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Appendix 1 List of Laboratory Test Samples (1)

	Locality		Rock name	Laboratory test						Remarks
	Dorillhole	Depth(m)		E	F	M	T	P	X	
1	MJKA-14	17.6	Cpx skarn (Lamprophyre)				O			
2	MJKA-14	18.7	Cpx skarn (Lamprophyre)				O			
3	MJKA-14	38.1	Dolomite				O		O	
4	MJKA-14	104.2	Py-Mt ore in Cpx-Ga skarn					O		
5	MJKA-14	104.3	Mt-Ga-Px skarn		O					
6	MJKA-14	107.8	Lamprophyre				O			
7	MJKA-14	113.1	Asp-Qz vein		O					
8	MJKA-14	120.9	Asp-Qz vein		O					
9	MJKA-14	125.5	Py-Cp-Qz vein in Cpx skarn					O		
10	MJKA-14	170.9	Granodiorite & Lamprophyre(Dike)				O			
11	MJKA-14	179.7	Fine-grained granite				O			
12	MJKA-14	180.7	Mo-Asp-Qz vein		O					
13	MJKA-15	10.2	Lamprophyre				O			
14	MJKA-15	27.6	skarnized dike		O					
15	MJKA-15	68.8	Ga-Cpx skarn (Lamprophyre or gabbro)				O			
16	MJKA-15	72.6	Hb-Cpx skarn	O	O			O		
17	MJKA-15	77.0	Mt-Qz-Px skarn		O					
18	MJKA-15	78.3	Cp-Mt ore in Px skarn					O		
19	MJKA-15	79.7	Py-Cp-Mt ore in Cpx skarn					O		
20	MJKA-15	95.4	Py ore in Cpx-Ga skarn					O		
21	MJKA-15	97.2	Asp-Cp-Qz vein in skarnized rock					O		
22	MJKA-15	99.9	Asp-Cp-Qz vein		O					
23	MJKA-15	100.1	Asp-Cal vein in Cpx skarn					O		
24	MJKA-15	105.8	Cpx skarn (Gabbro?)				O			
25	MJKA-15	109.0	Altered anorthosite or gabbro				O		O	
26	MJKA-15	123.5	Mo-Asp-Qz vein		O					
27	MJKA-16	27.2	Ga-Cpx skarn (syenite?)				O			
28	MJKA-16	105.0	Mt-Hb-Cal-Qz vein				O		O	
29	MJKA-16	105.5	Px-Ga skarn		O					
30	MJKA-16	106.8	Cp-Mt ore in Cpx skarn					O		
31	MJKA-16	109.0	Cpx skarn (Granodiorite?)				O			
32	MJKA-16	111.3	Py ore in brecciated silicified rock					O		
33	MJKA-16	117.3	Qz-Cal rock (Brecciated,silicified limestone?)				O		O	
34	MJKA-16	125.6	Asp-Py-Qz vein in grnodiorite porphyry		O			O		
35	MJKA-16	150.4	argillized granodiorite porphyry						O	
36	MJKA-16	166.3	Asp-Qz vein		O					
37	MJKA-16	167.3	Asp-Qz vein		O					
38	MJKA-17	68.2	Mt ore in Cpx-Ga skarn		O			O		
39	MJKA-17	69.1	Cp-Qz vein in Ga-Cpx skarn					O		
40	MJKA-17	71.1	Cpx skarn (Gabbro?)				O		O	

Appendix 1 List of Laboratory Test Samples (2)

	Locality		Rock name	Laboratory test						Remarks
	Dorillhole	Depth(m)		E	F	M	T	P	X	
41	MJKA-17	90.3	Cpx skarn (Lamprophyre?)				O		O	
42	MJKA-17	126.2	Granodiorite porphyry (altered)				O		O	
43	MJKA-17	128.8	Po-Asp-Py-Qz vein		O					
44	MJKA-17	131.3	Asp vein in granodiorite porphyry					O		
45	MJKA-18	8.8	Granodiorite porphyry				O			
46	MJKA-18	29.8	Ol gabbro				O			
47	MJKA-18	41.4	Monzodiorite				O			
48	MJKA-18	57.5	Monzodiorite & Cpx skarn (Gabbro?)				O			
49	MJKA-18	58.6	Granodiorite porphyry & Cpx skarn (Monzonite)				O			
50	MJKA-18	90.8	Cpx skarn (Ol gabbro)				O			
51	MJKA-18	97.9	Py-Qz-Cal vein in brecciated silicified rock		O			O		
52	MJKA-18	99.1	Cpx skarn (Gabbro or anorthosite)				O			
53	MJKA-18	111.7	Cpx skarn				O			
54	MJKA-18	115.7	Asp-Qz vein		O					
55	MJKA-18	116.7	Cp ore in Ga-Cpx skarn					O		
56	MJKA-18	116.8	Cp ore in Hb-Cpx skarn	O				O		
57	MJKA-18	116.9	Cp ore in Cpx-Ga skarn					O		

	Sample no	Rock name	Laboratory test						Remarks
			E	F	M	T	P	X	
1	1930C5-15.5F(1)	Cp ore in Cpx skarn	O	O			O		
2	1930C5-15.5F(2)	Cp ore in Cpx skarn		O					
2	1930C5-16Fa	Cp ore in Cpx-Ga skarn	O				O		
3	1930C5-16Fb	El-Cp ore in Cpx skarn					O		
4	1930C5-17F	Py-Cp ore in Cpx skarn		O			O		
5	1930C6-17.6FL	Asp-Cp-Py ore in Cpx skarn					O		
7	1930C6-23Fa	Diorite				O			
8	1930C6-23Fb	Zoned skarn	O			O			
6	1930C6-23Fc	Ga skarn		O					
10	1930C6-44.4R	Diorite				O		O	
11	1930C6-45.2R	Ca-Qz vein		O					
12	1930C6-71CL	Skarnized limestone				O		O	
13	1930C6-79F	Ga skarn				O		O	
14	1930C6-126F	Py-Cp ore in Cpx skarn					O		
15	1930C6-131.5FLa	Ga skarn		O		O		O	
17	1930C6-131.5FLb	Cp ore in Cpx skarn					O		
18	No.5 ore body	SCM in silicified carbonate skarn					O	O	

E : EPMA, F : Homogenization temperature of fluid inclusions, M : Mineral separation test, T : Thin section,

P : Polished thin section, X : X-ray diffraction analysis. Refer to Appendix 2 for abbreviations of minerals.

Appendix 2 Microscopic Observations of the Thin Sections

No.	Locality		Sample name	Grade	Primary minerals														Secondary minerals																		Remarks
	Drillhole	Depth(m)			Qz	Pl	Kf	Bt	Ms	Hb	Cpx	Opx	Ol	Mt	Ilm	Sph	Zr	Ap	Qz	Pl	Kf	Se	Ch	Bt	Ep	Cal	Dol	Ga	Cpx	Wo	Prh	Ac-Hb	Pum	Sph	Spt	Op	Mt	Hm	Go	Ap	Ves	
1	MJKA-14	17.6	Cpx skarn (Lamprophyre)	B		○				○								·				·	·			△			○					△								With Cal vein
2	MJKA-14	18.7	Cpx skarn (Lamprophyre)	B		○																·	·	○					○		△	·		·								
3	MJKA-14	38.1	Dolomite	E														·					·			·	◎											·	·			With Qz-Cal vein
4	MJKA-14	107.8	Lamprophyre	E	·	○	·	△		△	○	·	(·)						·		·		·			·					△				·						
5A	MJKA-14	170.9	Granodiorite	E	○	◎	△	△		△												·	△			△																Crushed along contact with 5B
5B	MJKA-14	170.9	Lamprophyre (Dike)	E		○				○				·									△			△																Intruding 5A with glassy margin
6	MJKA-14	179.7	Fine-grained granite	E	○	○	△	△		△													△			:					·											Partly porphyritic
7	MJKA-15	10.2	Lamprophyre	E	·	○		△		○				·				·				·				·					·							·				
8	MJKA-15	68.8	Ga-Cpx skarn (Lamprophyre or gabbro)	A		○				·												·				·	△	◎														Hb : Relict within Cpx
9	MJKA-15	105.8	Cpx skarn (Gabbro?)	B		○		△		△					·			△					·			·			○		△			△							
10	MJKA-15	109.0	Altered anorthosite or gabbro	D		◎				·																△					△	△		△							
11	MJKA-16	27.2	Ga-Cpx skarn (syenite?)	A		△	◎												·				·		△			○	○		△	·			·				△		
12	MJKA-16	105.0	Mt-Hb-Cal-Qz vein																○							○						○					△					Hb : Zoned from blue-green to pale green
13	MJKA-16	109.0	Cpx skarn (Granodiorite?)	B		○									△											·			○		△	△		△							
14	MJKA-16	117.3	Qz-Cal rock (Brecciated, silicified limestone?)	D															○							◎					△										
15	MJKA-17	71.1	Cpx skarn (Gabbro?)	B		○																				·			○		△		△	△							
16	MJKA-17	90.3	Cpx skarn (Lamprophyre?)	B		○																·				·			◎		·	·		○						·	
17	MJKA-17	126.2	Granodiorite porphyry	D	○	○	○	△		△													△		△	△					○										With Prh-Cal vein
18	MJKA-18	8.8	Granodiorite porphyry	E	○	◎	△	△		△	△				·	·		·													·										Unaltered
19	MJKA-18	29.8	Ol gabbro	E		△		△		○	△		○	·								·									·										Corona strcture (Ol→Cpx→Hb→Bi)
20	MJKA-18	41.4	Monzodiorite	E	△	◎	○	○		△	△	△		△		·	·	·				·																				Corona structure (Opx→Cpx→Hb→Bi)
21A	MJKA-18	57.5	Monzodiorite	E		◎	○	△			△			·	·	·							·			·					·	·										Intruded by 21A with sharp contact
21B	MJKA-18	57.5	Cpx skarn (Gabbro?)	B		○		△							·	·													◎		○	○		·							
22A	MJKA-18	58.6	Granodiorite porphyry	E	○	◎	○	△		△	△												·			·					·	△		·							Containing Qz xenocryst
22B	MJKA-18	58.6	Cpx skarn (Monzonite)	B		○	○	△		△					·	·													◎		·										Intruded by 22A with sharp contact
23	MJKA-18	90.8	Cpx skarn (Ol gabbro)	B		○		△					△		·			△					·						◎		·			·	·						
24	MJKA-18	99.1	Cpx skarn (Gabbro or anorthosite)	B		○																·				·			○		△	△		△						△	
25	MJKA-18	111.7	Cpx skarn	B															△		·		○			·			◎					·	·						Op : Disseminated

No.	Sample no.	Sample name	Grade	Primary minerals														Secondary minerals																				Remarks
				Qz	Pl	Kf	Bt	Ms	Hb	Cpx	Opx	Ol	Mt	Ilm	Sph	Zr	Ap	Qz	Pl	Kf	Se	Ch	Bt	Ep	Cal	Dol	Ga	Cpx	Wo	Prh	Ac-Hb	Pum	Sph	Spt	Op	Mt	Hm	Go	Ap	Ves	
1	1930C6- 23Fa	Diorite	D	△	△	○			△	○																	○								△						Kf rich
2	1930C6- 23Fb	Zoned skarn	A	△	·		·									·								·	○										△						Cpx→ Ga→Cal-rich skarn
3	1930C6- 44.4R	Diorite	D	·	·	△	○			○											△	·		·	·											△						Bi rich
4	1930C6- 71CL	Skarnized limestone	A	○																	△	·			◎	△										△						Fault shear zone, electrum 10 μm
5	1930C6- 79F	Ga skarn	A	△					○												·	·			○		◎									△						Fault shear zone, electrum 200 μm
6	1930C6- 131.5FLa	Ga-Cpx skarn	A	△						◎											△				○		○									○						Electrum 150 μm in Bornite

[Abbreviations]

Ac-Hb : Actinolite-Hornblende, Ap : Apatite, Bt : Biotite, Cal : Calcite, Ch : Chlorite, Cpx : Clinopyroxene, Dol : Dolomite, Ep : Epidote, Ga : Garnet, Go : Goethite, Hb : Hornblende, Hm : Hematite, Ilm : Ilmenite, Kf : K-feldspar, Ms : Muscovite, Mt : Magnetite, Ol : Olivine, Op : Opaque mineral, Opx : Orthopyroxene, Pl : Plagioclase, Prh : Prhenite, Pum : Pumpellyite, Py : Pyrite, Qz : Quartz, Se : Sericite, Sph : Sphene, Spt : Serpentine, Ves : Vesuvianite, Wo : Wollastonite, Zr : Zircon

[Legend]

◎ : Abundant, ○ : Common, △ : Poor, · : Rare

Grade : grade of skarnization

A : high, B: moderate, C : low, D : very low, E : none

[Primary/Secondary]

Primary=igneous origin, Secondary=hydrothermal or sedimentary origin