



GEMMOLOGICAL REPORT

Report Number
19022029

Colour
green

Date
5 March 2019

Species
Natural beryl

Item
One faceted gemstone

Variety
Emerald

Weight
1.38 ct

Origin
Afghanistan

Shape
modified cushion-shape

Condition
Indications of minor clarity
enhancement.

Cut
modified brilliant cut

Natural emeralds are commonly
clarity enhanced.

Measurements
8.34 x 6.54 x 4.84 mm

Comments
See Information Sheet(s).

Transparency
transparent

Important notes and limitations on the reverse.

Lidia Bellomo

Alessandra Spingardi



Notes and limitations

In keeping with the tradition and high standards of the Gübelin Gem Lab (Gübelin), each Report reflects the findings and independent opinion of Gübelin. Gem testing is carried out by qualified gemmologists applying approved analytical methods and using approved instrumentation. The description given in the Gemmological Report (hereinafter called Report) is limited to a selection of identifying characteristics observed in the gemstones (these include including single stones as well). The findings mentioned in this Report reflect the state of the gemstone at the time of examination. The unaltered original of the Report is the only valid document. Mounted stones are tested only insofar as mounting permits. Determination of the measurements of mounted stones cannot, in most cases, match the precision achievable on loose stones. Weight indications for stones tested in a setting are estimates; weight figures indicated by the client are checked by Gübelin. The colour photograph printed on the Report serves merely as an illustration of the items under examination. The actual appearance of the items may differ from their photographic image. The descriptions of jewellery items may be shortened and simplified.

Origin – A professional opinion as to the probable geographic origin of a gemstone may be given whenever possible and if requested. Deductions as to geographic origin are based exclusively on the internal characteristics, physical and chemical properties observed by Gübelin staff, by comparison to the properties recorded from reference stones of known identity, the results of continuing research undertaken by Gübelin, and gemmological knowledge published to date. The reference stones mentioned previously are part of the Gübelin gemstone reference collection and are systematically and continuously collected, classified and characterised. Gemstones from different geological sources may reveal a tell-tale combination of characteristic inclusion patterns, absorption spectra and trace-element compositions that allows for the determination of their origin. Indications of origin provided by Gübelin are not a warranty as to the quality or value of the gemstones. They are statements of qualified opinion, and do not guarantee the provenance of particular gemstones. Rather, such statements indicate the most probable origin, based on the data collected for the gemstones tested.

The combination of data may not, in all instances, provide the necessary basis for the determination of a single origin. When such cases arise, the Gübelin Gem Lab does not comment as to the origin of the gemstone. In addition, a determination of the origin of a gemstone reflects the level of knowledge and expertise about the respective type of gemstone at the time of the analysis. As stated above, Gübelin owns a comprehensive collection of authentic and fully analysed samples from all commercially relevant mines worldwide. This is an essential prerequisite for providing credible and reliable origin determination services. However, mines in new areas and other countries are coming on stream, and Gübelin regularly travels to collect sample material from new sources and thoroughly study its characteristics. The gemstones from such new mines can possibly show gemmological characteristics which might overlap with the characteristics of stones from earlier known localities. In such cases, the previously defined criteria must be reviewed to ensure the basis for the determination of the origin as described above.

Enhancement – Historically, many coloured gemstones have been enhanced to improve their appearance. Enhancement is a term used in the trade to describe any process additional to cutting and polishing that improves the appearance or durability of gemstones. Today, a variety of traditional and advanced enhancements (also known as treatments) are routinely applied to many natural gem materials including, but not limited to, beryl, corundum, tourmaline, topaz, sapphire, zircon, etc. The clarity of gem materials is often enhanced to reduce the visibility of surface-reaching fissures. This is accomplished by filling the fissures with transparent, colourless (or, rarely, coloured) organic substances, such as oil, resin and epoxy resin. The international trade generally accepts the filling – also known as clarity enhancement – of fissures in emeralds and other coloured stones. Some epoxy resins are reported to be stable under normal conditions, whereas others are not. Oils used to enhance emeralds are less stable.

The clarity enhancement of emeralds is a reversible and repeatable process, and stones may be filled and cleared multiple times during their "lives" as gemstones. This is especially true if oil is used as a filling agent, but generally, all types of filling material, including epoxy and resin, can be removed. Consequently, clients must be aware that an emerald could potentially be treated again after being tested in Gübelin and receiving a Report. If clarity-enhancement treatments are applied to an emerald with a high density of fissures, the appearance of the stone changes dramatically. The more surface-reaching fissures that are present in a stone, the higher the potential for (additional) clarity enhancement.

Enhancement disclosure – Generally, the wording used in Gübelin Reports is fully compliant with the nomenclature standards defined by the Laboratory Manual Harmonisation Committee (LMHC). In keeping with international trade practices, Gübelin does not make a separate comment for every type of enhancement that is commonly applied to any of a wide range of gemstones in today's marketplace. On the front of the Report, however, enhancement disclosure will be made for emeralds that show evidence of clarity enhancement. The comment disclosing clarity enhancement in emeralds will address the presence and relative quantity of the filler. If requested by the client, also the type of filler will be disclosed. In its reports, Gübelin distinguishes the following groups of filling materials: i. traditional (oil-type), ii. modern (resin-type); iii. mixed (oil-type and resin-type), and iv. wax. Gübelin applies the following terms to grade the presence and relative quantity of the fillers:

- No indications of clarity enhancement.
- Indications of insignificant clarity enhancement.
- Indications of minor clarity enhancement.
- Indications of moderate clarity enhancement.
- Indications of significant clarity enhancement.

Sometimes, fissures that are filled are very wide, or cavities are filled with a resinous substance. In addition to the amount of clarity enhancement, the quantification of filled cavities is also given. Gübelin applies the following terms to grade the relative quantity of filler in cavities:

- Minor amount of filling material in cavities (C1).
- Moderate amount of filling material in cavities (C2).
- Significant amount of filling material in cavities (C3).

For a comparison with the report wording of other LMHC members, please refer to www.lmhc-gemmology.org (<http://www.lmhc-gemmology.org/>), Info Sheet No. 5.

A special comment will be made in the Report if no indications of clarity enhancement are detected, in combination with another comment about the presence or absence of fissures. If the emerald is free of fissures, the stone is not susceptible to any clarity enhancement. On the other hand, a statement on the presence of fissures and the predisposition for treatment indicates the possibility that the emerald might be clarity enhanced, in spite of a laboratory report stating the opposite. An additional note specifies if the emerald has the potential to be treated afterwards or not.

The Report does not constitute a guarantee for, or appraisal of, the gemstones described herein. Gübelin assumes no responsibility for any damage or loss, or claims by third parties, which may arise from the issuance, use or misuse of this Report. It is recommended to carefully read the document "General Terms & Conditions" available on our website www.gubelinalgemlab.com.

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INFORMATION SHEET

to Report No. 19022029

Emeralds from Panjshir, Afghanistan

The Panjshir Valley lies in the foothills of the Hindu Kush in Afghanistan, approximately 130 km north of the capital, Kabul. The mining areas are situated on the east side of the River Panjshir and cover an area of approximately 400 km². The emerald occurrences are located along the Herat Panjshir fault and are related to the Himalayan orogeny, which started some 24 million years ago.

Emeralds have been reported in Afghanistan for thousands of years. Historically, these gems have sometimes also been known as Bactrian emeralds, though this term might also refer to sources in today's Pakistan. It is only for the past four decades that commercial quantities of Afghan emeralds have been mined. Their colour and quality varies, the best being comparable to Colombia's highest quality emeralds.

Information Sheets are intended to provide information supplementary to the contents of the Report and comment on, for instance, the type of gemstone, the geographic origin and the presence or absence of treatments. By definition, Information Sheets are purely informative in nature: they consist of a standard text and are issued for all types of stones of that particular category. Information Sheets, therefore, do not imply a certain quality or rarity of the stone described in the Gubelin Gem Lab Report, which it is attached to.