**Electronic supplement 1:**

**A: Localization and structural position of samples**

**dated by the SHRIMP U/Pb method on zircons**

**Sample BLJ-1:** Pyroxene andesite porphyry; a relatively older rock in the Beluj intrusive complex affected by the Au-porphyry system alteration.

*WGS-84 dms coordinates: 48 21 05.6 N, 18 53 55.1 E.*

**Sample BLJ-3:** Pyroxene-amphibole diorite porphyry stock with accessory garnet; a relatively younger rock in the Beluj intrusive complex – parental intrusion of the Au-porphyry system.

*WGS-84 dms coordinates: 48 21 14.1 N, 18 54 28.5 E.*

Rocks of the Beluj intrusive complex (Stage 1b) crosscut the oldest andesites of the lower structural unit (Pre-caldera stage 1a) and are covered by younger andesites of the same unit (Pre-caldera stage 1c).

**Sample RB-1073:** Biotite amphibole granodiorite showing an equigranular texture.

*WGS-84 dms coordinates: 48 28 19.9 N, 18 50 47.7 E.*

**Sample RB-1149:** Biotite amphibole granodiorite showing an equigranular texture.

*WGS-84 dms coordinates: 48 27 56.4 N, 18 49 39.3 E.*

**Sample GD-1:** Biotite amphibole granodiorite showing an equigranular texture.

*WGS-84 dms coordinates: 48 26 47.6 N, 18 47 38.5 E.*

Three relatively unaltered granodiorite samples represent internal parts of the extensive granodiorite bell-jar pluton (Stage 2b).

**Sample RB-463:** Biotite-amphibolequartz -diorite porphyry.

*Rozália mine, 14th horizon, WGS-84 dms coordinates: 48 27 38.6 N, 18 52 04.0 E.*

**Sample RB-350:** Biotite-amphibolequartz -diorite porphyry.

*Rozália mine, 14th horizon, WGS-84 dms coordinates: 48 27 38.5 N, 18 52 04.2 E.*

Both samples represent a thin sill in middle of the shear zone at the Hodruša base/precious metal deposit that is affected by mineralization – its emplacement preceded evolution of ore veins.

**Sample RB-462:** Biotite-amphibolequartz-diorite porphyry.

*Rozália mine, 14th horizon, WGS-84 dms coordinates: 48 27 41.0 N, 18 52 12.3 E.*

**Sample RB-349:** Biotite-amphibolequartz-diorite porphyry.

*Rozália mine, 14th horizon, WGS-84 dms coordinates: 48 27 42.5 N, 18 52 03.9 E.*

Both samples represent sills in the shear zone at the Hodruša base/precious metal deposit that show a magmatic contact with mineralized andesites and ore veins – their emplacement postdated mineralization, however, it was still controlled by structures of the shear zone.

**Sample KDP-1:** Orthopyroxene-biotite-amphiboleandesite porphyry.

*WGS-84 dms coordinates: 48 27 41.5 N, 18 51 50.0 E.*

The sample represents a very shallow sill emplaced at the top of the lower structural unit andesites. The sill shows a different structural control as other quartz-diorite porphyry sills (c.f. Fig.3).

**Sample RB-1148:** Biotite-amphibolequartz-diorite porphyry rich in quartz phenocrysts.

*WGS-84 dms coordinates: 48 28 00.3 N, 18 50 08.6 E.*

The sample represents a thick and extensive sill emplaced between granodiorite pluton and andesites/andesite porphyries of the lower structural unit (pre-caldera stage).

**Sample KDP-3:** Biotite-amphibolequartz-diorite porphyry.

*WGS-84 dms coordinates: 48 28 35.8 N, 18 54 27.0 E.*

The sample represents one of the ring dikes at the eastern side of the resurgent horst associated with emplacement of the sills (c.f. Fig.3).

**Sample R-8:** Biotite-amphibole granodiorite porphyry.

*WGS-84 dms coordinates: 48 25 16.2 N, 18 46 17.6 E, Borehole R-8, unknown depth*

**Sample R-12:** Biotite-amphibole granodiorite porphyry.

*WGS-84 dms coordinates: 48 25 24.4 N, 18 46 36.3 E, Borehole R-12, unknown depth*

The samples represent two varieties of granodiorite porphyry forming a stock/dike cluster at the locality Zlatno, a parental intrusion of the Cu-Au skarn-porphyry deposit. The stock crosscuts basement sedimentary rocks.

**Sample SEM:** Biotite-amphibole granodiorite porphyry.

*WGS-84 dms coordinates: 48 24 46.6 N, 18 48 33.4 E.*

The sample represents one of the thick dikes in a dike cluster at the locality Šementlov hosting the Cu-Au skarn-porphyry mineralization. The dike crosscuts andesites of the lower structural unit (Pre-caldera stage).

**Sample Ti-5:** Biotite-amphibole granodiorite porphyry.

*WGS-84 dms coordinates: 48 22 30.7 N, 18 42 48.8 E*

The sample represents one of the thick dikes in a dike cluster outside of the caldera. The dike crosscuts andesites of the lower structural unit (Pre-caldera stage).

**Sample ST-102:** Glassy biotite-amphibole andesite.

*WGS-84 dms coordinates: 48 24 57.5 N, 18 53 31.8 E*

The sample represents a lava flow at the base of the caldera filling (Studenec Fm.) in its southern part.

**Sample ST-104:** Biotite-amphibole andesite.

*WGS-84 dms coordinates: 48 32 46.5 N, 18 56 37.9 E*

The sample comes from the internal part of extrusive dome of the Studenec Fm. in the northern part of the caldera.

**Sample ST-105:** Biotite-amphibole andesite.

*WGS-84 dms coordinates: 48 32 45.8 N, 18 55 08.5 E*

The sample represents a dike crosscutting older parts of the caldera filling (Studenec Fm.) in its northern part.

**Sample ST-107:** Biotite-amphibole andesite.

*WGS-84 dms coordinates: 48 31 25.4 N, 18 56 39.7 E*

The sample represents an extrusive dome overlying older parts of the caldera filling (Studenec Fm.) in its northern part.

**Sample R-1:** Crystal-poor felsitic rhyolite.

*WGS-84 dms coordinates: 48 30 29.0 N, 18 46 55.7 E*

The sample represents a cryptodome emplaced at the western marginal fault of the resurgent horst.

**B: Localization and structural position of samples**

**dated by the K/Ar method on illite and adularia**

**Sample BHS-248/34.5:** Intensively silicified andesite in the vicinity of the major vein system.

*Rozália mine, 18th horizon, borehole, WGS-84 dms coordinates: 48 27 37.5 N, 18 52 24.1 E*

**Sample RB-92a:** silicified and argillized andesite in the hanging wall of the major vein system.

*Rozália mine, 17th horizon, WGS-84 dms coordinates: 48 27 37.8 N, 18 52 20.6 E*

**Sample RB-318a:** intensively argillized andesite in the footwall of the major vein system.

*Rozália mine, 15th horizon, WGS-84 dms coordinates: 48 27 37.2 N, 18 52 09.1 E*

**Sample RB-335a:** altered andesite in the hanging wall of the major vein system.

*Rozália mine, 17th horizon, WGS-84 dms coordinates: 48 27 36.7 N, 18 52 31.3 E*

**Sample VH-7/72.5:** intensively argillized andesite outside of major vein structures.

*Rozália mine, surface borehole, WGS-84 dms coordinates: 48 27 30.9 N, 18 51 22.5 E*

**Sample VH-8/156:** argillized andesite outside of major vein structures.

*Rozália mine, surface borehole, WGS-84 dms coordinates: 48 27 29.3 N, 18 51 26.2 E*