

Supplementary Table S1. Representative analyses
of representative constituent minerals in a basic
nodule collected from Stop 1d.

Sample No.	KS02			
Rock	SBHn			
Mineral	Chu	Cln	Spl	Grt
SiO ₂	37.09	18.74	0.00	39.89
TiO ₂	3.17	0.32	0.01	0.17
Al ₂ O ₃	0.02	40.82	64.64	20.61
Cr ₂ O ₃	0.00	0.07	0.15	0.08
V ₂ O ₃	0.00	0.00	0.10	0.00
FeO*	8.73	2.07	13.95	6.73
MnO	0.17	0.00	0.08	0.44
MgO	48.54	20.77	19.95	2.88
ZnO	0.00	0.02	0.03	0.02
BaO	0.02	0.00		
CaO	0.04	12.95	0.15	29.44
Na ₂ O	0.00	0.28	0.00	0.01
K ₂ O	0.01	0.00	0.00	0.00
F	1.74			
Cl	0.00			
=O=F, Cl	0.73			
Total	98.80	96.04	99.06	100.27
O	17	11	4	12
Si	3.970	1.312	0.000	3.004
Ti	0.255	0.017	0.000	0.010
Al	3.000	3.368	1.936	1.828
Cr	0.000	0.004	0.003	0.005
V	0.000	0.000	0.002	0.000
Fe ^{3+**}			0.058	0.141
Fe ^{2+**}	0.782	0.121	0.238	0.283
Mn	0.015	0.000	2.000	28.000
Mg	7.743	2.167	0.756	0.323
Zn	0.000	0.001	0.001	0.001
Ba	0.010	0.000		
Ca	0.004	0.971	0.004	2.375
Na	0.000	0.038	0.000	0.001
K	1.000	0.000	0.000	0.000

*Total iron as FeO.

**Calculated values (see text).

Abbreviations are: Chu, clinohumite; Cln, clintonite; Spl, spinel; Grt, garnet; SBHn, spinel-biotite-hornblende nodule.

Supplementary Table S2. Whole-rock compositions of lamprophyre collected from Stop 3.

Rock	Amphibole-bearing type			
	Outer dike	Inner dike		
		Sample No.	Chilled margin	Margin
	KSN05-1	KSN05-2a	KSN05-2b	KSN05-3
(wt%)				
SiO ₂	55.30	54.70	53.80	53.00
TiO ₂	0.98	1.01	1.00	0.95
Al ₂ O ₃	18.40	18.60	18.30	17.00
Fe ₂ O ₃ *	6.63	6.19	6.95	7.51
MnO	0.12	0.12	0.14	0.14
MgO	3.91	4.01	4.59	6.21
CaO	7.40	7.43	7.61	7.79
Na ₂ O	3.12	3.07	2.91	2.62
K ₂ O	1.77	2.09	2.01	1.94
P ₂ O ₅	0.30	0.31	0.31	0.29
Total	97.93	97.53	97.62	97.45
(ppm)				
V	163	162	169	181
Cr	51	52	76	157
Ni	14	17	22	51
Co	28	26	30	36
Cu	27	b.d.**	b.d.**	19
Zn	62	69	69	77
Rb	58	68	65	60
Sr	440	445	421	392
Y	24	25	24	23
Zr	132	130	121	115
Ba	630	750	649	511
Pb	6	7	4	6
Th	8	9	9	8

*Total iron as Fe₂O₃.

**Below the detection limit.