

Figure captions

- Fig. 1. The photo of outcrop (A) and map-scheme (B) of Obnazhennaya pipe.
- Fig. 2. The photos of thin sections of samples from Obnazhennaya pipe: a – No 7-392. Pyroclastic kimberlite with essentially serpentine groundmass. Rounded Ol porphyroclasts partly substituted by serphophite, with some preserved relict fresh Ol; b – No 7-269. Pyroclastic kimberlite with inclusion of coherent kimberlite containing calcite microcrysts (below). c – No 7-384. Coherent kimberlite with groundmass of essentially carbonate composition; d – No 7-387. Coherent kimberlite with groundmass of calcite-serpentine composition. Fluidal texture produced by aligned olivine phenocrysts; e – No 7-386. Fine-grain coherent kimberlite with phlogopite microlites in groundmass; f – No 7-388. Coherent kimberlite, enriched by Phl macrocrysts.
- Fig. 3. The photos of thin sections of samples from Velikan dyke: a – No 7-196. Groundmass of coherent kimberlite с флюидальной текстурой, создаваемой субпараллельной ориентировкой микрокрист Ol and микролитами Cal; b – No 7-193. Groundmass of coherent kimberlite; c – No 7-193. Groundmass of coherent kimberlite.
- Fig. 4. Correlation diagrams of SiO₂ vs. MgO, CaO, FeO, TiO₂ for Obnazhennaya kimberlite. 1 – pyroclastic kimberlite; 2 – coherent kimberlite; 3 – inclusions of micaceous kimberlite.
- Fig. 5. Correlation diagrams of carbonate component vs. major oxides and trace elements for Obnazhennaya kimberlite. See legend from Fig.3.
- Fig. 6. Correlation diagrams of MgO vs. Ni, Co, Cr, V for Obnazhennaya kimberlite. See legend from Fig. 7.
- Fig. 7. Obnazhennaya kimberlites in trace-element spider diagram. The gray-colored field corresponds to the compositions of kimberlites from diamond-bearing pipes (Kostrovitsky et al., 2007).
- Fig. 8. a - (⁸⁷Sr/⁸⁶Sr)₀ - εNd diagram for kimberlites from: 1 - diamond deposits, 2 - Obnazhennaya pipe, 3 - other pipes of Kuoika field. Arroëw points to ⁸⁷Sr/⁸⁶Sr evolution trend. Composition fields for kimberlites I and kimberlites II are after (Mitchell, 1986; Smith, 1983; Tainton and McKenzie, 1994). PREMA field is after (Zindler and Hart, 1986); b - εNd-εHf diagram for kimberlites from: 1 - diamond deposits, 2 - Obnazhennaya pipe, 3 - other pipes of Kuoika field, 4 - South Africa (Nowell et al, 2004). Composition fields of group I and group II kimberlites are after (Nowell et al, 2004).
- Fig. 9. Correlation diagrams of MgO vs. NiO for macrocryst and microcryst zonal olivines from Obnazhennaya pipe.
- Fig. 10. Correlation diagrams of CaO vs. Cr₂O₃ for garnet macrocrysts from Obnazhennaya kimberlites.
- Fig. 11. Correlation diagrams: A - of Cr₂O₃ vs. Al₂O₃, and B – of Mg/(Mg+Fe)x100 vs. TiO₂ for spinel from Obnazhennaya kimberlite. Spinel is from: 1 - kimberlite heavy fraction, 2 - peridotitic xenoliths, 3 - glimmerite.
- Fig. 12. Correlation diagrams: A - of Mg/(Mg+Fe)x100 vs. Cr₂O₃; and B – Ca/(Ca+Mg)x100 vs. Cr₂O₃ for clinopyroxenes from Obnazhennaya kimberlite. Clinopyroxenes are from: 1 - kimberlite heavy fraction, 2 - mantle xenoliths, 3 - glimmerite.
- Fig. 13. P-T diagram for clinopyroxenes from Obnazhennaya kimberlite (P-T estimates according Nimis and Taylor, 2000). 1-macrocrysts, 2-mantle xenoliths.
- Fig. 14 Correlation diagrams for groundmass phlogopite from Obnazhennaya kimberlite. Samples: 1 - 7-293, 2 - 7-384, 3 - 7-386 (coherent kimberlite).

Supplementary Figures captions

- Fig. s1. The photo of outcrop of Obnazhennaya kimberlite pipe.
- Fig. s2. Microphotograph of sample 7-234 (plane polarized light, PPL).
- Fig. s3. Microphotograph of sample 7-243 (PPL). Sample 7-243. PK
- Fig. s4. Microphotograph of sample 7-257 (PPL). Sample 7-257. PK
- Fig. s5. Microphotograph of sample 7-325 (PPL). Sample 7-325. CK
- Fig. s7. Correlation diagrams for spinel
- Fig. s8. Correlation diagrams for clinopyroxenes
- Fig. s9. Correlation diagrams for Phl from groundmass of Obnazhennaya kimberlite. Samples: 1 - 7-293 (pyroclastic kimberlite), 2 - 7-384 (coherent kimberlite), 3 - 7-386 (Phl coherent kimberlite).
- Fig. s10. The photo of outcrop of Obnazhennaya kimberlite pipe.

Fig. s11. Microphotograph of sample 7-234 (plane polarized light, PPL). Pyroclastic kimberlite with calcite-serpentine groundmass. Rounded Ol porphyroclasts partly substituted by serphophite, with some preserved relicts of fresh Ol.

Fig. s12. Microphotograph of sample 7-243 (PPL). Sample 7-243. Pyroclastic kimberlite with inclusion of coherent kimberlite containing calcite microcrysts.

Fig. s13. Microphotograph of sample 7-257 (PPL). Sample 7-257. Pyroclastic kimberlite with inclusion of coherent kimberlite containing calcite microcrysts.

Fig. s14. Microphotograph of sample 7-325 (PPL). Sample 7-325. Coherent kimberlite with groundmass of essentially carbonate composition.

Fig. s15. Microphotographs of kimberlite groundmass from Velikan dyke: s15-1 – Общий вид groundmass, s15-2 – groundmass при большом увеличении с точками анализа; s15-3 - groundmass при большом увеличении с точками анализа.