

Table 3. Tonnage and grade characteristics of contact-type copper-nickel platinum-group elements deposits. Values represent the total of resources and past production. Large igneous province (LIP) names and ratings from Ernst and Buchan (2001).

Magmatic event	LIP Rating	Approximate age (Ma)	Deposit name	Property name	Intrusion1	Intrusion2	Country	Aggregated	Area_sqkm	Depth of resource estimate, meters	Mine_type	Tons of ore	Ni, percent	Cu, percent	Pt, g/t	Pd, g/t	Au, g/t	Reference
Northern Baltica-1 (C) LIP events	A (1v)	2440	Ahmavaara	Suhanko project	Portimo	Suhanko Intrusion	Finland	one	0.8682	250	op	106,693,000	0.09	0.23	0.245	1.165	0.139	Puritch and others (2007)
Bushveld (C) LIP event	A (1s)	2054	Akanani	Akanani	Bushveld	Bushveld Complex, Potgietersrus Limb	RSA	one	3.8351	2000	ug	269,700,000	0.21	0.12	1.440	1.710	0.200	Lonmin Platinum (2007)
Bushveld (C) LIP event	A (1s)	2054	Aurora (Kransplaats, Nonnenwerth, LaPucella, and Altona)	Aurora Project	Bushveld	Bushveld Complex, Potgietersrus Limb	RSA	many	8.6364	200	op	133,430,000	0.05	0.08	0.436	0.714	0.191	Pan Palladium Limited (2005, 2007)
Stillwater (C) LIP event	B (4i)	2701	Benbow	Benbow	Stillwater	Stillwater Complex	USA	one	0.26603	457	op	130,065,264	0.22	0.22	0.007	0.011		Zientek (1993)
Keweenaw (C) LIP event	A (1v)	1099	Birch Lake	Birch Lake	Duluth	South Kawishiswi Intrusion	USA	one	2.5445	840	op	195,504,000	0.16	0.53	0.255	0.552	0.123	Routledge (2008)
Stillwater (C) LIP event	B (4i)	2701	Camp deposit	AMAX Camp deposit	Stillwater	Stillwater Complex	USA	one	0.090011		op	5,850,000	0.42	0.23	0.018	0.1385		Zientek (1993)
Northern Baltica-1 (C) LIP events	A (1v)	2440	Fedorovo	Fedorovo project	Fedorovo	Fedorovo Intrusion	Russia	one	2.0469		op	166,210,000	0.09	0.15	0.311	0.933	0.084	Barrick (2008); Schissel and others (2002); Mitrofanov and others (2007)
Keweenaw (C) LIP event	A (1v)	1100	Geordie Lake	Geordie Lake	Coldwell	Coldwell Complex	Canada	one	0.3940	200	op	29,800,000	0.01	0.33	0.030	0.550	0.040	P&E Mining Consultants, Inc. (2007)
Bushveld (C) LIP event	A (1s)	2054	Grass Valley, North and South Zones	Grass Valley Project	Bushveld	Bushveld Complex, Potgietersrus Limb	RSA	many	0.8475	160	op	93,507,000	0.11	0.03	0.510	0.590	0.030	Pan Palladium Limited (2008)
Northern Baltica-1 (C) LIP events	A (1v)	2440	Haukiahö	Haukiahö	Koivismaa	Koivismaa Layered Igneous Complex	Finland	one	0.4070	150	op	27,000,000	0.24	0.36	0.209	0.549	0.216	Iljina and others (2005)
Northern Baltica-1 (C) LIP events	A (1v)	2440	Konttijärvi	Suhanko project	Portimo	Konttijärvi Intrusion	Finland	one	0.3955	200	op	42,110,000	0.06	0.13	0.408	1.436	0.106	Puritch and others (2007)
Northern Baltica-1 (C) LIP events	A (1v)	2440	Lavotta	Lavotta	Koivismaa	Koivismaa Layered Igneous Complex	Finland	one		100	op	3,000,000	0.21	0.26	0.180	0.260	0.200	Matilla and others (1976); Lahtinen (1983)
Keweenaw (C) LIP event	A (1v)	1100	Marathon	Marathon PGM-Cu Project	Coldwell	Coldwell Complex	Canada	one	0.5924	350	op	70,200,000	0.03	0.32	0.250	0.910	0.090	P&E Mining Consultants, Inc. (2007)
Keweenaw (C) LIP event	A (1v)	1099	Maturi and Nokomis	Maturi and Nokomis	Duluth	South Kawishiswi Intrusion	USA	many	3.6948	900	op,ug	623,013,000	0.21	0.62	0.131	0.306	0.070	Clow and others (2006); Routledge (2007)
Keweenaw (C) LIP event	A (1v)	1099	Mesaba	Minnamax, Babbitt, AMAX area	Duluth	Partridge River intrusion	USA	one	9.1100		op	1,200,000,000	0.09	0.43				Vance (2007)
Bushveld (C) LIP event	A (1s)	2054	Mokopane	Mokopane	Bushveld	Bushveld Complex, Potgietersrus Limb	RSA	one	0.5778	320	op	39,740,000	0.15	0.09	0.220	0.330		Directorate of Mineral Resources (2006); AIM Resources (2005)
Stillwater (C) LIP event	B (4i)	2701	Mouat	Mouat	Stillwater	Stillwater Complex	USA	one	0.4931	580	op	132,000,000	0.31	0.29	0.004	0.011		Zientek (1993)
Northern Baltica-1 (C) LIP events	A (1v)	2440	Mt. General'skaya	Mt. General'skaya	Mt. General'skaya	Mt. General'skaya	Russia	one			op	53,333,000	0.51	0.26	0.225	2.025	0.008	Geological Survey of Finland (2009a)
Northern Baltica-1 (C) LIP events	A (1v)	2440	Niittylampi	Niittylampi	Portimo	Suhanko Intrusion	Finland	one		200	op	850,000	0.67	0.49	0.270	0.680	0.030	Lahtinen (1987)
Keweenaw (C) LIP event	A (1v)	1099	Northmet	Dunka Road, USS Dunka Road/area	Duluth	Partridge River intrusion	USA	one	1.8260	1040	op	492,300,000	0.08	0.27	0.065	0.237	0.034	Hunter (2006)
Tertiary slab window		40	Nunatak-Brady Glacier	Nunatak-Brady Glacier	La Perouse	La Perouse - Crillon	USA	one	1.265264	600		90,000,000	0.53	0.33	0.116	0.113		U.S. Bureau of Mines (1991); Czamanske and others (1981); Himmelberg and Loney (1981)
Stillwater (C) LIP event	B (4i)	2701	Nye Basin	Nye Basin	Stillwater	Stillwater Complex	USA	one	0.39076	457	op	284,783,688	0.22	0.254	0.003	0.009		Zientek (1993)
Bushveld (C) LIP event	A (1s)	2054	PPRust North and Boikgantsho JV (Drenthe, Overysel North, and PPRust North)	PPRust North and Boikgantsho JV	Bushveld	Bushveld Complex, Potgietersrus Limb	RSA	many	5.1630	500	op	1,667,914,500	0.11	0.15	0.775	0.903	0.124	Tulp and others (2005); Anglo Platinum (2006)
Matachewan (C) LIP event(s)	A (3)	2440	River Valley - Dana and Lismer (Dana North, Dana South, Lismer North, Lismer's Ridge)	Dana North, Dana South, Lismer North, Lismer's Ridge	River Valley	River Valley Mafic intrusion	Canada	many	0.6563	300	op	28,168,000	0.02	0.10	0.332	0.968	0.060	Pacific North West Capital Corp. (2006)
Matachewan (C) LIP event(s)	A (3)	2440	River Valley - Varley	Varley	River Valley	River Valley Mafic intrusion	Canada	one	0.2865	150	op	4,803,000	0.02	0.07	0.341	0.936	0.057	Pacific North West Capital Corp. (2006)
Stillwater (C) LIP event	B (4i)	2701	Rocky Claim Group (Chrome Lake)	Rocky Claim Group	Stillwater	Stillwater Complex	USA	one	0.122937	213	op	49,000,000	0.28	0.26	0.005	0.011		Zientek (1993)
Bushveld (C) LIP event	A (1s)	2054	Rooiport, M2 and L3 zones	Rooiport	Bushveld	Bushveld Complex, Potgietersrus Limb	RSA	one	3.9358	200	op	18,128,000	0.19	0.11	0.470	0.736	0.085	Verbeek and Lomber (2005)
Northern Baltica-1 (C) LIP events	A (1v)	2440	Rusamo	Rusamo	Koivismaa	Koivismaa Layered Igneous Complex	Finland	one		100	op	1,500,000	0.24	0.39	0.266	0.384	0.150	Lahtinen (1983)
Bushveld (C) LIP event	A (1s)	2054	Sandsloot	PPRust: Potgietersrust Platinums Limited	Bushveld	Bushveld Complex, Potgietersrus Limb	RSA	one	1.0309	500	op	320,160,000	0.09	0.17	1.163	1.348	0.208	Anglo Platinum (2006)
Keweenaw (C) LIP event	A (1v)	1099	Serpentine	Serpentine (Bear Creek/AMAX)	Duluth	South Kawishiswi Intrusion	USA	one	0.8343		op	6,350,400	0.30	0.88				Miller and others (2002)
Bushveld (C) LIP event	A (1s)	2054	Sheba's Ridge	Sheba's Ridge	Bushveld	Bushveld Complex, eastern limb	RSA	one	5.0390	400	op	716,000,000	0.19	0.07	0.210	0.620	0.080	Ridge Mining plc (2008)
Keweenaw (C) LIP event	A (1v)	1099	Spruce Road	Spruce Road (INCO)	Duluth	South Kawishiswi Intrusion	USA	one	1.7138	530	op	405,100,000	0.14	0.38				Routledge and Cox (2007)
Northern Baltica-1 (C) LIP events	A (1v)	2440	Suhanko	Suhanko	Portimo	Suhanko Intrusion	Finland	one		100	op	1,000,000	0.27	0.31	0.200	0.900	0.030	Geological Survey of Finland (2009b)
Northern Baltica-1 (C) LIP events	A (1v)	2440	Vaalarampi	Vaalarampi	Portimo	Suhanko Intrusion	Finland	one		150	op	6,050,000	0.31	0.20	0.200	0.550	0.060	Geological Survey of Finland (2009c); Reino and others (1978)
Bushveld (C) LIP event	A (1s)	2054	War Springs	War Springs	Bushveld	Bushveld Complex, Potgietersrus Limb	RSA	one	1.4739	500	op	46,965,000	0.13	0.10	0.250	0.780	0.070	Platinum Group Metals (2008)
Keweenaw (C) LIP event	A (1v)	1099	Wetlegs	Wetlegs (Bear Creek/Exxon)	Duluth	Partridge River intrusion	USA	one	1.3243		op	34,473,600	0.10	0.29				Miller and others (2002)
Bushveld (C) LIP event	A (1s)	2054	Zwartfontein South	PPRust: Potgietersrust Platinums Limited	Bushveld	Bushveld Complex, Potgietersrus Limb	RSA	one	0.2597	300	op	145,720,000	0.10	0.19	1.055	1.156	0.166	Anglo Platinum (2006)