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Supplementary Materials

Multi-Stage Evolution of Gold-Bearing Hydrothermal Quartz Veins at the Mokrsko Gold Deposit (Czech Republic) Based on Cathodoluminescence, Spectroscopic, and Trace Elements Analyses

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Table S1. Table of trace elements analyses (Al, Ti, Li, Ge) from all three deposits, which were used in diagrams. Meaning of the symbol "<" is value bellow limit of detection.

Čelina	Al	Ti	Li	Ge
C-V 1/4-1	89.9	35.7	20.5	1.9
C-V 1/4-2	236.1	47.9	21.4	1.8
C-V 1/4-3	274.7	52.6	17.5	1.3
C-V 1/4-4	92.9	30.0	21.0	1.2
C-V 1/4-6	100.1	31.1	15.9	1.7
C-V 1/4-7	123.5	32.0	16.1	1.0
C-V 1/4-8	339.8	21.5	19.7	1.1
C-V 1/4-9	99.1	41.3	20.1	1.5
C-V 1/4-10	100.8	32.7	18.0	1.9
C-V 1/4-11	191.4	33.0	15.8	1.6
C-V 1/4-12	146.8	40.8	16.4	2.4
C-V 1/4-13	196.2	37.9	17.8	1.8
C-V 1/4-14	301.2	50.9	12.7	1.9
C-V 1/4-16	176.0	45.4	13.4	1.3
C-V 1/4-17	58.6	29.6	15.5	1.0
C-V 1/4-18	117.6	28.0	11.0	1.3
C-V 1/4-20	113.1	14.8	18.3	1.4
C-V 1/4-21	76.4	35.2	18.8	1.3
C-V 1/4-22	118.2	18.7	13.6	2.2
C-V 1/4-23	125.0	22.9	13.7	1.7
C-V 1/4-24	155.6	30.6	32.4	1.7
C-V 1/4-25	120.9	35.3	14.1	2.0
C-V 1/4-26	64.2	32.5	18.8	1.3
C-V 1/4-27	57.8	35.7	27.3	1.4
C-V 1/4-28	116.2	41.0	15.8	0.7
C-V 1/4-30	239.0	38.6	17.5	2.0
C-V 1/4-31	201.5	28.9	14.0	1.2
C-V 1/4-32	146.8	25.6	15.0	1.7
C-V 1/4-33	128.0	28.3	25.2	1.5
C-V 1/4-34	140.6	27.2	13.1	1.7
C-V 1/4-35	107.5	30.3	12.5	1.6
C-V 1/4-36	139.4	38.8	14.8	0.3
C-V 1/4-37	181.3	43.4	11.9	1.6
C-V 1/4-38	575.6	37.2	11.2	2.0
C-V 1/4-40	159.7	31.7	17.1	1.9
C-V 1/4-41	110.4	41.8	19.9	1.0
C-V 1/4-43	56.0	27.5	21.5	1.7
C-V 1/4-44	125.8	54.8	26.4	2.7
C-V 1/4-45	75.7	29.2	26.4	2.4

Čelina	Al	Ti	Li	Ge
C-V 1/4-46	123.2	39.6	22.6	2.2
C-V 1/4-47	77.3	35.0	28.5	1.0
C-V 1/4-49	46.3	27.1	21.2	1.4
C-V 1/4-50	75.1	31.3	27.5	2.6
C-V 1/4-51	42.9	37.5	19.8	0.7
C-V 1/4-52	52.8	20.3	24.1	1.5
C-V 1/4-53	84.9	45.5	36.4	0.8
C-V 1/4-54	89.7	44.9	22.0	1.6
C-V 1/4-55	136.8	56.6	24.6	0.9
C-V 1/4-56	155.5	73.9	28.8	2.6
C-V 1/4-57	168.4	47.9	21.7	1.6
C-V 1/4-58	181.8	44.7	24.4	0.9
C-V 1/4-59	166.8	58.9	19.6	0.8
C-V 1/4-60	150.2	42.7	19.9	2.1
C-V 1/4-61	162.8	44.3	21.2	2.2
C-V 1/4-62	118.2	35.8	17.8	1.7
C-V 1/4-64	127.2	53.9	24.7	1.1
C-V 1/4-65	132.5	47.1	21.9	1.1
C-V 1/4-66	160.0	59.0	31.3	2.7
C-V 1/4-67	174.1	41.3	28.9	2.8
C-V 1/4-69	153.5	38.0	22.6	1.2
C-V 1/4-70	144.9	49.0	28.1	2.0
C-V 1/4-71	129.8	55.9	30.0	3.0
C-V 1/4-72	66.1	35.1	26.7	2.2
C-V 1/4-73	71.2	34.0	24.2	2.2
C-V 1/4-74	88.0	35.7	29.4	1.9
C-V 1/4-75	86.4	47.8	25.2	2.3
C-V 1/4-76	74.2	51.9	20.0	2.1
C-V 1/4-77	134.1	50.3	20.8	1.8
C-V 1/4-78	142.1	45.9	18.5	0.8

Mokrsko-East	Al	Ti	Li	Ge
M-V 8-1	181.0	19.7	2.5	2.0
M-V 8-3	112.3	19.9	2.4	1.8
M-V 8-4	66.1	12.0	0.5	1.6
M-V 8-5	87.4	23.7	15.4	2.0
M-V 8-6	146.8	26.1	12.3	1.4
M-V 8-7	362.4	22.5	13.3	1.9
M-V 8-9	116.5	8.6	3.5	0.8
M-V 8-11	44.9	7.3	1.3	2.7
M-V 8-13	254.1	15.2	3.8	1.1

Mokrsko-East	Al	Ti	Li	Ge
M-V 8-15	142.1	36.8	2.5	2.3
M-V 8-16	586.4	66.5	2.9	4.4
M-V 8-17	222.2	35.0	1.9	1.9
M-V 8-18	142.5	66.2	4.3	2.0
M-V 8-19	87.9	9.9	3.2	0.3
M-V 8-20	168.5	26.3	5.5	1.3
M-V 8-22	141.8	31.3	8.6	0.4
M-V 8-23	117.7	23.0	9.7	1.1
M-V 8-24	127.1	16.6	13.2	3.4
M-V 8-27	148.1	14.5	4.9	0.2
M-V 8-28	166.5	40.6	3.1	2.5
M-V 8-29	192.7	46.8	3.5	<
M-V 8-31	92.9	17.7	2.3	3.2
M-V 8-32	66.5	23.4	2.4	4.3
M-V 8-33	130.6	2.4	3.2	1.9
M-V 8-34	46.8	18.4	1.8	2.9
M-V 8-35	60.3	14.6	2.1	1.6
M-V 8-36	99.0	61.8	7.1	0.3
M-V 8-37	119.4	22.6	8.3	1.7
M-V 8-38	88.2	68.5	1.6	0.9
M-V 8-39	102.3	31.6	2.8	2.6
M-V 8-40	150.8	34.4	3.8	3.7
M-V 8-41	140.2	14.8	8.1	1.6
M-V 8-42	231.8	36.9	5.5	0.7
M-V 8-44	135.5	12.6	2.7	1.7
M-V 8-48	86.4	25.4	2.7	3.7
M-V 8-49	97.3	21.4	9.6	1.4
M-V 8-50	177.7	59.9	8.3	0.4
M-V 7-1	92.3	10.2	4.8	2.1
M-V 7-3	316.1	9.2	2.8	2.6
M-V 7-4	22.6	10.8	<	1.1
M-V 7-5	113.6	9.7	3.4	1.5
M-V 7-7	49.0	4.6	3.2	1.4
M-V 7-8	138.9	10.0	1.5	2.8
M-V 7-9	112.2	6.0	9.0	2.5
M-V 7-10	265.5	11.6	7.1	1.7
M-V 7-12	54.7	11.3	<	1.2
M-V 7-13	28.9	7.7	4.0	1.5
M-V 7-14	176.2	8.6	3.3	2.4
M-V 7-15	52.7	14.4	<	1.9
Mokrsko-East	**Al**	**Ti**	**Li**	**Ge**
M-V 7-16	246.0	9.7	<	1.5
M-V 7-17	68.1	6.2	<	2.0
M-V 7-18	19.0	6.2	<	0.9
M-V 7-19	15.9	7.2	<	0.9
M-V 7-20	35.2	11.3	2.5	1.7
M-V 7-21	33.5	7.7	3.3	1.7

Mokrsko-West	Al	Ti	Li	Ge
M-Z 2/1-2	558.0	9.5	<	4.4
M-Z 2/1-3	124.5	4.9	<	1.8
M-Z 2/1-4	212.6	14.3	3.2	2.1
M-Z 2/1-6	505.4	2.5	1.8	3.5
M-Z 2/1-7	305.1	11.0	1.9	4.1
M-Z 2/1-8	238.4	10.9	5.1	1.5
M-Z 2/1-13	448.0	12.6	<	3.6
M-Z 2/1-18	275.4	11.9	<	5.7
M-Z 6/1-1	979.6	11.8	5.1	3.4
M-Z 6/1-2	215.4	14.5	8.0	<
M-Z 6/1-3	303.5	6.9	7.7	<
M-Z 6/1-4	377.7	11.7	6.5	2.8
M-Z 6/1-5	302.4	8.2	3.6	<
M-Z 6/1-6	288.4	8.2	11.2	2.5
M-Z 6/1-7	142.1	8.8	2.9	<
M-Z 6/1-8	115.5	62.1	1.4	2.7
M-Z 6/1-9	174.4	32.9	<	<
M-Z 6/1-11	495.4	14.6	7.0	2.0
M-Z 6/1-12	504.8	15.3	1.2	4.5
M-Z 6/1-13	1643.0	12.5	3.9	<
M-Z 6/1-14	270.1	6.7	3.7	<
M-Z 4/1-2	162.2	6.5	0.3	8.9
M-Z 4/1-3	217.9	19.7	1.8	4.3
M-Z 4/1-4	183.7	15.8	0.7	3.0
M-Z 4/1-6	26.1	6.5	0.9	4.3
M-Z 4/1-7	161.2	12.4	5.0	3.5
M-Z 4/1-8	40.3	7.3	3.2	7.7
M-Z 4/1-9	160.5	4.6	0.9	13.0
M-Z 4/1-10	262.6	2.8	1.7	8.8
M-Z 4/1-11	61.2	6.9	0.3	4.7
M-Z 4/1-12	22.8	4.2	2.0	4.3
M-Z 4/1-13	112.3	3.5	3.7	6.0
M-Z 4/1-15	87.0	3.1	3.7	9.6

Mokrsko-West	Al	Ti	Li	Ge
M-Z 4/1-16	230.8	2.7	1.7	7.7
M-Z 4/1-17	308.1	7.2	0.8	7.7
M-Z 4/1-18	421.7	5.1	4.0	8.6
M-Z 4/1-19	368.2	53.0	<	5.6
M-Z 4/1-22	82.2	13.8	3.0	10.7
M-Z 4/1-23	97.7	1.7	2.5	8.2
M-Z 4/1-24	20.7	<	5.1	12.9
M-Z 4/1-25	56.6	1.8	6.2	13.6
M-Z 4/1-27	73.6	1.3	3.4	16.8
M-Z 4/1-28	42.3	1.3	3.7	11.4
M-Z 4/1-29	51.7	2.8	2.4	3.4
M-Z 4/1-30	26.0	1.8	<	4.6
M-Z 4/1-31	196.7	4.8	0.7	8.3
M-Z 4/1-33	105.0	5.9	<	7.2
M-Z 4/1-35	135.5	6.8	1.8	7.3
M-Z 4/1-36	104.1	<	1.0	4.7
M-Z 4/1-39	87.4	3.1	<	6.5
M-Z 4/1-40	231.9	5.1	0.8	8.0
M-Z 4/1-41	454.2	8.5	<	6.2
M-Z 4/1-42	126.5	3.7	2.2	6.2
M-Z 4/1-44	261.5	6.5	4.0	5.3
M-Z 4/1-45	1639.2	2.0	1.3	13.0
M-Z 4/1-46	827.5	4.2	2.6	13.8
M-Z 4/1-47	118.6	8.1	2.3	<
M-Z 4/1-48	104.4	7.5	3.9	<
M-Z 4/1-49	85.3	1.9	<	5.0
M-Z 4/1-50	304.3	3.7	0.9	4.4

Table S2. Table of other measured trace elements (Na, K, Fe, As) from all three deposits. Ga was in many cases bellow limit of detection (72 % at Čelina, 75 % at Mokrsko-East and 39% at Mokrsko-West). Calcium was measured only at the beginning of the research, values were from bellow detection limits to significantly higher values than threshold value of 500 ppm. It is likely caused by mineral inclusions belonging to often young carbonate veinlets, which are not related to gold bearing quartz mineralization (postdate it). Meaning of the symbol "<" is value bellow limit of detection.

Čelina	Na	K	Fe	As
C-V 1/4-1	76.9	<	<	<
C-V 1/4-2	48.1	40.0	21.6	2.1
C-V 1/4-3	87.7	20.3	<	1.2
C-V 1/4-4	<	<	<	1.5
C-V 1/4-6	87.8	<	<	<
C-V 1/4-7	111.5	<	<	<
C-V 1/4-8	128.8	44.3	<	<
Čelina	**Na**	**K**	**Fe**	**As**
C-V 1/4-9	56.5	<	<	1.2
C-V 1/4-10	<	<	<	<
C-V 1/4-11	389.6	58.3	<	2.1
C-V 1/4-12	108.7	48.7	<	1.1
C-V 1/4-13	193.1	85.3	2.2	0.4
C-V 1/4-14	129.6	115.8	<	1.8
C-V 1/4-16	194.3	66.1	8.4	1.3
C-V 1/4-17	195.4	28.0	7.3	1.5
C-V 1/4-18	151.0	39.0	11.3	0.5
C-V 1/4-20	221.0	45.5	<	0.6
C-V 1/4-21	105.2	84.7	<	<
C-V 1/4-22	116.6	76.2	<	1.2
C-V 1/4-23	90.2	28.8	12.2	0.8
C-V 1/4-24	215.8	54.7	6.8	0.9
C-V 1/4-25	60.4	41.1	<	0.6
C-V 1/4-26	86.6	4.1	<	0.6
C-V 1/4-27	42.6	22.3	<	0.4
C-V 1/4-28	102.9	60.7	41.7	1.2
C-V 1/4-30	410.1	37.8	<	1.9
C-V 1/4-31	228.6	63.8	13.3	0.6
C-V 1/4-32	176.3	41.3	3.3	<
C-V 1/4-33	602.7	64.4	<	0.9
C-V 1/4-34	167.8	30.6	<	1.1
C-V 1/4-35	390.5	93.8	94.3	<
C-V 1/4-36	140.5	40.8	<	1.3
C-V 1/4-37	149.1	101.7	16.4	6.7
C-V 1/4-38	387.3	85.9	37.0	0.7
C-V 1/4-40	222.4	107.3	28.0	<
C-V 1/4-41	<	<	<	<
C-V 1/4-43	<	<	<	1.5
C-V 1/4-44	<	<	<	2.3
C-V 1/4-45	<	<	<	<
C-V 1/4-46	75.0	<	<	2.1
C-V 1/4-47	<	<	<	<
C-V 1/4-49	<	<	<	<
C-V 1/4-50	<	<	<	<
C-V 1/4-51	15.2	<	<	0.3
C-V 1/4-52	<	3.7	<	0.6
C-V 1/4-53	39.6	<	<	0.5
C-V 1/4-54	44.0	<	<	1.3
C-V 1/4-55	73.4	10.5	<	0.7

Čelina	Na	K	Fe	As
C-V 1/4-56	42.7	3.6	<	2.8
C-V 1/4-57	12.4	13.0	<	1.5
C-V 1/4-58	41.9	12.8	<	1.6
C-V 1/4-59	73.7	<	<	1.5
C-V 1/4-60	42.3	<	<	2.0
C-V 1/4-61	<	12.8	<	0.9
C-V 1/4-62	<	<	<	0.4
C-V 1/4-64	21.9	<	<	1.3
C-V 1/4-65	39.7	19.0	<	1.4
C-V 1/4-66	46.8	11.0	<	3.1
C-V 1/4-67	20.8	<	<	1.9
C-V 1/4-69	38.7	<	<	2.3
C-V 1/4-70	14.7	<	<	1.2
C-V 1/4-71	90.9	<	<	3.5
C-V 1/4-72	9.4	<	<	1.8
C-V 1/4-73	23.0	<	<	0.8
C-V 1/4-74	9.0	<	<	<
C-V 1/4-75	12.0	<	<	2.7
C-V 1/4-76	<	<	<	1.4
C-V 1/4-77	43.1	227.9	<	1.6
C-V 1/4-78	226.0	<	<	2.6

Mokrsko-East	Na	K	Fe	As
M-V 8-1	84.7	31.2	<	<
M-V 8-3	403.1	21.4	<	0.9
M-V 8-4	252.9	21.4	<	1.5
M-V 8-5	76.5	<	<	<
M-V 8-6	156.6	55.6	<	<
M-V 8-7	156.8	127.6	<	<
M-V 8-9	276.9	57.1	<	<
M-V 8-11	593.8	77.3	<	4.2
M-V 8-13	370.5	99.3	<	0.7
M-V 8-15	642.6	42.7	<	1.6
M-V 8-16	389.7	187.8	<	1.2
M-V 8-17	312.4	52.2	<	1.6
M-V 8-18	463.1	25.9	<	2.6
M-V 8-19	372.5	51.8	<	1.0
M-V 8-20	450.0	94.1	14.1	3.8
M-V 8-22	391.1	79.8	<	0.4
M-V 8-23	488.9	75.9	<	1.9
M-V 8-24	311.6	39.7	<	9.3

Mokrsko-East	Na	K	Fe	As
M-V 8-27	300.5	43.8	<	0.8
M-V 8-28	528.8	108.9	<	5.2
M-V 8-29	311.1	152.0	<	1.2
M-V 8-31	750.4	41.9	<	0.4
M-V 8-32	314.6	36.3	<	<
M-V 8-33	259.5	44.9	<	0.4
M-V 8-34	198.0	46.6	<	0.4
M-V 8-35	327.3	36.9	<	<
M-V 8-36	595.1	92.6	<	0.4
M-V 8-37	222.0	62.3	<	1.3
M-V 8-38	230.1	142.7	4.4	0.3
M-V 8-39	333.7	43.2	<	1.6
M-V 8-40	360.6	65.3	<	0.3
M-V 8-41	132.3	38.5	<	0.7
M-V 8-42	573.1	78.3	<	1.0
M-V 8-44	144.0	115.4	<	0.3
M-V 8-48	196.3	40.0	<	<
M-V 8-49	91.1	19.6	<	0.7
M-V 8-50	404.1	94.5	<	1.6
M-V 7-1	417.1	72.5	<	2.1
M-V 7-3	467.6	73.3	<	1.5
M-V 7-4	462.7	62.2	<	2.3
M-V 7-5	575.3	90.0	<	3.0
M-V 7-7	521.0	82.4	<	1.3
M-V 7-8	536.2	112.9	<	1.3
M-V 7-9	491.0	96.4	<	0.8
M-V 7-10	492.5	174.7	<	2.0
M-V 7-12	510.7	80.9	<	1.2
M-V 7-13	528.3	71.5	<	<
M-V 7-14	603.5	157.7	<	1.7
M-V 7-15	680.1	76.3	<	1.3
M-V 7-16	570.0	137.2	<	1.4
M-V 7-17	539.2	139.8	<	3.1
M-V 7-18	413.0	59.7	<	1.1
M-V 7-19	477.9	76.3	<	1.5
M-V 7-20	638.8	92.6	<	1.7
M-V 7-21	729.0	109.6	<	<

Mokrsko-West	Na	K	Fe	As
M-Z 2/1-2	535.2	76.9	119.5	<
M-Z 2/1-3	410.7	<	26.0	3.0
M-Z 2/1-4	220.2	20.1	20.4	<
M-Z 2/1-6	587.4	16.1	<	<
M-Z 2/1-7	476.6	59.4	41.1	2.2
M-Z 2/1-8	456.6	20.7	15.0	<
M-Z 2/1-13	760.7	66.8	4.0	<
M-Z 2/1-18	775.2	46.1	59.0	3.2
M-Z 6/1-1	473.2	72.1	91.4	<
M-Z 6/1-2	594.8	8.2	<	<
M-Z 6/1-3	234.6	<	<	<
M-Z 6/1-4	507.5	8.6	13.9	<
M-Z 6/1-5	346.4	51.4	9.7	<
M-Z 6/1-6	127.7	56.3	<	2.3
M-Z 6/1-7	270.8	<	<	<
M-Z 6/1-8	262.3	<	4.5	<
M-Z 6/1-9	185.7	16.6	<	<
M-Z 6/1-11	525.5	49.1	14.0	<
M-Z 6/1-12	321.7	64.4	42.9	<
M-Z 6/1-13	261.8	710.9	200.6	<
M-Z 6/1-14	190.4	<	<	<
M-Z 4/1-2	251.2	75.4	40.7	53.4
M-Z 4/1-3	99.6	141.9	45.0	17.2
M-Z 4/1-4	100.9	99.7	8.8	4.4
M-Z 4/1-6	113.6	<	<	3.6
M-Z 4/1-7	67.6	112.1	<	13.9
M-Z 4/1-8	97.1	34.3	<	2.7
M-Z 4/1-9	138.6	131.9	86.3	58.8
M-Z 4/1-10	156.0	107.5	19.2	23.0
M-Z 4/1-11	229.4	44.4	<	15.2
M-Z 4/1-12	158.7	<	<	4.2
M-Z 4/1-13	162.7	45.1	9.7	3.5
M-Z 4/1-15	169.7	75.9	13.1	5.5
M-Z 4/1-16	318.9	190.4	61.4	2.9
M-Z 4/1-17	272.0	273.3	55.1	19.4
M-Z 4/1-18	461.5	369.0	44.3	36.4
M-Z 4/1-19	392.4	139.1	57.5	6.3
M-Z 4/1-22	294.8	92.1	44.9	2.2
M-Z 4/1-23	359.4	97.5	118.1	64.5
M-Z 4/1-24	507.0	57.5	24.5	22.3
M-Z 4/1-25	240.6	76.0	<	3.4

Mokrsko-West	Na	K	Fe	As
M-Z 4/1-27	387.5	96.9	<	4.2
M-Z 4/1-28	372.6	53.0	<	3.2
M-Z 4/1-29	322.5	131.3	15.3	2.1
M-Z 4/1-30	321.4	55.1	<	3.5
M-Z 4/1-31	397.7	452.3	130.6	15.2
M-Z 4/1-33	561.1	250.4	<	17.1
M-Z 4/1-35	601.9	356.1	66.6	40.0
M-Z 4/1-36	606.1	107.1	31.4	24.9
M-Z 4/1-39	329.6	<	7.3	16.1
M-Z 4/1-40	424.2	39.7	155.9	26.8
M-Z 4/1-41	261.1	106.7	37.7	13.9
M-Z 4/1-42	315.0	38.0	11.5	18.0
M-Z 4/1-44	332.4	31.5	10.8	8.4
M-Z 4/1-45	187.8	383.2	55.2	51.5
M-Z 4/1-46	159.5	188.6	20.4	45.1
M-Z 4/1-47	342.0	25.7	10.1	4.0
M-Z 4/1-48	155.7	61.0	<	3.8
M-Z 4/1-49	265.5	12.4	2.6	7.4
M-Z 4/1-50	200.2	53.4	9.1	4.5