting and estimation operations. The work included drifting of surface mine workings and core drilling. Based on these results, the option-by-option reserve calculations and prognostic resource estimates for three cut-off grades (0.7 g/t Au, 1.0 g/t Au and 1.3 g/t Au) was produced. The C₂ category reserves were declared at 34,032.58 kg of gold with an average grade of 2.28 g/t Au, and the prognostic resources for the P₁ category totalled 31,062.68 kg of



gold at an average grade of 2.55 g/t Au and P_2 category resources were 26,299.59 kg of gold at an average grade of 3.04 g/t Au.

In 2013 exploration recommenced and is ongoing. Since 2011 up to the end of 2015, 31,500 m were drilled and about 10,000 m of trenches were excavated.

1.7 MINERAL RESOURCES

In April 2016, NPF Geoprognoz drafted the cut-off grade estimation report with the reserve calculations for Krasny LLC. In accordance with this estimate the C_2 category reserves for the central part of the Upper ore body as at 1st January 2015 totalled 6.317 Mt of ore containing 9,767 kg of gold at an average grade of 1.55 g/t Au.

Micon proceeded with the assumption that the Krasnoe deposit will be developed using the open pit mining method. In order to create a final open pit design, an optimisation analysis was performed using Whittle software. Optimisation of the final open pit mining contour was performed using the block model with the inclusion of the Indicated and Inferred mineral resources. For the deposit mineral resources to be estimated in accordance with the guidelines of the JORC Code (2012) the pit shell corresponding to the base price value was selected (US\$1,200/oz). Micon completed construction of the final open pit design matching the selected pit shell.

Whilst completing the mineral resource estimate in accordance with the guidelines of the JORC Code (2012), Micon followed the requirement that "there are reasonable prospects for eventual economic extraction" and limited the volume of the estimated mineral resources by the contour of the final design for the open pit.

Mineral resources of the Krasnoe deposit, estimated and classified by Micon in accordance with the guidelines of the JORC Code (2012), are presented in Table 1.1.

	Indicated Mineral Resources			Inferred Mineral Resources		
Material Type	Tonnage (kt)	Au (g/t)	Au (kg)	Tonnage (kt)	Au (g/t)	Au (kg)
Oxide	5,402	1.157	6,247	1,150	1.002	1,153
Primary	2,447	1.108	2,710	11,174	1.752	19,580
Total	7,848	1.141	8,958	12,324	1.682	20,732

 Table 1.1: Mineral Resources for the Krasnoe Deposit as at 1st January 2016

1.8 CONCLUSIONS AND RECOMMENDATIONS

Micon's audit review of the Krasnoe Gold Deposit has led to the following conclusions and recommendations:

- 1. The Indicated and Inferred mineral resources for the deposit have been estimated according to the amount of available geological information and the complexity of the mineralised zones;
- 2. Continued exploration is required to upgrade the current Inferred resources to a higher category;



- 3. To upgrade the Indicated mineral resources to ore reserves more detailed investigations on the geology, processing, hydrogeology and geomechanics are required;
- 4. Exploration of the flanks of the deposit should be continued;
- 5. For adequate internal and external quality control procedures the number of control samples should be increased to 5% of the total number of regular samples;

2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF THE REPORT

This technical report was prepared by Micon International Co. Limited (Micon) for Krasny LLC (Krasny) whose office is located in Bodaybo (the Irkutsk region, Russian Federation). Krasny LLC is owned by OJSC GV Gold (51% shares) and a Swedish company Kopy Goldfields AB (49% shares). In accordance with the scope of work, the report preparation included a review of the geological setting and a resource evaluation for the deposit. The contract between Micon and Krasny was concluded in November 2015.

The Krasnoe gold deposit is a hardrock deposit which has never been developed; a few exploration stages have been conducted. In 2016 the reserves are planned to be put on to the State balance, the TEO of temporary exploration conditions and the reserve calculation are in progress.

The Krasnoe gold deposit is located on the upper reaches of the right bank of the Bodaybo River. The area is economically well developed and is situated 70 km to 80 km from the hardrock deposits of Sukhoi Log, Verninskoye and Golets Vysochaishy. Gold mining from different types of placers occurs in the vicinity of the deposit. The property is located within the jurisdiction of Artemovsky, in the Bodaybo Area of the Irkutsk Region.

Evgeny Kondratiev MAusIMM(CP), Micon's Senior Exploration Geologist, visited Bodaybo from 25th to 27th November 2015. During the site visit the sampling area and laboratory were inspected. Core from two drill holes were reviewed along with the associated logs and additional information about the deposit was collected. Meetings were also conducted with the geological personnel from Krasny LLC and OJSC GV Gold. The deposit was not visited because the field work ceased at the end of October.

It is emphasised that the results of this study are principally derived from the examination and interpretation of exploration studies and data. No independent confirmatory sampling has been performed by Micon as a part of the current study to confirm or otherwise qualify the conclusions presented in this report.

2.2 CAPABILITY AND INDEPENDENCE

Micon is an independent consulting firm of geologists, mining engineers, metallurgists and environmental consultants, all of whom have extensive experience in the mining industry. The firm has offices in Norwich and Cornwall (United Kingdom), Toronto and Vancouver (Canada). Micon offers a broad range of consulting services to clients involved in the mining industry. The firm maintains a substantial practice in the geological assessment of prospective properties, the independent estimation of resources and reserves, the compilation and review of feasibility studies, the economic evaluation of mineral properties, due diligence reviews and the monitoring of mineral projects on behalf of financing agencies.

Micon's practice is worldwide and covers all of the precious and base metals, the energy minerals (coal and uranium) and a wide variety of industrial minerals. The firm's clients include major mining companies, most of the major United Kingdom and Canadian banks and investment houses, and a large number of financial institutions in other parts of the world. Micon's technical, due diligence and valuation reports are typically accepted by



regulatory agencies such as the London Stock Exchange, the US Securities and Exchange Commission, the Ontario Securities Commission, the Toronto Stock Exchange, and the Australian Stock Exchange.

Micon is internally owned and is entirely independent of Krasny LLC and their affiliated companies. The personnel responsible for this review and the opinions expressed in this Report are Micon's full-time employees. For its services in preparing this Report, Micon is receiving payment based upon time and expenses and will not receive any capital stock from Krasny LLC or any of their affiliated companies.

The principal consultants responsible for the review of Krasnoe Gold Deposit and the preparation of this report have extensive experience in the mining industry and have appropriate professional qualifications:

- Stanley Bartlett, P.Geo, Micon Vice President, Senior Geologist and Managing Director of Micon's UK office; Krasnoe Report Project Manager and Team Leader;
- Evgeny Kondratiev, MAusIMM(CP), Micon Senior Mineral Resource Geologist;
- Michael Khoudine, Micon Senior Mining Engineer, and,
- Sandra Mahé, B.Sc., Micon Geologist.

Mr. Stanley Bartlett is responsible for the preparation or supervision of preparation of all sections of this Report. Mr Bartlett by reason of education, experience and professional qualifications fulfils the requirements of a Competent Person as defined by the JORC Code (2012) and as such is qualified to the review this deposit and mineralisation type.

The mineral resources stated in the report were evaluated by Michael Khoudine, M.Sc., based on the block model created by Evgeny Kondratiev, MAusIMM(CP), the mineral resource geologist. Mr Kondratiev by reason of education, experience and professional qualifications fulfils the requirements of a Competent Person as defined by the JORC Code (2012) and as such is qualified to the review this deposit and mineralisation type.

2.3 **DISCLAIMER**

Whilst Micon has reviewed the exploration and mining licences, permits and entitlements of the property in so far as these may influence the investigation and development of the mining assets, Micon has not undertaken legal due diligence of the asset portfolio described in this Report. The reader is therefore cautioned that the inclusion of exploration and mining properties within this Report does not in any form imply legal ownership.

During the preparation of this Report, Micon has relied upon information provided by Krasny LLC and OJSC GV Gold, which describes the legal title, infrastructure, exploration history, geology and mineralisation, resources, reserves, mining and metallurgical design and capital and operating budgets for the project. Micon has not independently verified the statements and data contained in the information supplied and has assumed that the information provided is representative and materially complete.



2.4 SOURCES OF INFORMATION

- Licence on Subsoil Use IRK 02804 BR;
- A Report about Prospecting Assessment Works with the Reserve Calculation on the Hardrock Gold Deposit Krasnoe Located in Irkutsk Region of Russian Federation as at 25th April 2014. Krasnoyarsk, 2014;
- A Brief Informational Report about the Operational Assessment of Reserves (Resources) of the Hardrock Gold of the Krasnoe Area (as at 17th November 2014), Krasnoyarsk, 2014;
- An Informational Report with Operational Assessment of Reserves (Resources) of the Hardrock Gold d of the Krasnoe Area (as at 15th December 2014), Krasnoyarsk, 2014;
- Preliminary Geological Economic Assessment of the Krasnoe Deposit with Micromine Software (as at 19th February 2015);
- Database of Geological Sampling of Trenches and Drill Holes of the Krasnoe Deposit as at a First Half of 2016 in mdb Format. Provided by Krasny LLC;
- Triangulation Surface Model of the Krasnoe Deposit in dxf Format. Provided by Krasny LLC;
- Drill Hole and Trench Documentation Logs in jpg Format; and,
- Open Source Information.

2.5 UNITS OF MEASUREMENT

Quantities are generally stated in SI units, as utilised by international mining companies. These include metric tonnes (t), million metric tonnes (Mt), kilograms (kg) and grammes (g) for weight; kilometres (km), metres (m), centimetres (cm) and millimetres (mm) for distance; cubic metres (m³), litres (l), millilitres (ml) and cubic centimetres (cm³) for volume, square kilometres (km²) and hectares (ha) for area, weight percent (%) for base metal grades, grammes per metric tonne (g/t) for gold and silver grades and tonnes per cubic metres (t/m³) for density. Precious metal grades may also be expressed in parts per billion (ppb) or parts per million (ppm) and their quantities may also be reported in troy ounces (ounces, oz), a common practice in the mining industry. All currency amounts are stated either in US dollars (US\$) or Russian roubles (RUB).

List of used abbreviations is presented in Section 13.



3.0 GENERAL BACKGROUND INFORMATION

3.1 RUSSIAN GOLD INDUSTRY REGULATORY SYSTEM

The State is the beneficial owner of all mineral resources in Russia and licenses their exploration and exploitation to qualifying organisations in accordance with the regulatory system. The industry is governed principally through the following laws:

- The Constitution of the Russian Federation;
- The Civil Code of the Russian Federation;
- The Land Code of the Russian Federation;
- The Tax Code of the Russian Federation;
- Federal Law No. 41-FZ "On Precious Metals and Gems" dated 26th March, 1998 (as amended) (the "Precious Metals Law");
- The Law of the Russian Federation No. 2395-1 "On Subsoil" dated 21st February, 1992 (as amended) (the "Subsoil Law"); and,
- Federal Law No. 173-FZ "On Currency Regulation and Currency Control" dated 10th December, 2003 (as amended) (the "Currency Control Law").

3.1.1 Subsoil Licences

The use of the subsoil for geological research, exploration and mineral production purposes is primarily established under the Subsoil and Precious Metals Laws. These permit subsoil allotments to be licensed to interested and qualifying parties for geological exploration and assessment or production of natural resources, or through a combined licence for the exploration, assessment and production stages of a project. Since the introduction of amendments to the Subsoil Law in January, 2000, the maximum term of an exploration licence is 5 years, but a production (mining) licence may be issued for 25 years, or the useful life of the mineral reserves. It is also usual for the licence recipient to be granted the use of the land covered by the respective exploration or mining permit.

Under amendments of the Subsoil Law in August, 2004, licences are no longer issued by the federal or regional authorities, but are awarded through a tendering or auction system conducted by the Federal Agency for Subsoil Use. Winning bids are expected to be the most technically competent, financially attractive and environmentally sound proposals that meet the published tender terms and conditions. Licences for geological exploration may also be issued without the holding of an auction through decisions made by the federal authorities.

Licences are transferable only under certain circumstances in Russia, which include corporate reorganisations or mergers involving the licence-holder, transfer from a parent company to a subsidiary or vice-versa, or between subsidiaries of the same parent company, or the transfer of title to a newly-established legal entity in which the licence-holder has at least a 50% ownership interest, providing that the new entity is equipped and authorised for such activities.



A licence holder has the right to develop and use (including selling) resources extracted from a licence area, though the Russian Federation retains ownership of all subsoil resources at all times. The licences generally require the holder to make certain commitments, including:

- Extracting agreed annual target amounts of reserves;
- Complying with specified requirements including the use of technologies;
- Conducting agreed mining and other exploratory and development activities;
- Protecting the environment in the licence/s from damage;
- Providing geological information and data to the relevant authorities;
- Submitting on a regular basis formal progress reports to regional authorities; and,
- Making all obligatory payments when due.

Government authorities may undertake periodic reviews from time to time, to ensure the compliance of the licence-holder with the terms of the licence, the Subsoil Law and other applicable legislation. The penalties for contravening the regulations can be severe.

3.1.2 System of Payments

From 1st January 2002, the earlier system of payments for the use of the subsoil was modified by merging royalties, excise taxes and mineral restoration payments into a single tax called the mineral production tax. In addition, the following types of payment obligations were established:

- One-time payments as specified in a licence;
- Regular payments for subsoil use, such as rent payments for the right to conduct prospecting/appraising and exploration work;
- Payments to the State for geological subsoil information;
- Fees to participate in tenders and auctions;
- Fees for the issuance of licences; and,
- Other payments and fees set forth by the legislation of the Russian Federation on taxes and duties.

3.1.3 Precious Metals Regulation

The extraction, production and refining processes of precious metals are governed by the specific regulations of the Precious Metals Law.

3.1.4 Other Regulations

The exploration and production of mineral deposits are also subject to additional appropriate industrial and technological usage, environmental and health and safety regulations. Such legislation typically covers the handling and use of hazardous substances, explosives, waste materials, water use, construction of buildings and installations, and medical and training facilities.

3.2 RUSSIAN SYSTEM OF RESOURCE/RESERVE CLASSIFICATION

All mineral resources and reserves in Russia are formally classified according to an established system developed and administered by the Russian State Commission for Mineral Reserves (Gosudarstvennaya Komissia po Zapasam - GKZ). The GKZ applies strict control over the estimation and reporting of mineral reserves and utilises a prescribed protocol for their calculation that is usually based upon standard sectional methods.

Preliminary mineral reserve estimates, as completed by the licence holder, are submitted to the GKZ for approval in the form of a TEO, which justifies the cut-off grade criteria (temporary or permanent ones, depending on the degree of exploration). The approved cut-off criteria are used to generate the mineral reserves that are submitted to the GKZ for approval.

In many respects the system is similar to western classification systems, essentially measuring the level of confidence in quantity and quality information that is used to define the mineral resources or reserves. One of the systems commonly adhered to in Western countries is the JORC Code (the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves prepared by the Joint Ore Reserve Committee of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists and the Minerals Council of Australia), which was released in 1989 and last updated in 2012.

In Micon's experience, the level of detail required to support a submission of mineral reserves to the GKZ is more systematic and comprehensive than is required under the JORC Code in almost all respects. The data submitted for approval to the GKZ are subject to rigorous review, including consideration of the geological complexity of the deposit, the distribution and complexity of the ore mineralogy, the degree of knowledge obtained from exploration activities such as the density of drilling, the extent of any underground development, the computation of resource estimates, cut-off grades, as well as numerous other economic, technological, mining and metallurgical characteristics.

The JORC Code and GKZ reserve reporting systems share a very important fundamental principle, which is that the economic viability of a reserve base must be demonstrated. For this reason, both systems utilise a similar set of geological, economical and technical factors within a sequential classification scheme which reflects the increasing degree of knowledge and confidence in the integrity of the reserves. Figure 3.1 illustrates Micon's understanding of the correlation between the two systems.

Using the GKZ system, mineral resources and reserves are recognised as either prognosticated resources, which include those resources that are of an inferred, potential or speculative nature, or mineral reserves, which can be effectively subdivided into those that demonstrate economic significance (balance mineral reserves) and those with only potential economic significance (off-balance mineral reserves).

Balance mineral reserves comprise that part of the mineralisation that has been demonstrated to a sufficient level of confidence to contain a metal or commodity whose economic viability has been approved by the GKZ. They may not however, include adjustment for technical and economic matters such as mining dilution and losses.



The JORC (2012) classification term "mineral resources" approximately corresponds to the term "geological reserves" from the Russian GKZ system. The GKZ categories for balance mineral reserves (A, B, C_1 and C_2) can be correlated by definition with mineral resources as defined under the JORC Code. Categories A and B are generally reported as Measured resources, whilst category C_1 generally constitutes Indicated mineral resources, with C_2 category as Inferred mineral resources. Under the GKZ system, C_2 category mineral reserves can be included in mine-planning studies, but it should be noted that under the terms and conditions of reporting public documents to Western standards, Inferred mineral resources cannot be included as 'ore reserves' or used for formal valuation purposes.



Figure 3.1: Comparison of GKZ and JORC Code Resource/Reserve Classification

By contrast, the classification of prognosticated resources (P_1 , P_2 , and P_3) refers to mineral resources that range from Inferred mineral resources, to potential and speculative resources. These are not generally recognised as quantifiable in Western terms and can only be regarded as indicators of the mineral potential of an area or region. Such resources may be subsequently upgraded to recognised categories of reserves and resources by successful exploration work, or excluded if the work is unsuccessful.

3.3 RESOURCE/RESERVE CLASSIFICATION AS DEFINED BY JORC CODE

The classification of the mineral resources and ore reserves contained within this Report has been completed in accordance with the guidelines of the JORC Code (2012). Similar to the



system followed by the GKZ, the JORC Code relies upon an increased level of geological knowledge and the application of mining and other modifying factors to elevate those categories of resources to reserves as summarised in Figure 3.2.

The JORC Code is similar in most respects to those systems adopted in North America and in Europe, in particular the system of resource definition established by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) and recognised under the guidelines of Canadian National Instrument (NI) 43-101.





3.3.1 Mineral Resources

The relevant sections of the JORC Code (2012) are provided for reference as follows:

- A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.
- An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify, geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

An Inferred Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to Ore Reserves. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.



• An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to assume geological and grade (or quality) continuity between points of observation where data and samples are gathered.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Ore Reserve.

• A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics, are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation the economic viability of the deposit.

Geological evidence is derived from detailed and reliable exploration, sampling and testing gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes, and is sufficient to confirm geological and grade (or quality) continuity between points of observation where data and samples are gathered.

A Measured Mineral Resource has a higher level of confidence than that applying to an Indicated or an Inferred Mineral Resource. It may be converted to a Proved Ore Reserve or under certain circumstances to a Probable Ore Reserve.

3.3.2 Ore Reserves

The relevant sections of the JORC Code are:

• An 'Ore Reserve' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level (as appropriate) and include application of Modifying Factors. Such studies demonstrate that, at the time of reporting extraction could reasonably be justified.

The reference point at which Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

- A 'Probable Ore Reserve' is the economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve.
- A 'Proved Ore Reserve' is the economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve implies a high degree of confidence in the Modifying Factors.



4.0 PROPERTY DESCRIPTION, INFRASTRUCTURE, PHYSIOGRAPHY, CLIMATE AND LOCAL RESOURCES

4.1 **PROPERTY DESCRIPTION AND LOCATION**

The Krasnoe deposit is located on the upper reaches of the right bank of the Bodaybo River. The area is economically well developed and is located 70 km to 80 km from the hardrock deposits of Sukhoi Log, Verninskoye and Golets Vysochaishy. Gold mining from different types of placers occurs in the vicinity of the deposit. The property is located within the jurisdiction of Artemovsky, in the Bodaybo Area of the Irkutsk Region.

The deposit location is presented in Figure 4.1.



Figure 4.1: Geographical Map Illustrating the Krasnoe Deposit Location

The deposit has never been developed, however it has undergone several stages of geological exploration and its reserves will be registered on the state balance this year. The reserve estimation cut-off grade report is currently being drafted.

4.2 LICENCES AND PERMITS

Krasny LLC is the licence holder of IRK 02804 BR which encompasses the right to use the sub-surface for geological exploration and production of hardrock gold within the Krasny site. Krasny LLC was registered in February 2010. Krasny LLC is owned by OJSC GV Gold (51% shares) and a Swedish company Kopy Goldfields AB (49% shares).

Licence IRK 02804 BR was registered by the state authorities on 18^{th} July 2011 and is valid until 25^{th} April 2035. For the geological surveying period, the licence site was given a status of geological lease with no depth restriction. For the exploration period a status of mining lease within the preliminary boundaries was granted and for the production period the status of mining lease was granted with the depth restricted by the bottom boundary of the reserve estimate. The licence site area is 31.05 km^2 and the geographic apices of the site are given in Table 4.1.

Apex	No	rthern Latit	ude	Eastern Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
1	58	19	17	114	42	47
2	58	19	26	114	49	31
3	58	18	25	114	49	33
4	58	18	13	114	51	45
5	58	17	13	114	50	33
6	58	16	55	114	50	33
7	58	17	16	114	42	54

Table	4.1:	Apices	of the	Licence Area
1 4010		1 piecos	01 0110	Licence in cu

4.3 INFRASTRUCTURE

Artemovsky, the nearest settlement, is located 15 km to the southwest and the regional centre of Bodaybo 75 km to the southeast. The Bodaybo-Kropotkin-Perevoz road runs through the site. The site is covered with a network of gravel and dirt roads, currently used by the placer gold miners. In winter, the roads within the site require snow clearing. Cargo is delivered to the Krasny site from the Kopylovskoye LLC base (Bodaybo) by all-terrain trucks. The bulk of the cargo is delivered to the base from the nearest railway station of Taksimo (Baikal Amur Mainline) along the road for a distance of 220 km. During the navigation period it is possible to deliver cargo by water along the Lena and Vitim Rivers from the Osetrovo (Ust Kut) river port to Bodaybo (750 km). Bodaybo has an airport capable of handling medium capacity cargo and passenger airplanes from the cities of Irkutsk (1,200 km) Bratsk, Mirnyi, Kirensk and Ust Kut.

The power supply in the area is provided by the Mamakan Hydroelectric Power Station along the LEP-110 kV and the LEP-220 kV Taksimo-Bodaybo power lines. The LEP-110 kV and LEP-36 kV power lines run next to the site area.

4.4 PHYSIOGRAPHY AND CLIMATE

Located within the Patomsk highland the deposit area is mountainous with elevations of between 800 m to 1,200 m, heavily dissected by rivers within a generally rounded topography. Locally the elevations range between 500 m and 600 m. The slopes average between 10° to 15° , up to a maximum of 30° , and are covered with scree. The bed rock exposure in the territory is poor, outcrops are locally distributed. Watershed areas and slope



bases are capped with glacial deposits several metres thick. The river valleys are wide, often boggy, alluvium thicknesses can reach up to 50 m. The majority of the valleys are complicated with technogenic deposits from previous placer mining. Technogenic dumps have thicknesses of tens of metres, especially along the Teply Stream, which makes exploration difficult.

The project area is crossed by a network of rivers and streams, which almost entirely freeze over in winter. The Bodaybo River and its tributaries, the Krasny, Teply and Mokry Streams, are the main waterways in the area. The smaller valleys often host seasonal short creeks. The majority of the rainfall and water discharge from snow melt occurs in May, June and August. Permafrost is widespread along the slopes and watersheds, especially on northern slopes. Thawed zones are found under the river beds. By the end of the summer, the seasonal thawing depth is up to 2 m on the southern slopes and 1 m on northern slopes.

Fauna and flora are typically Siberian, taiga type. Forest is practically absent within the project area, due to the removal of trees associated with placer mining operations. In the valleys the vegetation consists of dense willow shrubs, young aspen, birch, spruce and larch trees. The higher slope and watershed areas are covered with thickets of cedar elfin wood.

The climate in the area is extreme continental ranging between 54° C in January to $+34^{\circ}$ C in July; the average annual temperature is 6° C. The average annual amount of precipitation is 350 mm, the majority falling within the summer. Snowfall begins in the middle or the end of September and thaws out completely by the end of June. The thickness of the snow cover in the valleys reaches between 2 m to 4 m.

4.5 LOCAL RESOURCES

The Krasnoe deposit area is economically well developed near to the hardrock and placer deposits, however the surrounding area is sparsely populated. The nearest settlements located within the area are Artemovsky (population 1,300), Kropotkin (population 1,450) and Marakan (population 400). The bulk of the local population is employed by the Golets Vysochaishy GOK and other enterprises (Verninskoye, Nevskoye, placer deposits) at different stages of exploration and development. In addition to the local population Bodaybo may also be a source of manpower.



5.0 GEOLOGY AND MINERALISATION

5.1 GEOLOGY

The Krasnoe deposit is located within the northern limb of the Bodaybo syncline, one of the main structures in the central part of the Bodaybo synclinorium. The Bodaybo syncline is composed of sedimentary and metamorphic rocks from the Bodaybo Series of the Upper Riphean and is capped with loose Quaternary deposits.

Lithologically the Bodaybo Series can be divided into two sections, the lower section is composed of the Aunakitskaya and Vachskaya Suites, consisting of carbonaceous monomictic quartz and sandy-shale deposits. The upper section includes the Anangrskaya, Dogaldynskaya and Iligirskaya Suites and is characterised by sandy and terrigenouscarbonate deposits. Within the Krasnoe deposit are rocks from the Aunakitskaya, Vachskaya and Anangrskaya Suites outcropping under the Quaternary deposits.

Within the deposit area the Quaternary deposits consist of moraine and glacial deposits with thicknesses ranging from 4 m to 20 m.

Intrusive magmatic rocks have not been found within the deposit area, though they are widespread on the periphery of the Bodaybo zone and are predominantly represented by granitoids.

The deposits within the Bodaybo structural-facies zone have been extensively subjected to progressive zonal regional metamorphism with signs of contact metamorphism and regressive metamorphism in the vicinity of the granitoids within the Konkudero-Mamakansky Complex. Metamorphic faulting is also well developed within the deposit area.

Hydrothermal and metasomatic alteration, resulting in the recrystallisation of rock cement, redistribution of carbonaceous substances, intensive iron-magnesium-calcium carbonatisation and sulphidisation are typical for Riphean formations. These transformations are mainly seen in anticlinal structures and sites of increased fracturing.

Folds strike sub-latitudinally, which is generally typical for the Bodaybo River basin where the Krasnoe deposit is located. Anticlinal folds are often asymmetric with steeper southern limbs. Synclines are usually smoother, with wide hinges. Cleavage and schistosity, small folds, boudinage, mineral linearity, co-folded longitudinal faults, low-amplitude joints and fracturing all occur. The network of abyssal faults plays a significant role in the structural formation of the area, multiple activation of these has resulted in the complication of earlier formed structures and the formation of new structures.

The Krasnoe deposit is located within the influence zone of the Verkhne-Bodaibinsky interblock abyssal fault, expressed on the surface in the linear folding of the regional shear zone. Intense, multi-scale folding complicated with numerous disjunctive faults, zones of micro-folding, boudinage and tectonic melange is typical for the area. The deposit site hosts the Verkhne-Bodaibinskaya anticline (in the north) and the Rudnaya anticline (in the south) with the Lozhkovaya syncline located between them.

Faulting is represented by sub-latitudinal upthrows and downthrows, submeridional downthrow-shifts and zones of increased fracturing and shearing. Sub-latitudinal faults



concentrating in the flat limb of the Rudnaya anticline and the central parts of the Verkhne-Bodaibinskaya anticline are the most widespread and these areas represent a part of the shearing zone. The fault lengths range from between 10 m to 100 m to 4 km to 5 km, occasionally more, with an en echelon arrangement. Tectonic wedges are usually represented with ground-in fractures or fracture zones filled with quartz, quartz-sulphide veinlets and quartz veins. The orientation of the sub-latitudinal faults conforms with orientation of the main structures; they are usually steeply dipping, at angles of 60° to 80°. The amplitude of displacement along the tectonic wedges is small, approximately ranging from a few centimetres to a few metres. Submeridional downthrows-shifts occur as series of contiguous steeply dipping fractures with the planes and slickensides. The displacement amplitude is insignificant, from 0.5 m to 1.0 m, occasionally up to 5 m. The length of these faults does not exceed a few hundred metres.

The geological map of deposit area is presented in Figure 5.1.



Figure 5.1: Geological Map of the Deposit Area

The Krasnoe gold deposit is located in the southern area of the cognominal ore field, in the upper areas of the Teply and Krasny Streams, right tributaries of the Bodaybo River. The development is composed of Upper Riphean carbonaceous shales, sericite-quartz shales with rare interlayers of sericite-quartz sandstones from the Vachskaya Suite (R_3vc). These are underlain by interstratified quartz sandstones and carbonaceous shales from the Aunakitskaya Suite (R_3au) and are capped by interstratified polymictic feldspar-quartz sandstones and carbonaceous phyllites from the Anangrskaya Suite (R_3au).

The deposit occurs in the Vachskaya Suite of the Upper Riphean in the form of two saddle zones of vein-veinlet-disseminated quartz sulphide mineralisation, a Lower and an Upper zone.

Mineralised zones are confined to the axial part of the main deposit's structure, the Rudnaya anticline. The anticline represents an overturned fold striking ESE, both limbs of which are dipping to the NNE, 85° for the northern limb and 70° to 75° for the southern. The limbs are composed of interstratified sandstones and phyllites with thicknesses of up to 60 m. The fold is complicated by large scale faults.

The mineralised zone typically contains lens-like and complex folded quartz-sulphide veinlets (from 2 to 3 to 5 to 7 veinlets per metre), quartz veins, development of sparsely disseminated pyritic mineralisation, as well as intensive tectonic and hydrothermal-metasomatic alteration as described earlier.

The tectonic alteration of the rocks in the area is represented with multi-scale, predominantly small scale folding, zones of shearing and cataclasis of rocks, and hydrothermal-metasomatic alteration, specifically silicification, carbonatisation and sulphidisation, generally leading to the formation of metasomatites close to the beresitic type.

An oxidation zone occurs at the deposit; the lower boundary of the oxide ores are located around 20 m to 100 m from the surface.

5.2 MINERALISATION

Two types of the gold mineralisation are identified within the Krasnoe ore field: veinletdisseminated quartz-sulphides, lithologically/structurally controlled, and quartz veins with limited development. As a rule, these two types of gold mineralisation are spatially concurrent.

Quartz-sulphide mineralisation forms veinlet-disseminated zones within metamorphogenic zones of sulphide mineralisation in the structurally complicated areas. The internal structure of the zones is complex and consists of a dense network of hetero-oriented veinlets, lenses and nests of quartz occurring together with scattered dissemination of sulphides occurring as more than 1% to 3% in schistose and fractured host rocks.

Sulphide mineralisation is typical over the entire ore field with a wide distribution, mainly represented by pyrite. Pyrrhotite, chalcopyrite, sphalerite, galena occur to a lesser degree. Pyrite occurs in the following morphological varieties:

- Powdered pyrite (pre-ore);
- Inclusions (poorly expressed);
- Porphyroblastic cubic pyrite;
- Lens-like pyrite; and,
- Pyrite in quartz veinlets.

The gold grades in the different pyrite varieties vary. The lens-like, aggregate cubic and cubic porphyroblastic pyrite varieties are considered to contain the most gold.

The pyrite contained within quartz veinlets is the most widespread within the deposit, but is considered to be low grade, from 0.02 g/t Au to 0.8 g/t Au. The thickness of the quartz-pyritic veinlets ranges from fractions of a millimetre to 2 cm and they occur in the host



rocks with densities ranging from 1 veinlet per 1 m^2 to 5 to 6 veinlets per 1 m^2 . The quartz in the veinlets is white, semi-transparent and amorphous.

The quartz mineralisation is localised in veins and veinlets which usually have lens-like shapes, thicknesses ranging from 0.2 cm to 0.5 m and lengths ranging from a few centimetres to several metres. Quartz vein fields and zones are confined to the southern limb of the Rudnaya anticline. They are located within the sub-latitudinal zones (strips) of scattered quartz and quartz-sulphide mineralisation. The distribution of quartz vein material in these strips is uneven and intervals with elevated concentrations alternate with barren areas. Only the areas which have undergone additional hydrothermal alteration are considered to be of interest. The veinlets are divided into two types, tabular sub-latitudinal veinlets with consistent dimensions and strike, and sub-horizontal and sub-meridional veinlets with inconsistent sizes.

Gold is predominantly found in joints with pyrite or in the form of inclusions in pyrite. At the same time the highest gold-bearing variety of pyrite is the "porous" variety which also hosts inclusions of chalcopyrite, galena, sphalerite, fahl ore and pyrrhotite. Inclusions of native gold in pyrite can occur with joints with galena, chalcopyrite or sphalerite inclusions. The size of the gold grains ranges from 1 μ m to 150 μ m, with an average size of 30 μ m to 70 μ m. The surfaces of gold grains forming joints with pyrite are smooth, the edges may slightly "branch"; skeletal gold crystals are rare.

In addition, free gold is also registered, which is characterised by smooth surfaces and sizes of up to $200 \,\mu\text{m}$.



6.0 **DEPOSIT TYPE**

The geochemical signature of the ore field and the Krasnoe deposit is reflected in the secondary dispersion haloes of gold and low-contrast haloes of silver, arsenic, copper, lead and zinc.

In mineralogical terms, the Krasnoe deposit is described as a gold-quartz low-sulphide type of formation.

7.0 EXPLORATION

A systematic geological survey of the territory began in 1937. From 1937 to 1958, the 1:200000 and 1:100000 scale geological surveys were completed, and specialised geological and geomorphological studies were performed. The 1:200000 and 1:100000 scale geological maps were produced based on these results. Further in the late 1950's to early 1960's a region of the Bodaybo synclinorium was geological surveyed on 1:50000 and 1:25000 scales. Geological surveying was accompanied by general prospecting. In 1968, the work on drawing up the 1:50000 scale geological maps was completed. Considering the structural setting analysis and the criteria and signs of gold mineralisation, the area was sectioned into prospective and priority areas for more detailed studies.

From 1971 to 1974, the East Siberian Research and Development Institute of Geology, Geophysics and Mineral Stock (VostSibNIIGGiMS) analysed localised patterns of hard-rock gold in the central part of the Lena gold field based on previous studies and drafted a 1:100000 scale map of gold mineralisation for the Bodaybo Area supported by forecasts and outlook assessments for hard-rock gold sites.

The Krasnoe veinlet-disseminated morphological mineral deposit was identified within the cognominal ore field during the course of identification of the potentially ore-bearing areas within the complex syncline in the Bodaybo territory from 1978 to 1979.

During 1981 to 1983, exploration was completed within the Artemovsky ore cluster. Prospecting traverses, lithogeochemical and quartz surveys, trenches and core drill holes were completed within the Krasnoe ore field. As a result, three quartz-sulphide zones were identified and traced within the mineralisation area. Two ore bodies were identified in the No. 1 quartz-sulphide zone. The first ore body was classified as C_2 category gold reserves, estimated at 1 t. The second ore body as P_1 category prognostic resources, estimated at 1.4 t. Within zone No. 3, at depths of between 150 m to 300 m, two "blind" ore bodies with the strike lengths of up to 900 m, thicknesses from 6 m to 12 m and average grades of between 2.0 g/t Au to 2.6 g/t Au were identified. The total P_1 category prognostic resource of the mineral occurrence was 19.3 t of gold at an average grade of 2.57 g/t Au. The estimate was completed using the following parameters: cut-off grade 1 g/t Au; minimum commercial block grade 1.5 g/t Au and minimum thickness of ore bodies set at 3 m. A negative assessment was reported for the remaining area.

From 2004 to 2005 exploration continued within the Krasnoe ore field. As a result, the Verkhne-Bodaibinskaya anticline structure, especially within its periclinal closure, was detailed and the control factors of the gold mineralisation were described. Eight gold-bearing zones were identified within the outlined zones of intensive sulphide mineralisation and silicification in the project area within the Verkhne-Bodaibinskaya anticline.

From 2010 to 2012, the Krasnoe mineral occurrence was investigated by prospecting and estimation operations. The work included drifting of surface mine workings and core drilling. Based on these results, the option-by-option reserve calculations and prognostic resource estimates for three cut-off grades (0.7 g/t Au, 1.0 g/t Au and 1.3 g/t Au) was produced. The C₂ category reserves were declared at 34,032.58 kg of gold with an average grade of 2.28 g/t Au, and the prognostic resources for the P₁ category totalled 31,062.68 kg of gold at an average grade of 2.55 g/t Au and P₂ category resources were 26,299.59 kg of gold at an average grade of 3.04 g/t Au.



Currently Krasny LLC is still completing exploration at the mineral occurrence, which will result in the preparation of a cut-off grade estimation report, calculation of reserves and registration of these reserves on the state balance. Since 2011 up to the end of 2015, 31,500 m were drilled and about 10,000 m of trenches were excavated.



8.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

All surface workings and drill hole cores were sampled. Sampling was carried out according to established Russian standards.

8.1 CHANNEL SAMPLING

Channel samples were collected using machine/manual methods taking into account the lithology. Channel sections of 10 cm by 5 cm and 3 cm by 5 cm were excavated. The entire length of a trench was sampled. After the channel sample material was collected, the channel was cleaned with a brush or a broom and the sweepings were added to the sample material. The following equipment was used for channel sampling: angle grinder, electric hammer, diamond discs and rock chisels. The samples were packaged into double bags with a dense polyethylene inside layer.

The determination of the optimum channel section was carried out via test studies. In addition to the sample collected from the main channel with a section of 3 cm by 5 cm, a sample from the adjacent twin channel with the section of 5 cm by 10 cm from the same interval was collected. This provided a total of 17 adjacent twin samples collected. Comparative analysis of the results showed a good convergence, and the researchers came to the conclusion that the 3 cm by 5 cm sections were representative and could be used as the primary size section.

For sample processing quality control each batch of samples was supplemented with blank samples; previously samples of Chamotte were used as the blank sample material. Currently barren material from the prospecting and estimation drill holes analysed in the analytical laboratory of "Stewart Geochemical and Assay", LLC (Moscow) is used. These samples have been analysed using the fire assay method with an atomic absorption finish and have a gold grade of <0.01 g/t Au. Operational internal control was undertaken using standard samples which were included into each sample batch sent for analysis to the main laboratory.

8.2 CORE SAMPLING

Core drill holes were sampled after photographic documentation and detailed geological logging. Samples were collected from the bed rock intervals of the drill core, the capping loose alluvial-deluvial deposits were not sampled. The sampling intervals were determined taking into account the geological boundaries and the recovery of the core during the drilling runs. Intervals with a core recovery difference of more than 5% to 10% were sampled separately.

Within the mineralised zone, the average length of sample intervals was 1 m, in the host rocks it was 2 m. In order to improve the representativeness of the sampling in 2011, the whole core, with the exception of specimens collected for mineralogical and petrographical study, were collected into the sample. Later the absence of coarse gold in the ores of the site was proved, and starting from 2012 half of the core was sampled.

Core splitting was carried out on site using a core saw with diamond discs, diameter of 350 mm. Samples were crushed to the size of 7 cm to 10 cm, and were packed into double bags with a polyethylene internal layer and external layer of jute. The average sample weight collected from the ore zone intervals was 4.0 kg, from the host rocks intervals it was 8.0 kg.

Blank samples for sample processing quality control were added to each batch of samples. Operational internal control was also undertaken using standard samples which were included into each sample batch sent for analysis to the main laboratory. On average every 45th sample was a standard sample.

8.3 SAMPLE PROCESSING AND ANALYSIS

The sample preparation was carried out according to the sample processing flowsheet shown in Figure 8.1.



Figure 8.1: Processing Flowsheet for Channel Samples

After registration, the initial sample was placed into an electric furnace. After drying, the sample was weighed, sent to the crushing department and subjected to two-stage crushing (jaw crusher, roll crusher).

Then a weighed sample of 1 kg was collected from the -1 mm class crushed sample material using the quartering method. Before the weighed sample was collected the sample material was thoroughly mixed. Subsequently this material was ground to the size of -0.074 mm, and a weighed sample of 200 g was collected from the ground material for fire assay.

Every 50th sample, sent for analysis was a standard sample. Krasny LLC uses gold-bearing ore material acquired from Irgiredme, JSC (Irkutsk) as the sample standard. Two types of standard samples were used during the batch processing: ZSR AuBL-IATs-09 grade of <0.005 g/t Au and ZSR IATs-10-11 grade of 0.5 g/t Au ± 0.03 g/t Au.

Samples were packed into paper envelopes and, in accordance with the register, placed into polypropylene bags, tied and sealed. The residual sample material weighing around 750 g to 800 g was packed into paper envelopes, placed in polypropylene bags in accordance with the register, tied, labelled with the register number and sent to the warehouse. These duplicate samples are stored in the warehouse, and, when necessary, weighed samples for check analyses and other types of analyses are collected from them.

Before 2014, the chemical analyses were completed by Stewart Geochemical and Assay, LLC (Moscow) by the fire assay method with a detection limit of 0.01 g/t Au. Currently the samples are assayed in the GV Gold (Vysochaishy, OJSC) laboratory by 3rd category accuracy quantitative fire assay, accurate within the range of 0.1 g/t Au to 100 g/t Au. The external control is carried out using the fire assay method in the SGS Vostok Limited CJSC laboratory in Chita. In total, the database contains fire assays of 34,302 core samples, and 19,333 channel samples collected from trenches, including the check channel samples.

8.4 QA/QC ANALYSIS

The internal control samples are collected from duplicates of the regular samples in the on the basis of around 2% of the total number of samples. A portion of these duplicates, around 1% of the total, is sent to the external control laboratory. The fire assay results are systematically checked using standard samples. Every 50th sample sent for analysis is a standard sample. Krasny LLC uses gold-bearing ore material acquired from Irgiredmet OJSC (Irkutsk) as standard samples. Three types of standard samples were used: ZSR AuBL-IATs-09 grade of <0.005 g/t Au, ZSR IATs-10-11 grade of 0.5 g/t Au \pm 0.03g/t Au and ZSR IATs-8-12 the grade of 0.4 Au g/t.

In Micon's opinion, for an adequate internal and external control, the number of control samples should be not less than 5% of the total number of regular samples (not less than 30 samples for each of the 4 classes according to state standard and internal regulations of the laboratory).

Micon carried out its own analysis of quality control for internal assays (626 pairs from 2014 to 2016) and external assays (388 pairs from 2015 to 2016).

8.4.1 Internal Control

The general results of the internal quality control analysis carried out by Micon are displayed in Table 8.1 and Figure 8.2.



Grade Class (g/t Au)	Pairs of Samples	Original Assay Average (g/t Au)	Duplicate Assay Average (g/t Au)	Average of Pairs (g/t Au)	Mean Absolute Error	Mean Error (%)
<0.3	141	0.147	0.205	0.176	0.063	37.6%
0.3-0.5	78	0.392	0.370	0.381	0.059	18.8%
0.5-07	67	0.590	0.571	0.580	0.085	16.7%
0.7-1.0	82	0.842	0.829	0.835	0.129	16.9%
1.0-5.0	194	2.524	2.484	2.504	0.261	11.6%
>5.0	65	7.925	7.497	7.711	0.603	8.7%

Table 8.1: Analysis of the Internal Quality Control Results 2014 to 2016

Figure 8.2: Internal Control - Mean Absolute Error by Grade Classes 2014 to 2016



The results of the analysis show that the mean error of the analysis naturally decreases with the increase in the gold grade from 37.6% for the <0.3 g/t Au class to 8.7% for the >5 Au g/t class.

Figure 8.3 displays a comparison of the original and duplicate analyses for each pair of samples. It is evident from the diagram that a significant number of samples are within the absolute error range of $\pm 20\%$. In addition a large percentage of samples for the grade interval of 0.1 g/t Au to 1.1 g/t Au fall outside of the absolute error range of $\pm 20\%$ which is typical.

Figure 8.4 illustrates the accuracy of the laboratory analyses based on the internal control results. The bulk of the data (90%) has an absolute error of less than 50%, and the error of a 50% of the analyses does not exceed 9.6%.







Figure 8.3: Internal Control - Comparison Control Comparison of Original and Duplicate Assays

Figure 8.4: Internal Control - Correlation of the Original and Duplicate Assays 2014 to 2016




8.4.2 External Control

The general results of the external quality control analysis carried out by Micon are displayed in Table 8.2 and Figure 8.5.

Grade Class (g/t Au)	Pairs of Samples	Original Assay Average (g/t Au)	riginal Assay Duplicate Assay Average Average (g/t Au) (g/t Au)		Mean Absolute Error	Mean Error (%)
< 0.3	133	0.103	0.137	0.120	0.032	36.6
0.3-0.5	10	0.405	0.383	0.394	0.062	16.6
0.5-07	65	0.599	0.590	0.595	0.140	25.4
0.7-1.0	54	0.857	0.872	0.865	0.174	20.4
1.0-5.0	107	2.193	2.040	2.117	0.283	14.8
>5.0	20	6.771	6.940	6.855	0.394	5.9

Table 8.2: Analysis of the External Quality Control Results 2015 to 2016





A general pattern of the mean error decreasing with the increase in the gold grade from 36.6% for the <0.3 Au g/t class to 5.9% for the >Au 5 g/t class, is registered here as well.



Comparison of the original and duplicate analyses for each pair of samples presented in Figure 8.6 shows that a significant number of samples are within the absolute error range of $\pm 20\%$. However, for the grade interval of 0.5 g/t Au to 1.0 g/t Au, a considerable dispersion of the points, representing the analyses pairs, fall outside of the absolute error range of $\pm 20\%$.



Figure 8.6: External Control - Comparison of Original and Duplicate Assays

Figure 8.7 illustrates the accuracy of the laboratory analyses based on the external control results. The bulk of the data (85.8%) has an absolute error of less than 50%, and the error of 50% of the analyses does not exceed 14%.





Figure 8.7: External Control - Correlation of the Original and Duplicate Assays 2015 to 2016

In general, the gold fire assay results show satisfactory convergence and can be used for resource estimation. However, direct comparison of the original and duplicate samples reveals a significant dispersion of data beyond the error margin of $\pm 20\%$. The most likely reason for this is insufficient attention during the sample preparation processes. Micon recommends that the sample preparation processes should be investigated.

9.0 MINERAL RESOURCE ESTIMATES

9.1 NPF GEOPROGNOZ RESERVES

In April 2016, NPF Geoprognoz drafted the cut-off grade estimation report with the reserve calculations for Krasny LLC. In accordance with this estimate the C_2 category reserves for the central part of the Upper ore body as at 1st January 2015 totalled 6.317 Mt of ore containing 9,767 kg of gold at an average grade of 1.55 g/t Au.

9.2 MIRAMINE RESOURCE ESTIMATE

A mineral resource estimate for the Krasnoe deposit, in accordance with the guidelines of the JORC Code (2004), was first prepared by the Russian company Miramine in 2013. The mineral resources were estimated at a cut-off grade of 0.8 g/t Au within the optimum open pit designed for a gold price of US\$1,670/oz. Table 9.1 displays the mineral resources as at 25^{th} March 2013.

JORC Category	Tonnage (Mt)	Gold (g/t Au)	Gold (t)	Gold (Moz)	
Indicated	4.3	1.53	6.6	0.21	
Inferred	22.5	1.60	36.1	1.16	

Table 9.1: Krasnoe Deposit Mineral Resources as at 25th March 2013

9.3 MICON RESOURCE ESTIMATE

The Krasnoe deposit mineral resources were estimated by Micon utilising Surpac software for the block modelling.

The mineral resources estimated by Micon are based on data from 163 drill holes and 34 trenches. The basic gold statistical parameters were calculated and the sample grades were composited (adjusted to an identical length interval) and subjected to additional statistical processing. The block model was based on the composites and the block model tested for errors.

In accordance with the guidelines of the JORC Code (2012) the estimated mineral resources were classified as Indicated and Inferred.

9.3.1 Database

All new exploration data are promptly input into the database by Krasny LLC. The database contains the drill hole collar coordinates, sampling intervals, assay results, inclinometry, lithology and secondary alteration rock details, core recoveries, drilling and trenching dates, the personnel engaged in the drilling, mining and logging, etc.

The drill hole and trench data contained in the database and used to calculate the mineral resources are summarised in Table 9.2.



Туре	Number of Drill Holes/Trenches	Minimum Depth/Length (m)	Maximum Depth/Length (m)	Average Depth/Length (m)	Total (m)
Drill Holes	163	26.7	450.4	194	31,490,9
Trenches	34	78	890	312	10,602

Table 9.2: Drill Hole and Mine Workings Data Contained in the Database

The minimum sample length is 0.15 m, the maximum 2.75 m, with the average approximately 1 m. In total 9,325 core and channel samples were used to calculate the resources. The inclinometry of the drill holes was gauged every 10 m down the shaft. Table 'Survey' contains 3,389 records on the drill holes' shafts curving.

The database underwent a number of checks for confirmation of its compliance with certain rules and for elimination of the overlapping intervals. No errors were detected.

9.3.2 Wireframes of Mineralised Zones

The ore zones were contoured using the cut-off grade of 0.4 g/t Au. In addition for low grades in marginal samples preference was given to groups of two to three samples and single samples were only included within the contour if there were a relatively high grade (not less than 1 g/t Au). The contours were referenced at the end of the samples in the drill holes.

Figure 9.1 displays the contours of the Upper ore body divided into two ore zones: the Southern and the Northern.







Wireframes were constructed using the contours for each mineralised zone. In total nine wireframes were constructed, this includes five elongated ore zones and four for smaller lense-like bodies. Figure 9.2 displays the relative position of the ore zones in plan view.



Figure 9.2: Krasnoe Deposit Ore Zones (Plan View)

9.3.3 Geostatistics

Intersections of the drill holes with the wireframe were recorded into the database using Surpac software. Coordinates of the central points of the samples were calculated and used for the estimation of the statistical parameters that are displayed in Table 9.3.

Area	Sampling Type	Number of Samples	Minimum (g/t Au)	Maximum (g/t Au)	Mean (g/t Au)	Median (g/t Au)	Standard Deviation.	Coefficient of Variation
	Channel	1,016	0.000	17.156	1.138	0.618	1.535	1.349
Upper	Core	7,429	0.000	107.895	0.912	0.370	2.255	2.471
	Total	8,445	0.000	107.895	0.939	0.410	2.182	2.322
Lower	Core	760	0.000	22.643	1.422	0.726	2.219	1.561
Lower Western	Core	119	0.001	4.070	0.519	0.190	0.827	1.592
	Channel	1,016	0.000	17.156	1.138	0.618	1.535	1.349
Total Deposit	Core	8,308	0.000	107.895	0.953	0.390	2.243	2.353
	Total	9,324	0.000	107.895	0.973	0.420	2.178	2.237

 Table 9.3: Main Statistics for Gold

9.3.4 **Top-Cutting of Outlier Assays**

In order to determine the outlier threshold, the distribution of grades in the sample population falling within the wireframe models was examined. Figure 9.3 shows a log-probability plot for gold grades and Table 9.4 displays the statistical parameters used for the determination of the outlier grades.

Parameter	Value
Number of Samples	9324
Mean	0.973
Standard Deviation	2.178
Mean+2 SD	5.329
Mean+3 SD	7.506
95 Percentile	3.575
99.5 Percentile	10.516

 Table 9.4: Statistical Parameters for the Determination of Outliers

Figure 9.3: Cumulative Frequency Distribution of Gold Assays



The threshold limit value was selected visually by determination the break of the smooth line in Figure 9.3 considering the statistical parameters. In Micon's opinion, the gold grades exceeding 19.23 g/t Au represent outlier grades for the Krasnoe deposit. In the absence of additional information on these high grades it was decided to restrict all outliers to this specified value. There were nine outliers representing 0.1% of the total number of assays. The main statistical parameters calculated for the gold grades after restriction of the outlier assays are displayed in Table 9.5.



Area	Sampling Type	Number of Samples	Minimum (g/t Au)	Maximum (g/t Au)	Mean (g/t Au)	Median (g/t Au)	Standard Deviation.	Coefficient of Variation
	Channel	1,016	0.000	17.156	1.138	0.618	1.535	1.349
Upper	Core	7,429	0.000	19.230	0.888	0.370	1.599	1.800
	Total	8,445	0.000	19.230	0.918	0.410	1.593	1.735
Lower	Core	760	0.000	19.230	1.414	0.726	2.149	1.520
Lower Western	Core	119	0.001	4.070	0.519	0.190	0.827	1.592
	Channel	1,016	0.000	17.156	1.138	0.618	1.535	1.349
Total Deposit	Core	8,308	0.000	19.230	0.931	0.390	1.656	1.779
	Total	9,324	0.000	19.230	0.954	0.420	1.645	1.725

Table 9.5: Main Statistics for Gold Grades after Removal of Outliers

9.3.5 Compositing

The length of 1.0 m was selected for compositing the gold grades as this is closest to the average length of the sampling interval. Composites were generated from the database for each of the nine wireframes using the Surpac best adjustment algorithm permitting a variation of the sample's length within the first percent's from the set value. In this case the data loss was minimised and the length of the bulk of the composites varied from 0.97 to 1.04 m. The main statistical parameters for the composites are displayed in Table 9.6.

Table 9.6: Main Statistics for Composite Gold Grades

Залежь	Sampling Type	Number of Samples	Minimum (g/t Au)	Maximum (g/t Au)	Mean (g/t Au)	Median (g/t Au)	Standard Deviation.	Coefficient of Variation
	Channel	1,000	0.000	13.500	1.139	0.643	1.463	1.284
Upper	Core	7,219	0.000	19.230	0.889	0.411	1.500	1.687
	Total	8,219	0.000	19.230	0.920	0.440	1.498	1.629
Lower	Core	750	0.000	19.230	1.406	0.761	2.019	1.436
Lower Western	Core	121	0.001	4.070	0.511	0.190	0.817	1.601
	Channel	1,000	0.000	13.500	1.139	0.643	1.463	1.284
Total Deposit	Core	8,089	0.000	19.230	0.932	0.430	1.556	1.670
	Total	9,089	0.000	19.230	0.954	0.459	1.547	1.621

9.3.6 Variography

To determinate the nugget effect value a downhole variogram was calculated using the sample composites falling within the wireframes (Figure 9.4). The figure shows that the nugget effect value is small - 0.19.





Figure 9.4: Downhole Variogram to Determine the Nugget Effect Value

Additional experimental variograms were created for the Upper ore body and their models taking into account the earlier determined nugget effect. An example in Figure 9.5 displays the variogram created along the strike of the Upper southern mineralised zone.

No reliable variograms were created for the Lower ore body due to insufficient data. Therefore the interpolation was carried out using bedding elements.







9.3.7 Search Ellipsoids

The parameters from the semi-variogram models were used to determine the size and orientation of the search ellipsoids for each wireframe. This information is presented in Table 9.7.

Area	Bearing (°)	Plunge (°)	Dip (°)	Search Radius along the Major Axis	Major / Semi-Major	Major / Minor
Upper Southern	293	19	-79	52	3	5
Upper Northern	295	29	-65	35	2	3
Lower 1	298	0	-62	45	2,5	4
Lower 2	296	0	-55	45	2,5	5
Lower Western	296	0	0	45	1	2

Table 9.7: Parameters of the Search Ellipsoids

9.3.8 Block Model

The unit cell dimensions of the Krasnoe deposit block model are 20 by 10 by 5 m. These dimensions correspond to the best fit for the mineralisation morphology and the sample data distribution. For each block model cell, the Surpac Partial Percentage function calculated the percentage for entry into the wireframe models. This value was used later for the mineralised zone volume calculations. The block model parameters are presented in Table 9.8.

Table 9.8: Block Model Parameters

Parameter	X	Y	Z
Minimum Coordinates	367,700	6,463,700	550
Maximum Coordinates	369,500	6,464,600	1,050
Block Size (m)	20	10	5
Rotation	0	0	0

9.3.9 Block Model Estimation

The inverse distance weighted method with power 3 (IDW³) was used for the block model estimation. A minimum of three and and a maximum of ten samples falling within the corresponding wireframes were used for the interpolation of each cell in the block model. The influence of one drill hole was restricted to three samples. In the majority of cases the interpolation was conducted in two runs; the second run was applied if the number of samples falling within the ellipsoid was less than two. In this case the search radius was increased twofold. If there were blank cells after the second run, then a third run was performed with the initial radius increased four-fold.

Figure 9.6 displays a 3D view of the Krasnoe deposit block model.



Figure 9.6: 3D View of the Block Model View from the Northeast



9.3.10 Block Model Verification

The block model verification included the following:

- Visual comparison of the grades in the drill holes with the grades in the block model cells; and,
- Comparison of the composites declustered within the cells with the interpolated grades.

9.3.10.1 Visual Comparison of Drill Hole and Block Model Grades

Visual comparison of the grades in the drill holes and in the block model cells was completed. The comparison did not detect any material bias. An example of such comparison is demonstrated in Figure 9.7.





Figure 9.7: Comparison of Drill Hole and Block Model Cell Grades

9.3.10.2 Comparison of Declustered Composites and Block Model Grades

All composites falling within the block model cells were declustered, i.e. the average value was calculated for these composites and assigned to the coordinates of the centre of that cell. The average grades for the points were imported into the block model for comparison of the grades of the composites and the interpolated cell values. This analysis provides insight into the accuracy of the grade interpolation. The resulting diagram is presented in Figure 9.8.

The diagram demonstrates that the dispersion of values, i.e. their deviation from the regression line 1:1, is not significant. The correlation coefficient between the pairs of values is 0.73, which is indicative of a good convergence of the data.







Figure 9.8: Comparison of Declustered Composite and Block Model Grades

In addition paired diagrams of the interpolated and declustered data distribution were constructed. Figure 9.9 shows that the distribution curves are very close. The good correlation of interpolated and declustered data indicates that in the course of the interpolation, the gold grades were not excessively "dispersed" or smoothed within the block model.

Figure 9.9: Comparison of the Grades of Gold in the Declustered Composites and the Block Model Cells



9.3.11 Mineral Resource Classification

The mineral resources estimated within the wireframes were classified in accordance with the guidelines of the JORC Code (2012). The mineral resources were assigned to the categories of Indicated and Inferred. The categorisation was based on the following principles:

- Those cells of the block model that fall within the exploration grid of 40 m to 50 m by 40 m to 50 m were assigned to the Indicated category; and,
- Other cells which did not satisfy these conditions were assigned to the Inferred category.

Figure 9.10 illustrates the Krasnoe deposit block model, the cells of which are coloured according to the assigned categories (Indicated – green, Inferred – blue).



Figure 9.10: Krasnoe Deposit Classified Mineral Resources (Plan View from the Northeast)

9.3.12 Krasnoe Deposit Resources at Different Cut-Off Grades

This section is presented solely for the informational purposes as it describes mineral resources not defined using the guidelines of the JORC Code (2012), but resources in general for the block model (Table 9.9). According to Article 20 of the JORC Code (2012) "a mineral resource is not an inventory of all mineralisation drilled or sampled, regardless of cut-off grade, likely mining dimensions, location or continuity. It is a realistic inventory of mineralisation which, under assumed and justifiable technical, economic and development conditions, might, in whole or in part, become economically extractable."



Cut off	Ind	icated Min	eral Resour	ces	Inferred Mineral Resources			
(g/t)	Tonnage (kt)	Gold (g/t Au)	Gold (koz)	Gold (t)	Tonnage (kt)	Gold (g/t Au)	Gold (koz)	Gold (t)
0.0	11,113	0.86	307	9.54	20,722	1.18	786	24.44
0.1	10,028	0.95	305	9.49	18,937	1.29	783	24.35
0.2	9,240	1.01	301	9.37	17,604	1.37	777	24.16
0.3	8,421	1.09	295	9.17	16,078	1.48	765	23.79
0.4	7,592	1.17	285	8.88	15,009	1.56	753	23.41
0.5	6,710	1.26	273	8.49	13,282	1.71	728	22.65
0.6	5,919	1.36	259	8.05	11,902	1.84	704	21.90
0.7	5,232	1.45	245	7.61	10,725	1.97	680	21.15
0.8	4,588	1.55	229	7.12	9,851	2.08	659	20.49
0.9	3,927	1.67	211	6.56	9,354	2.145	645	20.07
1.0	3,414	1.78	195	6.08	8,747	2.229	627	19.49
1.1	2,941	1.90	179	5.58	8,179	2.31	608	18.90
1.2	2,559	2.01	165	5.14	7,385	2.435	578	17.99
1.3	2,231	2.12	152	4.73	6,673	2.562	550	17.10
1.4	1,965	2.23	141	4.37	5,836	2.738	514	15.98
1.5	1,738	2.33	130	4.04	5,533	2.809	500	15.54

Table 9.9: Krasnoe Deposit Mineral Resources as at 1 st January 20	16
(for a Range of Cut-Off Grades)	

Figures 9.11 and 9.12 show the tonnage grade curves for Indicated and Inferred mineral resources, respectively.

Figure 9.11: Tonnage Grade Curve for Indicated Mineral Resources at Different Cut-Off Grades







Figure 9.12: Tonnage Grade Curve for Inferred Mineral Resources at Different Cut-Off Grades

The mineral resource estimates for the Krasnoe deposit, taking into account the final mining contour and developed in accordance with the guidelines of the JORC Code (2012), are presented in Section 10 of this report.



10.0 MINING AND MINERAL RESOURCE ESTIMATES

10.1 MAIN TECHNICAL SOLUTIONS AND MINING PARAMETERS

At the time of preparation of the present report, the technical solutions associated with the development of the Krasnoe deposit have not been elaborated to the extent which would allow deposit ore reserves to be estimated in accordance with the guidelines of the JORC Code (2012), i.e. with the detalisation at the level of a Preliminary Feasibility Study or Russian Cut-Off Grade Estimation Report for the reserves. Therefore Micon has not completed an assessment of the deposit's reserves.

The preliminary analysis, associated with the mining operations, was performed to construct a final outline of mining operations that is required for the deposit's resource evaluation. the final mining outline was prepared on the basis of the deposit block model, which is reviewed in the previous sections of the present report. Figures 10.1, 10.2, 10.3 display the plan view and sections of the model illustrating the geometry of the mineralised zones. The cells in the model containing no gold are hidden in the diagrams. The elevations of the mineralised zones range from 590 to 1,000 m. The elevations of the topography within the site immediately over the deposits range between 900 m to 1,020 m (see the ground surface land contour presented in Figure 10.1). The identified ore bodies outcrop under the scree in the southeastern part of the site and are traced to a depth of up to 400 m.

Micon proceeded with the assumption, that the Krasnoe deposit will be developed using the open pit mining method. Micon did not complete any detailed designs for the mining operations, but proceeded from the assumption that the conventional truck and shovel mining method with external dumping of waste will be used in accordance with the deposit setting. The rock will be prepared for excavation using the drill and blast method.

In the absence of any geotechnical studies associated with the substantiation of pit wall designs having been completed for the deposit, Micon based its assumptions on the information available. In particular, the safe overall angles of the pit walls in their final positions were not determined. Micon took into account the available information on the physical and mechanical properties of the deposit host rocks and the expected hydrogeological conditions, and for the purposes of the preliminary estimation used a pit wall slope angle of 45°. This value is considered to be conservative.



Figure 10.1: Krasnoe Deposit Block Model - Mineralisation Zones (Plan View)



Source: Micon 2016

Note: The legend for Figure 10.1 is presented in Figure 10.4



Figure 10.2: Krasnoe Deposit Block Model – Section along the Strike of the Mineralisation Zones (Section along the A-A Line)

Source: Micon 2016

Notes: 1. Section lines for Figure 10.2 are presented in Figure 10.1. 2. The legend for Figure 10.2 is presented in Figure 10.4



Krasny LLC

Figure 10.3: Krasnoe Deposit Block Model - Sections across the Strike of the Mineralisation Zones (B-B and C-C Lines)



Source: Micon 2016



2. The legend for Figure 10.3 is presented in Figure 10.4



Block Model Cells - Gold Grade 0.0 Au g/t to 1.0 Au g/t
Block Model Cells - Gold Grade 1.0 Au g/t to 2.0 Au g/t
Block Model Cells - Gold Grade 2.0 Au g/t to 3.0 Au g/t
Block Model Cells - Gold Grade 3.0 Au g/t to 4.0 Au g/t
Block Model Cells - Gold Grade 4.0 Au g/t to 5.0 Au g/t
Block Model Cells - Gold Grade >5.0 Au g/t
Elevation Marks Isohypses in the Plan View
Terrain Line on the Sections

Figure 10.4: Legend for Figures 10.1, 10.2 and 10.3 (Krasnoe Deposit Block Model in Plan View and on Sections)

Micon adopted the values of 6.4% for mining losses and 9.2% for dilution which were provided by Krasny LLC. These values correspond to the actual parameters of operation of similar mining enterprises, they are deemed to be conservative.

10.2 FINAL PIT CONTOUR OPTIMISATION

In order to create a final open pit outline on the basis of the block model, an optimisation analysis was performed using Whittle software. The optimisation employed the deposit site topographic surface provided by Krasny LLC. Optimisation was completed using the block model cells containing both Indicated and Inferred mineral resources.

The parameters used by Micon for the pit optimisation are shown in Table 10.1. Micon considers it possible to use these values to complete the analysis, associated with the assessment of the deposit's resources.

Item	Value	Comment
Maximum slope angle of the open pit wall in the final position (°)	45	Proposed by Micon
Losses (%)	6.4	Proposed by Krasny LLC, accepted by Micon
Dilution (%)	9.2	Proposed by Krasny LLC, accepted by Micon
Cost of overburden stripping (US\$/t)	0.92	Proposed by Krasny LLC, accepted by Micon
Cost of ore mining (US\$/t)	1.10	Proposed by Krasny LLC, asjusted by Micon
Cost of the oxide ore processing (US\$/t)	4.92	Proposed by Krasny LLC, accepted by Micon
Cost of the primary ore processing(US\$/t)	4.92	Proposed by Krasny LLC, accepted by Micon
Recovery of gold at the oxide ore processing (%)	79.0	Proposed by Krasny LLC, accepted by Micon
Recovery of gold at the primary ore processing (%)	90.0	Proposed by Krasny LLC, accepted by Micon
General running and administrative costs (US\$/t)	3.03	Proposed by Krasny LLC, accepted by Micon
Royalty, refining, gold transportation (%)	7.0	Russian Royalty + 1%
Gold Price (US\$/oz)	1,200	-

Table 10.1: Parameters for the Final Optimised Open Pit



The optimisation exercise did not use the cut-off grade, the "cash flow" option was used instead, i.e. the division into ore and waste was carried out on the basis of positive contribution of each separate block model cell to the cash flow.

In accordance with the conventional method, a sequence of final open pit shells was formed for the revenue factors ranging from 0.25 to 2.0 (36 values). For each shell in the sequence, the price of metal was multiplied by this factor. The calculation carried out for the base-case metal price value corresponds to the revenue factor value equal to one.

Applying each of the revenue factor values, the optimisation was performed for gold prices ranging from US\$300/oz to US\$2,400/oz in increments of US\$60/oz. Shell No. 1 corresponds to the price of US\$ 300/oz and Shell No. 36 to US\$2,400/oz. Shell No. 16 corresponds to the US\$1,200/oz base-case gold price value. Table 5.2 displays the main parameters of each resulting shell: tonnage of gold-bearing material in situ, tonnage of excavated 'ore' and overburden, tonnage and the average grade of metal contained in the 'ore'. The diagram showing the tonnage of 'ore' and waste and contained gold for the constructed sequence of pit shells is presented in Figure 10.5.

Shell №	Revenue Factor	Gold Price (US\$/oz)	Gold-Bearing Material in Situ (kt)	Gold in Situ (kg)	Mined Ore (kt)	Gold in Mined Ore (kg)	Gold in Mined Ore (g/t Au)	Overburden (kt)	Stripping Ratio (t/t)	Current Stripping Ratio (t/t)	Open Pit Bottom Mark (m)
1	0.25	300	62	181	53	169	2.66	68	1.06	, , ,	930
2	0.30	360	185	411	137	383	2.14	238	1.33	1.48	925
3	0.35	420	2 573	3 232	910	2 902	1.50	6 998	3.61	3.84	830
4	0.40	480	2 934	3 627	1 146	3 259	1.47	7 648	3.44	2.29	830
5	0.45	540	7 766	7 865	3 002	7 000	1.24	17 676	3.12	2.91	825
6	0.50	600	11 252	10 851	4 933	9 631	1.18	26 970	3.29	3.67	815
7	0.55	660	23 546	28 790	14 526	26 202	1.36	190 770	9.93	14.88	600
8	0.60	720	23 819	29 175	15 795	26 557	1.37	194 871	10.02	17.05	600
9	0.65	780	24 014	29 354	16 629	26 718	1.36	196 549	10.03	10.60	600
10	0.70	840	24 211	29 627	17 353	26 967	1.36	200 403	10.14	24.85	600
11	0.75	900	24 402	29 848	18 197	27 170	1.36	203 604	10.22	19.37	595
12	0.80	960	24 489	29 934	18 686	27 247	1.36	204 985	10.26	22.61	595
13	0.85	1 020	25 063	30 433	19 494	27 693	1.35	212 529	10.39	16.03	595
14	0.90	1 080	25 205	30 570	19 988	27 817	1.35	214 904	10.44	19.70	595
15	0.95	1 140	25 337	30 699	20 378	27 934	1.35	217 369	10.51	23.27	595
16	1.00	1 200	25 478	30 851	20 811	28 073	1.35	220 630	10.60	24.91	595
17	1.05	1 260	25 483	30 855	21 048	28 077	1.35	220 717	10.60	15.34	595
18	1.10	1 320	25 572	30 943	21 317	28 156	1.35	222 825	10.66	27.88	595
19	1.15	1 380	25 598	30 953	21 588	28 166	1.35	222 976	10.66	6.88	595
20	1.20	1 440	25 676	31 019	21 835	28 225	1.35	224 690	10.71	28.03	595
21	1.25	1 500	25 678	31 022	22 013	28 227	1.35	224 789	10.71	63.61	595
22	1.30	1 560	25 786	31 116	22 261	28 311	1.34	227 601	10.80	32.63	595
23	1.35	1 620	25 795	31 118	22 446	28 311	1.34	227 612	10.80	4.43	595
24	1.40	1 680	25 845	31 151	22 611	28 342	1.34	228 596	10.83	22.38	595
25	1.45	1 740	25 945	31 216	22 827	28 399	1.34	230 638	10.88	26.40	595
26	1.50	1 800	25 952	31 223	22 955	28 407	1.34	230 924	10.89	37.69	595
27	1.55	1 860	25 955	31 225	23 074	28 408	1.34	231 001	10.90	31.07	595
28	1.60	1 920	25 990	31 251	23 211	28 431	1.34	231 970	10.93	34.78	595
29	1.65	1 980	25 991	31 253	23 329	28 433	1.34	232 043	10.93	59.93	595
30	1.70	2 040	26 063	31 301	23 501	28 475	1.34	234 051	11.00	40.52	595
31	1.75	2 100	26 067	31 303	23 575	28 476	1.34	234 086	11.00	23.44	595
32	1.80	2 160	26 166	31 366	23 776	28 530	1.34	236 800	11.09	38.73	595
33	1.85	2 220	26 198	31 385	23 892	28 548	1.34	237 632	11.12	28.71	595
34	1.90	2 280	26 238	31 415	24 064	28 576	1.33	239 113	11.17	40.37	595
35	1.95	2 340	26 336	31 465	24 218	28 618	1.33	241 327	11.23	32.28	595
36	2.00	2 400	26 347	31 477	24 299	28 630	1.33	242 002	11.26	59.06	595

Table 10.2: Optimisation Results – Parameters of the Final Pit Shells



Figure 10.5: Diagram of Pit Shell Sequence

Source: Micon 2016

The diagram in Figure 5.5 shows that as the price of metal increases, the tonnage of rock mass within the pit shell increases significantly at the transition from shell No. 6 to shell No. 7 (from the price of US\$660/oz to the price of US\$660/oz), and then increases smoothly over the remaining range of reviewed prices. The contained gold tonnage diagram repeats this pattern. It is important to note the minimum increment (gain) of all parameters at the transition to each subsequent final pit shell, starting from shell No. 7. Analysis of the data demonstrates that the pit corresponding to the base price (US\$1,200/oz) provides for the mining of 96.8% of ore and 98.1% of gold belonging to the pit shell of the highest revenue factor (2.0) and gold price (US\$2,400/oz). From this it is possible to draw two conclusions:

- 1. Using the base-case pit optimisation parameters (gold price, unit costs, pit wall slope angle, recovery) results in almost all the mineral resources being minable by open pit method.
- 2. For values of the revenue factor of greater than 55%, the optimisation parameters have only minor influence on the optimisation result.

Figure 10.6 shows a section along the strike of the mineralisation zones similar to Figure 10.2, but shows the optimised pit shells (the A-A line in Figure 10.1). The same symbols were used for the block model cells. It is evident that an increment (gain) of tonnage at the transition from shell No. 6 to shell No. 7 takes place owing to the lower mineralised zone in the deposit becoming economically viable. The geometry of all subsequent shells changes less significantly.

It is important to note that even at the highest gold prices reviewed, the elongated mineralised zone in the northwest of the site is not included in the optimised shells. Low average grades of gold in combination with the bedding depth of 150 m to 200 m do not justify the mining of this material. Approximately 2.5 tonnes of gold estimated within the block model lie outside the largest pit shell (generated using a gold price of US\$2,400/oz); this material clearly does not demonstrate the *reasonable prospects for eventual economic extraction* that are required for inclusion in a JORC-compliant resource estimate.

The pit shell corresponding to the base-case gold price value of US\$1,200/oz was selected for the evaluation of the Krasnoe mineral resources in accordance with the guidelines of the JORC Code (2012) and for the PEA. This shell maximises the income gained for the development of the deposit at this fixed price. In Micon's opinion, this price reflects reasonable expectations with regard to the market conditions for the next few years. The character of the results presented in Table 10.2 and Figure 10.5 indicates the mineable resource is not particularly sensitive to the selection of a base-case price and corresponding open pit shell.





Figure 10.6: Block Model of the Krasnoe Deposit and the Final Pit Shell (Section along the Strike of the Mineralisation Zones)

Source: Micon 2016



Figure 10.7 contains an isometric projection showing the geometry of the chosen final open pit contour for the base forecast gold price of US\$1,200/oz.

The final pit contour shell represents a uniform bowl of sufficiently simple shape. Its length is about 1,100 m and width of up to 710 m. The elevation at the deepest point is +595 m which corresponds to a depth of the pit of approximately 380 m to 400 m.



Figure 10.7: Optimal Final Open Pit Contour - 3D View



Considering that extremely low values of mining and processing costs were used in the optimisation, Micon performed one more optimisation of the final contour with the cost values increased by 1.5 times. The geometry of the produced final pit contour differs very slightly from the base option. This test calculation confirmed the stability of the produced final pit contour.

10.3 OPEN PIT GEOMETRY

Micon prepared the preliminary final pit design based on the chosen optimum final pit contour created in Whittle at a gold price of US\$1,200/oz. The exercise was performed to generate a more accurate estimation of the mineral resources of the deposit.

Micon used the open pit design parameters presented in Table 10.3. The parameters correspond to the maximum overall final wall angle of 45°.

Item	Value
Final Height of the Bench (m)	20
Bench Slope Angle (°)	70
Safety Berm Width (m)	9
One Lane Ramp Width (m)	13
Two Lane Ramp Width (m)	20
Minimum Width of the Stripping Line (accounting for motor transport turning conditions) (m)	23
Ramp Gradient (%)	8

Table 10.3: Parameters for the Open Pit Mining Operations

The resulting pit design is displayed in Figure 10.8. The open pit geometry corresponds to the geometry of the chosen pit shell created at the optimisation of the final pit contour, but it incorporates the presence of ramps, the minimum width of the open pit bottom and the design of the pit walls.

Micon emphasises that the design is the basis for the deposit's resource evaluation and does not claim to present associated optimum mining solutions.



6464600N 6464400N 6464200N 6464000N 6463800N 64636001

Figure 10.8: Plan of the Final Open Pit

10.4 **CUT-OFF GRADES**

The approach used by Micon for determination of the cut-off grades is based on the assumption that the entire volume of rock mass within the optimum final pit contour is subject to excavation and transportation to the surface. From this point of view, the cut-off grade determines the path of the excavated material from the point where it leaves the open pit. If the income gained at the recovery of metal from the material and its sale exceeds the cost of its processing, than the material represents ore. Otherwise it is waste rock subject to transportation to the dump. In its calculation, Micon proceeded from the approximately equal distances of ore and waste transportation. Taking into account this approach the costs of mining operations were not used in the calculation.





The cut-off grades are calculated separately for the oxide and primary ore according to the following formula:

$$g = \frac{Cp + Cg}{m^*r^*(P - Cs)^*OzConv}$$

where:

- *Cp* direct processing costs, US\$/t;
- *Cg* general running and administrative costs, US\$/t;
- m mining recovery (100 losses), %;
- *r* processing recovery, %;
- *P* price of gold, US\$/oz;
- *Cs* the cost of goods sold, including the royalty (mineral extraction tax), costs of transportation and refining, US\$/t;
- *OzConv* ounces-to-grams conversion factor.

The values of these parameters are presented above in Table 10.1. Considering the essential difference in the recovery of the processing of oxide and primary ores, the cut-off grades were determined separately for the two types of ore. The calculated cut-off grades were 0.4 g/t Au for oxide ore and 0.3 g/t Au for primary ore.

Micon emphasizes the fact that the calculated cut-off grade values are applicable only to the material within the open pit contour - for this volume mining operations are justified by the final open pit contour optimisation.

10.5 MINERAL RESOURCES

While producing the mineral resource estimate in accordance with the guidelines of the JORC Code (2012), Micon followed the requirement that "there are reasonable prospects for eventual economic extraction" and limited the volume of the estimated mineral resources by the final open pit contour (surface of the designed pit).

For the mineral resource estimate, Micon used the calculated gold cut-off grades of 0.4 g/t Au for oxide ore and 0.3 g/t Au for primary ore.

The mineral resource estimate is completed using the block model taking into account the referencing of the block model cells to the JORC categories of the mineral resources.

The mineral resources for the Krasnoe deposit, estimated and classified by Micon in accordance with the guidelines of the JORC Code (2012), are presented in Table 10.4.

JORC Category	Grade Class	Tonnage (kt)	Gold (g/t Au)	Gold (kg)	
	(g/t Hu))vide	(g/t Hu)	(115)	
	0.0.1.0	2 012	0.670	1.950	
	10 - 20	1.864	1 363	2 542	
	1.0 - 2.0	450	2.413	1.086	
Indicated	30 - 40	129	3 364	434	
	40-50	28	4 446	124	
	>5.0	19	6.006	111	
Total Indicated (Oxide Ores))	5,402	1.157	6,247	
	0.0 - 1.0	790	0.624	493	
	1.0 - 2.0	256	1.480	379	
In famme d	2.0 - 3.0	84	2.352	197	
Interred	3.0 - 4.0	11	3.369	38	
	4.0 - 5.0	6	4.347	28	
	>5.0	3	5.851	18	
Total Inferred (Oxide Ores)		1,150	1.002	1,153	
Total Oxide Ores		6,553	1.129	7,400	
Primary					
	0.0 - 1.0	1,530	0.617	945	
	1.0 - 2.0	617	1.404	867	
Indicated	2.0 - 3.0	218	2.397	524	
mulcated	3.0 - 4.0	47	3.429	162	
	4.0 - 5.0	5	4.313	22	
	>5.0	28	6.720	191	
Total Indicated (Primary Or	res)	2,447	1.108	2,710	
	0.0 - 1.0	3 733	0.596	2 224	
	1.0 - 2.0	4 074	1.449	5 904	
Inferred	2.0 - 3.0	1 751	2.414	4 226	
monou	3.0 - 4.0	760	3.527	2 683	
	4.0 - 5.0	451	4.447	2 005	
	>5.0	404	6.278	2 537	
Total Inferred (Primary Ores)		11,174	1.752	19,580	
Total Primary Ores		13,620	1.637	22,290	
Total for the Deposit					
	0.0 - 1.0	4,442	0.652	2,895	
	1.0 - 2.0	2,482	1.373	3,408	
Indicated	2.0 - 3.0	669	2.407	1,610	
maloulou	3.0 - 4.0	176	3.382	596	
	4.0 - 5.0	33	4.425	146	
	>5.0	47	6.438	302	
Total Indicated		7,848	1.141	8,958	
	0.0 - 1.0	4,523	0.601	2,717	
	1.0 - 2.0	4,331	1.451	6,283	
Inferred	2.0 - 3.0	1,835	2.411	4,424	
	3.0 - 4.0	772	3.525	2,721	
	4.0 - 5.0	457	4.446	2,033	
Total Informed	>3.0	407	0.275	2,333	
Total Indicated and Informed	12,324	1.082 1.472	20,732		

Table 10.4: Krasnoe Deposit Mineral Resources as at 1st January 2016



11.0 CONCLUSIONS AND RECOMMENDATIONS

Micon's audit review of the Krasnoe Gold Deposit has led to the following conclusions and recommendations:

- 1. The Indicated and Inferred mineral resources for the deposit have been estimated according to the amount of available geological information and the complexity of the mineralised zones;
- 2. Continued exploration is required to upgrade the current Inferred resources to a higher category;
- 3. To upgrade the Indicated mineral resources to ore reserves more detailed investigations on the geology, processing, hydrogeology and geomechanics are required;
- 4. Exploration of the flanks of the deposit should be continued;
- 5. For adequate internal and external quality control procedures the number of control samples should be increased to 5% of the total number of regular samples;

12.0 CERTIFICATES

CERTIFICATE OF CO-AUTHOR EVGENY KONDRATIEV

As co-author of this report entitled "Mineral resource estimate of the Krasnoe Gold Deposit, Irkutsk Region, Russian Federation", dated 1st November 2016, I, Evgeny Kondratiev, do hereby certify that:

- I am employed by, and conducted this assignment for, Micon International Co Limited, Suite 10, Keswick Hall, Norwich, United Kingdom, tel. +44(1603) 501501, fax +44(1603) 507 007, e-mail <u>ekondratiev@micon-international.co.uk;</u>
- 2) I hold the following academic qualification:

M.Sc. (Applied Geology) Voronezh University, Russia 1981

- 3) I am a member of the Australasian Institute of Mining and Metallurgy (Member # 305355) and a Chartered Professional in the discipline of Geology;
- 4) I have worked as a geologist in the minerals industry for 34 years;
- 5) My work experience includes 10 years as an exploration geologist exploring for base metal deposits, more than 10 years as a mine geologist in underground mines and approximately 10 years as a consulting geologist on precious and base metals;
- 6) I do, by reason of education, experience and professional qualifications fulfil the requirements of a Competent Person as defined by the JORC Code 2012;
- 7) I visited the Krasnoe gold deposit licence area in November 2015;
- 8) I am responsible for Sections 2.0 to 9.0 and 11.0 of this report;
- 9) I am independent of Krasny LLC, their subsidiaries, their directors, senior management, and other advisers; I have no economic or beneficial interest (present or contingent) in the company or in any of the mineral assets being evaluated and I will not be remunerated by way of a fee that is linked to the admission or value of the issuer; and,
- 10) As of the date of this certificate, to the best of my knowledge, information and belief, the "Mineral resource estimate of the Krasnoe Gold Deposit, Irkutsk Region, Russian Federation", dated 1st November 2016, contains all scientific and technical information that is required to be disclosed to make this Report not misleading.

Evgeny Kondratiev, M.Sc., MAusIMM(CP) (#305355) Senior Geologist Micon International Co. Limited Date: 1st November 2016



CERTIFICATE OF CO-AUTHOR STANLEY CURRIE BARTLETT

As the co-author of this report entitled "Mineral resource estimate of the Krasnoe Gold Deposit, Irkutsk Region, Russian Federation", dated 1st November 2016, I, Stanley Currie Bartlett, hereby certify that:

- I am employed by, and conducted this assignment for, Micon International Co Limited, Suite 10, Keswick Hall, Norwich, United Kingdom. tel. 0044(1603) 501501, fax 0044(1603) 507 007 e-mail <u>sbartlett@micon-international.co.uk</u>;
- 2) I hold the following academic qualification:

B.Sc. Geological Sciences	University of British Columbia, Vancouver, Canada, 1979;
M.Sc. (Mining Geology)	Camborne School of Mines, Redruth, England, 1987;

- 3) I am a registered Professional Geoscientist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia (membership # 19698); In addition I am a member in good standing of the Society for Mining, Metallurgy and Exploration;
- 4) I have worked as a geologist in the minerals industry for 36 years;
- 5) My work experience includes five years as an exploration geologist developing tungsten, gold, silver and base metal deposits, more than 14 years as a mining geologist in both open pit and underground mines and 17 years as a consulting geologist working in precious, ferrous and base metals and industrial minerals. I have a more than 28 years experience of mineral resource estimation;
- 6) I do, by reason of education, experience and professional qualifications fulfil the requirements of a Competent Person as defined by the JORC Code 2012;
- 7) I am responsible for the preparation or supervision of preparation of all sections of this Report.
- 8) I am independent of Krasny LLC, OJSC GV Gold and Kopy Goldfields AB, their subsidiaries, their directors, senior management, and other advisers; I have no economic or beneficial interest (present or contingent) in the company or in any of the mineral assets being evaluated and I will not be remunerated by way of a fee that is linked to the admission or value of the issuer; and,
- 9) As of the date of this certificate, to the best of my knowledge, information and belief, the "Mineral resource estimate of the Krasnoe Gold Deposit, Irkutsk Region, Russian Federation", dated 1st November 2016, contains all scientific and technical information that is required to be disclosed to make this Report not misleading



Stanley C. Bartlett, M.Sc., PGeo. (#19698) Senior Economic Geologist, Managing Director, Micon International Co. Limited Date: 1st November 2016





13.0 GLOSSARY AND ABBREVIATIONS

13.1 GLOSSARY

Activated Carbon: Carbonaceous material with a very high surface area used for adsorption of gold from solution.

Balance ore: Ore that meets the cut-off criteria approved by GKZ and has been recorded on the Russian Federation State balance once approved by GKZ reserve estimation.

Block Models: Three-dimensional representations of mineralisation created using regularsized blocks and sub-blocks. The model contains user defined collection of attributes associated with every block (sub-block). Values of attributes (first of all - metal grades) are calculated on the basis of data base representing sampling of the deposit. Block model is reflecting geometry of geological and topographic features and spatial distribution of quantitative characteristics of the mineral resource.

Carbon-in-leach (CIL): A gold recovery process in which gold-bearing ore, activated carbon and cyanide are mixed as slurry. The cyanide dissolves the gold, which is subsequently absorbed by and separated from the carbon.

Carbon-in-pulp (**CIP**): A method of recovering gold and silver from pregnant cyanide solutions by adsorbing the precious metals onto granules of activated carbon, which are typically ground up coconut shells.

Cataclasis: A deformation process caused by mechanical fracture or break-up of rocks usually associated with metamorphism and faulting, produces cataclastic rock.

Cut-off grade: The minimum concentration of a valuable component in a marginal sample of the mineral. The cut-off grade is used to delineate parts of the deposit to be mined.

Cyanide leaching: A method of extracting gold or silver from crushed or ground ore by dissolution with a weak cyanide solution. This may be conducted in slurry tanks or in large external heaps.

Dilution: Waste rock that is, by necessity, removed along with the ore in the mining process subsequently lowering the grade of the ore.

Doré: The final saleable product from a gold mine; obtained by smelting the products from previous processes.

Footwall: Rock located on the underside of a fault, vein or ore structure.

Geological fault: Discontinuity of rock with or without a shift on the surface. Faults occur due to the movement of rock masses.

Gosudarstvennaya Komissia po Zapasam (**GKZ**): State Commission for Mineral Reserves. Founded in 1927, GKZ manages mineral reserves on behalf of the Ministry for Environmental Protection and Natural Resources of the Russian Federation.



Hangingwall: The rock on the upper side of a vein or ore deposit.

Hard rock deposit: Primary accumulation of a mineral substance in subsoil that has not been altered or destroyed near the ground surface. Hard rock deposits are opposed to placer deposits formed by the result of disintegration of hard rock deposits and mineralised rock.

Heap leaching: A process whereby valuable metals, usually gold and silver, are leached from a heap, or pad, of crushed ore by leaching solutions percolating down through the heap and collected from a sloping, impermeable liner below the pad.

Host rock: Wall rock that confines the mineral occurrence zone.

JORC Code: The Australasian Code for Reporting of Mineral Resources and Ore Reserves prepared by the Joint Ore Reserve Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia. The current edition is dated 2012.

Mineral Deposit: A body of mineralisation that represents a concentration of valuable metals. The limits can be defined by geological contacts or assay cut-off grade criteria.

Mineral Reserve: The Russian equivalent of the Western mineral resource and ore reserve. Mineral reserves are subdivided into A, B, C_1 and C_2 categories, depending on the level of definition and technological study.

Mineral Resource: A concentration or occurrence of solid material in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are subdivided, in order of increasing confidence, into Inferred, Indicated and Measured categories.

Off-balance ore: Ore that does not meet the GKZ approved cut-off criteria, but is of potential interest.

Open pit: A complex of mine workings formed in the course of mining a mineral by open method; a mining enterprise engaged in open-pit mining of minerals.

Operational reserves: Russian balance mineral reserves that have been adjusted for dilution and losses, and that have been incorporated into a mine production schedule.

Ore: Natural mineral formation that contains valuable components in such compounds and concentrations that make the mining technically and economically feasible.

Ore body: A natural accumulation of ore confined to a certain structural and geological element or a combination of such elements that either has been, or demonstrates a reasonable probability of being mined profitably.

Ore Reserve: The economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.


Oxide Ore: Ore which has undergone the process of natural oxidation.

Placer: A placer deposit is an accumulation of valuable minerals formed by gravity separation during alluvial sedimentary processes.

Primary Ore: Ore that is in its primary mineralised state and has not undergone the process of natural oxidation.

Pyrite (FeS₂): Iron sulphide. Sulphide mineral which can contain refractory gold.

Refractory ore: Ore that resists the action of chemical reagents during normal treatment processes and which may require pressure leaching or other means to effect the full recovery of the valuable minerals.

Stripping ratio: The relation of overburden volume to a mineral volume. A stripping ratio largely defines the economic feasibility of open-pit mining.

Sulphide Ore: Ore which is in its primary mineralised state and has not undergone the process of natural oxidation.

TEO of cut-off criteria: Russian standard form of reporting. The document that justifies the cut-off criteria used for reserve estimation. These are used to decide upon technical and economic feasibility of investments into construction of a mining enterprise.

13.2 ABBREVIATIONS

The metric system has been used throughout this report unless otherwise stated. Market prices are reported in US\$ per troy ounce of gold and silver. The following abbreviations are typical to the mining industry and may be used in this report.

0	degree (angle)
°C	degree Centigrade
Ag	silver
As	arsenic
Au	gold
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CIP	carbon-in-pulp
CoV	coefficient of variation
CRM	certified reference material
Cu	copper
GKZ	The State Commission for Mineral Reserves
g/t	gramme/tonne
ID^3	inverse distance weighting to the power of three
kg	kilogramme
km	kilometre
km ²	square kilometre
k m ³	thousand cubic metres
koz	thousand ounces
kt	thousand tonnes
kV	kilovolt



LOM	life-of-mine
μm	micron
mm	millimetre
m	metre
m^2	square metre
m^3	cubic metre
Ma	Millions of years ago
Moz	million ounces
Mt	million tonnes
Mt/a	million tonnes per year
OZ	ounce
RUB	Russian rouble
t	tonne
t/a	tonnes/year
t/d	tonnes/day
t/h	tonnes/hour
TEO	Techniko-Ekonomicheskie Obosnovie
TKZ	Territorial Reserves Committee
US\$	United States dollar
VAT	Value Added Tax