A RE-EVALUATION OF PRODUCTION DATA BRIDGE RIVER-BRALORNE CAMP (92J)

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INTRODUCTION

Production data can be used to develop quantitative models for exploration and evaluation of polymetallic vein deposits in mining camps (Sinclair, 1979, 1982; Goldsmith and Sinclair, 1985). Many of the polymetallic deposits in the Bridge River-Bralorne camp have produced gold and silver and a few contained substantial tonnages of ore. This investigation of available production data from the Bridge River-Bralorne camp was undertaken due to the resurgence of gold exploration in the area.

The Bridge River area has been known as a gold-bearing area since the last century and originally was developed extensively by placer miners before lode mining became important. The rugged valleys and peaks of the Bralorne area have hindered development, most of which has been confined to the valleys of Cadwallader Creek and Carpenter Lake. In its early days the area was referred to as the Bridge River camp but since dams on the Bridge River have led to the formation of Carpenter and Downton Lakes the name Bralorne camp has been adopted, after the largest mine in the area.

TABLE 46-1. PRODUCERS

Map No.	Name	Tonnes	UTM Coord. E-ing	UTM Coord. N-ing	Latitude	Longitude	Grade[2]	Au/Ag	Country Rock	Reference[1] Author	Reference[1] Year
39	Ample[3]	2 789	5652	56097	50°39′00″	122°02′40″	Au 8.11		brgp	BCMM	1946
2	Blackbird[4]	145	5143	56241	50°46′20″	122°47′45″	Au 17.8 Ag 2.1	8.3	brin pion pres		
1	Bralorne	4 981 413[5]	5129	56259	50°46′40″	122°49′00″	Au 17.6 Ag 4.4	5.4	brin pion pres		
41	Brett Group[3]	9 177	5348	56078	50°38′00″	122°28′20″	Au 2.4		brin		
29	Congress	9436	5155	56378	50°53′30″	122°46′40″	Au 2.7 Ag 1.4	2	brgp dyke	McCann AR9355	1922 1981
7	Coronation	11 155	5148	56234	50°45′45″	122°47′30″	Au 19.7 Ag 2.8	7.0	brin pion		
22	Gloria Kitty	4 343	5123	56308	50°49′45″	122°49′30″	Au 0.11 Ag 0.07	1.5	brin pion		
49	Jewel	51	5043	56395	50°54′30″	122°56′20″	Au 73.2 Ag 8.1	0.24[8]	pres dyke hurl		
42	Lucky Strike	29	5097	56478	50°59′00″	122°51′40″	Au 53.3 Ag 1.8	0.45[8]	hurl brgp brin	BCMM	1936
46	Minto	80 650	5176	56386	50°54′00″	122°45′00″	Au 6.8 Ag 19.5	0.35	brgp dyke		
4	Pioneer	2 313 552	5156	56228	50°45′30″	122°46′40″	Au 17.9 Ag 3.3	4	brin pion		
30	Wayside	39 094	5121	56362	50°52′40″	122°49′40″	Au 4.2 Ag 0.67	6.4	brin		

[1] Only given where the source was not MINFILE. The abbreviations are BCMM for British Columbia Minister of Mines Annual Report and AR . . . for Assessment Report files with the provincial government. For names see bibliography.
[2] Grams per tonne.
[3] Not in map-area, included for study purposes.
[4] Part of the greater Bralorne mine, figures kept separate for study.
[5] Not including reserve estimates of 211 000 tonnes (cut-off 0.033 ounces per ton) to 544 000 tonnes (cut-off 0.0275 ounces per ton).
[6] Not including reserve estimates of from 50 000 to 100 000 tons. Production was done on a test scale only.
[7] Part of the greater Bralorne mine, figures kept separate for study.
[8] Au-Ag ratio taken from various assay results.
[9] Test sample only, no further work.

British Columbia Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, 1985, Paper 1986-1.

TABLE 46-2. DEVELOPED PROPERTIES

Map No.	Name	UTM Coord. E-ing	UTM Coord. N-ing	Latitude	Longitude	Grade[1]	Au/Ag	Country Rock	Reference[1] Author	Reference[1] Year
3	Alma	5255	56119	50°46'55"	122°49'45"	Au 0.61		brgp pion brin	McCann	1922
24	Arizona	5115	563200	50°50'30"	122°50'15"	Au 2.1		brin	McCann	1922
28	B & F	5095	56401	50°54'45"	122°51'45"	Au 3.77		brgp pres dyke	BCMM Cairnes	1933 1937
13	Bramoose	5238	56190	50°43'30"	122°39'45"	Au		brgp bend pres	McCann BCMM	1922 1933
11	Butte	5242	56173	50°42'30"	122°39'30"	Au 6.1		noel pion brin	Cairnes BCMM BCMM	1937 1932 1933
20	California	5126	56298	50°49'20"	122°49'15"	Au 23.0 Ag		noel brin	Cairnes	1937
12	Dan Tucker	5222	56187	50°43'20"	122°41'10"	Au		pion brin		
45	Dauntless	5180	56392	50°54'20"	122°44'40"	Au 5.1 Ag 3.0	1.2	brgp	Cairnes	1943
36	Empire	5300	56159	50°51'40"	122°34'30"	Au 0.6 Ag		brgp dyke	McCann	1922
23	Forty Thieves	5118	56309	50°49'50"	122°50'00"	Au		brin	McCann Cairnes BCMM BCMM BCMM BCMM	1922 1937 1938 1931 1932 1933
47	Golden	5167	56385	50°54'00"	122°45'40"	Au 14.4 Ag 46.2	0.31	brgp	Cairnes	1943
25	Golden Gate	5114	56324	50°50'40"	122°50'15"	Au	4.2	brin	Cairnes	1937
44	Little Gem	5034	56383	50°53'45"	122°57'15"	Ag Au	2.5	coas		
48	Northern Light	5092	56467	50°59'30"	122°52'15"	Au 53.3 Ag 1.8	0.45	brgp dyke pres shul	BCMM Cairnes AR6002	1936 1943 1976
50	Olympic	5175	56374	50°53'30"	122°44'20"	Au 3.1 Ag 15.3	0.20	brgp dyke	Cairnes	1943
52	Peerless	5148	56414	50°55'30"	122°47'20"	Au Ag	0.11	brgp	AR8457	1980
27	Pilot	5078	56357	50°52'30"	122°53'20"	Au Ag	0.06	coas	McCann	1922
9	Pioneer Extension	5173	56223	50°45'15"	122°45'15"	Au Ag		brgp		
38	Ranger	5179	56314	50°50'15"	122°44'40"	Au Ag	0.53	brgp brin	BCMM	1946
33	Reliance	5163	56363	50°52'45"	122°46'10"	Au Ag	1.5	brgp	BCMM	1936
34	Spokane	5417	56373	50°53'20"	122°24'20"	Au Ag	0.95	rxmt brgp	McCann	1922
35	Summit	5176	56266	50°47'30"	122°45'00"	Au Ag	1.0	brgp dyke		
32	White & Bell	5075	56487	50°59'30"	122°53'30"	Au Ag	2.0	brin	McCann BCMM	1922 1914
21	Whynot	5124	56301	50°49'30"	122°49'30"	Au 15.3		brin	McCann Cairnes	1922 1937

[1] Grams per tonne.

TABLE 46-3. PROSPECTS

Map No.	Name	UTM Coord. E-ing	UTM Coord. N-ing	Latitude	Longitude	Grade[1]	Au/Ag	Country Rock	Reference[1] Author	Reference[1] Year
40	Benboe	5321	56281	50°48′20″	122°32′40″	Au 6.0 Ag 15.3	0.5	brgp	BCMM	1937
69	Canadian Gold	5088	56462	50°58′10″	122°52′30″	Au		brgp pres	AR6002	1976
56	Chalco	5257	56186	50°43′15″	122°38′10″	Au 61.2 Au 0.31	0.01	brgp bend	BCMM	1948
57	Conbra	5219	56184	50°43′10″	122°41′30″	Au		brgp brin pres		
51	Gray Rock	5213	56274	50°48′00″	122°42′00″	Ag Au		brgp		
17	Grull	5118	56268	50°47′40″	122°49′45″	Au		brgp		
64	Gun Creek	5062	56396	50°54′30″	122°54′40″	Au		brgp	AR8911 AR9927	1980 1981
26	Haylmore	5112	56327	50°50′45″	122°50′30″	Au		brin pres		
8	Holland	5172	56228	50°45′30″	122°45′30″	Au		brgp		
65	Jean	5116	56397	50°54′30″	122°50′00″	Au		unkn	AR8875	1980
71	Kangaroo	5088	56343	50°51′45″	122°52′30″	Au		noel brin	AR8488	1980
63	Kelvin	5175	56374	50°53′20″	122°45′00″	Au Ag		brgp dyke		
66	Lynn	5133	56402	50°55′00″	122°48′30″	Au		unkn	AR9080	1980
53	Marconi	5128	56357	50°52′30″	122°49′00″	Au		brgp	McCann	1922
43	Mary Mac	5220	56342	50°51′30″	122°41′15″	Au		brgp brin		
5	Mix	5188	56218	50°44′50″	122°44′00″	Au		brgp		
58	Native Son	4970	56456	50°57′50″	123°02′20″	Au Ag		hurl		
6	Native Son	5133	56238	50°46′00″	122°48′40″	Au		noel dyke	Cairnes	1937
60	North Star—University	5146	56387	50°54′10″	122°47′30″	Au 0.61 Ag 18.4	0.03	brgp dyke	BCMM	1910
70	Oro	5088	56256	50°47′00″	122°52′20″	Au		hurl	AR8234	1980
10	Paymaster	5183	56204	50°44′20″	122°44′40″	Au		hurl pion brin		
37	Primrose	5296	56417	50°55′40″	122°34′45″	Au		king		
61	Red Hawk	5227	56186	50°43′15″	122°40′40″	Au		brin pres noel		
14	Royal	5251	56167	50°42′15″	122°48′45″	Au		brin brgp		
16	Short o'Bacon	5113	56246	50°46′30″	122°50′20″	Au Ag		brin pres brgp	Cairnes	1937
15	Standard	5282	56155	50°41′30″	122°36′15″	Au		brgp pres		
18	Success	5127	56269	50°47′40″	122°49′15″	Au		brgp noel	Cairnes	1937
59	Summit	5336	56354	50°52′15″	122°31′20″	Au Ag	0.18	brgp	BCMM	1910
68	Thule		located over very large area			Au		brgp	AR9526	1981
67	Ural		located over very large area			Au		brgp dyke pres	AR9062	1981
31	Veritas	5063	56318	50°50′30″	122°54′40″	Au		brin	McCann	1922
62	Vine	5137	56288	50°48′45″	122°48′20″	Au		brgp	AR8292	1980
19	Waterloo	5166	56269	50°47′40″	122°45′50″	Au		brgp		
55	Wide West	5103	56485	50°49′20″	122°51′15″	Au		brin brgp		
54	24th of May	5094	56485	50°59′20″	122°52′00″	Au Ag	0.22	brgp hurl dyke	BCMM	1913

[1] Grams per tonne.

AVAILABLE DATA

To initiate this study a geological map of the camp (Harrop and Sinclair, 1985) was compiled using information from government publications and from company assessment files. A total of 71 mineral occurrences were identified (Tables 46-1, 46-2, and 46-3). All contain gold and silver, although a few, such as Minto are enriched in silver. Most production and exploration in the camp took place during the 1930's and 40's, but during recent decades considerable information about some properties has been lost. The individual property names given during the most productive period are used in this study. Data for all occurrences are summarized in Tables 46-1, 46-2, and 46-3 and the occurrences are separated into the three following groups:

(1) **Producers**: Those with a recorded tonnage milled and from which gold and generally silver were recovered.
(2) **Developed Properties**: Those having considerable work done over a long period but no recorded production.
(3) **Prospects**: Those about which little is known either due to little activity or lack of records.

These locations are known accurately, their geology is known to some extent and a gold-silver ratio could be established with confidence for the ore recovered. Generally there is a good record of the geology and in almost every case an average gold-silver ratio could be established.

Sources for this compilation include reports of the B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Survey of Canada papers and memoirs, assessments reports, and an unpublished manuscript by Stevenson (1958). A computer test file of map-area 92J for development of MINDEP, a computer-based filing system developed at the University of British Columbia (Sinclair *et al.*, 1978), was a detailed file on 92J and this was used as a starting point for the study. Of the earlier workers Cairnes (1937, 1943) was found to be the most informative. The maps from Stevenson also would have added to the study, but unfortunately these unpublished maps were not available. Other workers whose mapping has been studied in the compilation are Drysdale (1916), McCann (1922), Roddick and Hutchison (1973), Geological Association of Canada Guidebook #4 (1983), and various British Columbia Ministry of Energy, Mines and Petroleum Resources yearly reports and assessment reports.

GENERAL GEOLOGY

Harrop and Sinclair (1985) recently compiled a regional geological map of the Bralorne area. A brief description of the principal units follows:

(1) **Bridge River Group (Fergusson Series) (Middle Triassic and older)**: basalt; andesite; tuff; breccia; minor crystalline limestone; thinly bedded chert and argillite; massive chert; greenstone and biotite schist.
(2) **Noel Formation (Upper Triassic)**: argillaceous and tuffaceous sedimentary rocks; conglomerate; some chert and greenstone.
(3) **Pioneer Formation (Upper Triassic)**: greenstone derived from andesitic flows and pyroclastic rocks; andesite breccia, tuff, and flows; minor rhyolite, slate, argillite, limestone, and conglomerate.
(4) **Hurley Formation (Upper Triassic)**: thinly bedded limy argillite, phyllite, limestone, tuff, conglomerate, andesite, and minor chert.
(5) **Shulaps Ultramafics (Upper Triassic)**: peridotite; dunite.
(6) **Lower Jurassic (Lower Jurassic)**: argillite and shale; minor sandstone, limestone, and conglomerate.
(7) **Taylor Creek Group (Lower Cretaceous)**: conglomerate; shale; tuff; volcanic breccia; andesite and basalt.
(8) **Kingsvale Group (Upper Cretaceous)**: arkose; greywacke; shale and minor conglomerate.
(9) **Coast Plutonic Rocks (Upper Cretaceous)**: granite; granodiorite.
(10) **Bralorne Intrusives (Upper Cretaceous to Lower Tertiary)**: augite diorite; gabbro; trondhjemite; minor quartz diorite and soda granite.
(11) **Bendor Pluton (Lower Tertiary)**: granodiorite.
(12) **Rexmount Porphyry (Miocene ?)**: rhyolite porphyry.
(13) **President Intrusives (Age Unknown)**: serpentine; peridotite; dunite; pyroxenite.
(13a) **Sumner Gabbros (Age Unknown)**: peridotite; dunite; pyroxenite.
(14) **Dykes (Ages Various and Unknown)**: porphyry diorite; feldspar porphyry; hornblende porphyry; aplite.

Radiometric dating (Pearson, 1977, Table IV) of the various intrusive units has provided a recent understanding of the overall geology. Earlier workers assumed the Bralorne intrusives were older than the Coast Plutonic Complex to the west and the Bendor pluton to the east but current age data indicate that Bendor pluton is the younger, eastern edge of the Coast Plutonic Complex. The Bralorne intrusives north of Gold Bridge and near the Wayside mine give K/Ar age of 62.5 ± 1.8 Ma which is intermediate in age between the Coast Plutonic Complex and the Bendor pluton (Table 46-4). This is supported by another date for a dyke in the Minto mine, which indicates igneous activity at 67.7 ± 2.4 Ma. Overall a general easterly younging trend occurs across the map-area. However, the ultramafic President intrusives are an exception; they are found along both fault or shear zones and in larger masses. Cairnes (1943) relates the Sumner gabbro to these larger masses and implicitly associates the ultramafics in the Bralorne mine and surrounding area to the same President intrusives. Stevenson (1958) notes that the serpentinite in the ultramafic unit contains chromite

TABLE 46-4. K/Ar AGE DATES

Coast Plutonic Complex (West of study area)	Bi	77.8 ± 2.9 Ma (GSC 76-49)[1]
	Hb	72.9 ± 3.6 Ma (GSC 76-50)[1]
Bralorne Intrusives (trondhjemite)	Phen	62.5 ± 1.8 Ma (UBC)[2]
Minto Mine:		
(a) dyke; microdiorite porphyry	WR	67.7 ± 2.4 Ma (UBC)[2]
(b) mariposite in vein		45.4 ± 1.1 Ma (UBC)[2]
Bendor Pluton	Bi	57.4 ± 2.3 Ma (GSC 76-54)[1]
Dyke near Congress mine	WR	67.1 ± 2.2 Ma (UBC)[3]

[1] Wanless, *et al.*, 1977.
[2] Pearson, 1977.
[3] Cooke, B., personal communication.

TABLE 46-5. HOST LITHOLOGIES

	Producers (12)	Developed (24)	Prospects (35)
Bralorne intrusives	8	10	10
Coast plutonic and Bendor	0	3	1
President intrusives	3	3	7
Miscellaneous dykes	3	5	5
Bridge River Group	4	14	24
Pioneer Formation	5	3	1
Hurley Formation	1	0	4
Noel Formation	0	2	4
Others	0	2	1

Total properties, all groups: 71
NOTE: apparent discrepancies in numbers reflect multiple lithologies at some properties.

and magnetite. The President intrusives are of interest because some economic gold-bearing veins lie adjacent to, and terminate against, the serpentinite bodies.

MINERAL DEPOSIT CHARACTERISTICS

Stevenson (1958) summarizes both the controls and indicators of potential mineralization in the area, but some of the conclusions are difficult to verify due to incomplete records for many occurrences. The common proximity of the President intrusives to mineralization and the hosting of veins in the Bralorne intrusives and Pioneer greenstone is stressed by all workers. The incompetent sedimentary rocks lack open-spaced fracturing, consequently veins pinch out when entering the sedimentary units. Veins in the Bralorne area also bear a constant angular relationship of 30 degrees to the trend of their host diorite-granite. Most dip north or northeast but a few significant veins are oriented across this attitude. Some productive veins comprise 1 to 5-centimetre-thick quartz ribbons separated by thin layers of sericite and chert. These schist layers may contain fine-grained sulphides, as well as native gold which is locally slickensided. Gold is also found in quartz-cemented breccias and in massive quartz. Gangue minerals include widespread quartz with local calcite; sericite, chlorite, and dolomitic and ankeritic carbonates also occur in minor amounts, while mariposite, talc, and scheelite are sporadically present. These minerals have only a limited use for exploration because they are also found in gold-poor areas. The main sulphides associated with gold are pyrite and arsenopyrite, with traces of sphalerite, galena, chalcopyrite, and tetrahedrite. A high stibnite content is generally associated with enhanced silver values.

Harrop and Sinclair (1985) noted the presence of two linear trends defined by faults, the Bralorne intrusives, and mineral occurrences. Two fault zones closely follow these trends; these are steeply dipping and may join at depth. The northwesterly and northerly striking fault zones intersect in the Bralorne mine area, which is the largest producer in the area.

A tabulation of rocks hosting the gold occurrences is shown in Table 46-5. The Bralorne intrusives predominate as host rocks to economic veins.

PRODUCTION DATA

The only quantitative data available for producers and developed properties are gold and silver production and assay results. Production figures are not always easy to relate to assay figures, so to reduce bias, gold/silver ratios are an important consideration in this study. Average gold/silver values for 29 deposits were established as

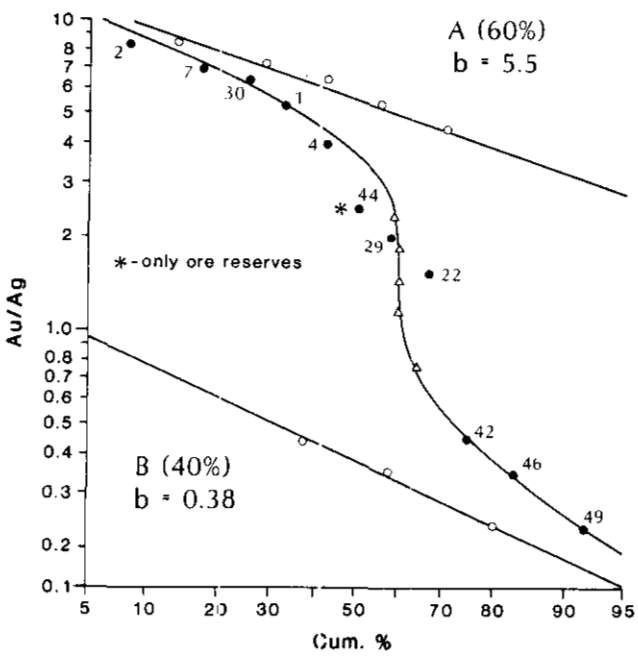

Figure 46-1. Probability graph of Au/Ag ratios for past producers from Bralorne Mining Camp, cumulated individually from high to low volumes. Black dots are original data with associated deposit numbers relating to Table 46-1. Straight lines (A and B) are two ideal partitioned populations described in text with geometric means given by b.

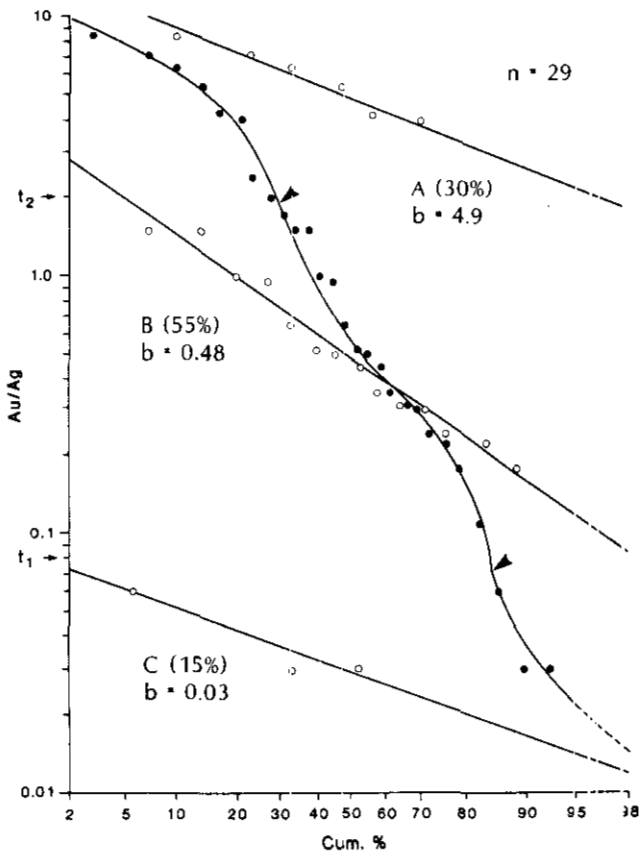

Figure 46-2. Probability graph of Au/Ag ratios for all producers and developed properties in Bralorne Mining Camp, cumulated individually from high to low volumes. Symbols as on Figure 46-1.

representative of developed and productive properties. Only limited information is available for tungsten, copper, and antimony. Two log-probability plots were drawn using the gold/silver data, one from the producers' data and one from all the data. The producers' data plot has only 11 points, but shows the presence of two populations (Fig. 46-1) at a ratio of 60:40 (A:B) with A being the population with higher gold/silver values. In the plot of all available gold/silver points (Fig. 46-2) there is a distinct three population curve, the upper two populations being comparable to those of Figure 46-1. The range of gold/silver values found in occurrences within the primarily sedimentary sequences such as the Bridge River Group correspond very well with the B population of Figure 46-2. Also, the occurrences within the Bralorne intrusives correlate with the A population of Figure 46-2. A threshold value of gold/silver = 1.5 to 2.0 separates these two populations. Note that of the 11 values of gold/silver = >1.5, nine are from producers. Veins within the Bralorne intrusives seem to have a higher potential to be ore bearing and are distinguishable by high gold/silver ratios. Higher gold/silver ratios are generally present in the more economically successful properties; this suggests that gold/silver ratios of vein samples probably represent a sound exploration parameter. The Blackbird mine has the highest gold/silver ratio in the area (8.3) and is closest to the intersection of the two regional trends mentioned earlier.

Unlike the Bralorne-type deposits of population B on the probability plot, which are called 'Congress-type' deposits, are not characterized by high gold/silver ratios and are not in close proximity to Bralorne intrusives.

A further examination of gold/silver ratios was undertaken on the Bralorne and Pioneer mines production results. Average annual gold/silver ratios are plotted versus year of production; this assumes that the mines deepened with time at a constant rate and extant records suggest that this assumption is correct. The only other mine that recorded its change in depth with time is the Congress mine (Cairnes, 1937; Stevenson, 1958) where gold and arsenopyrite apparently increase with depth; by contrast stibnite predominates at surface and decreases with depth. Extraction methods can affect the recovery of gold and silver differently causing a bias to gold/silver ratios. The recovery methods at Bralorne changed as follows:

1898 — two arrastras
1900 — 5-ton stamp mill
1932 — jig and blanket with amalgamation
1960 — cyanidation plant

From 1933 to the close of the Bralorne-Pioneer mine in 1971 a steady increase in the gold/silver ratio (Fig. 46-3) occurred which is not due to changes in the extraction process.

At Pioneer mine (Fig. 46-3) there is an overall decrease in the gold/silver ratio corresponding to the following recovery history:

1900 — hand-operated stamp mill
1905 — arrastra
1916 — Bryan (Chilean) type mill
1924 — Bryan mill and cyanidation
1928 — all cyanidation
1932 — new cyanidation plant

It is noteworthy that these two connected mineralized systems have dramatic differences in their gold/silver ratio distributions. The Pioneer system is generally considered to be worked out, whereas the Bralorne system apparently contains substantial reserves. While gold/silver ratios show district-scale use in predicting ore-bearing gold occurrences, they can also be used in a single mine to reveal zonal patterns.

Several other graphs dealing with the 11 production figures were studied. In Figure 46-4 a strong linear relationship between log gold production (grams) and log silver production (grams) is demonstrated. Figure 46-5 is a plot of log (grams metal) versus log (tonnes mined) showing that gold is slightly in excess of silver in this camp. Figure 46-6 demonstrates that grade is not a function of tonnage. Figure 46-7 shows a log-probability plot of the deposit size; this shows the deposits form two populations with the two largest mines, Bralorne and Pioneer, being the upper population.

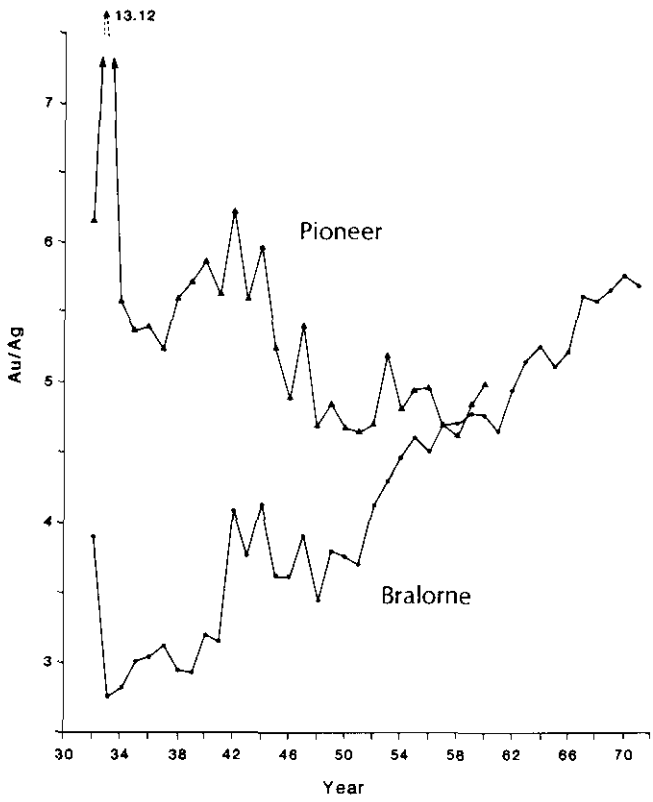

Figure 46-3. Plots of average annual Au/Ag ratios for Bralorne and Pioneer production, 1930 to 1971 inclusive.

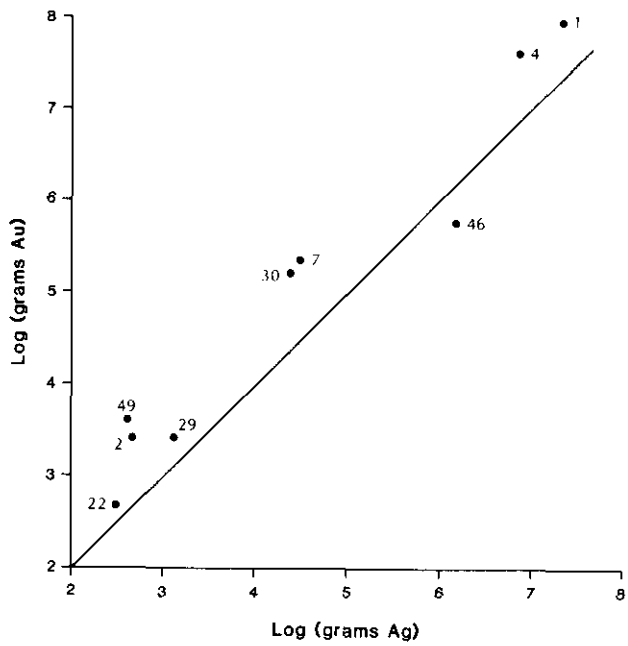

Figure 46-4. Log — log plot of total Au production versus total Ag production for Bralorne Camp. Numbers correspond to deposit numbers in Table 46-1.

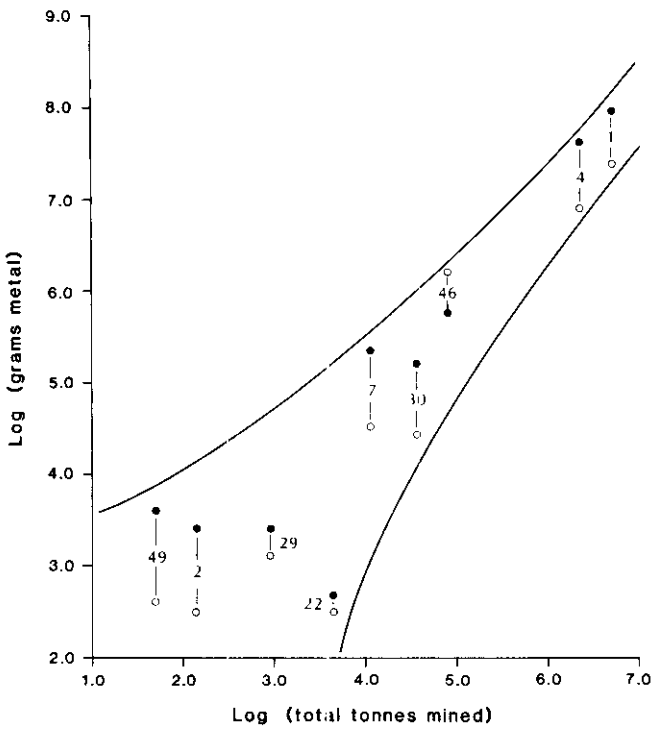

Figure 46-5. Log (grams combined metal) versus log (production tonnes) for Bralorne Camp. Solid circles are deposit numbers in Table 46-1.

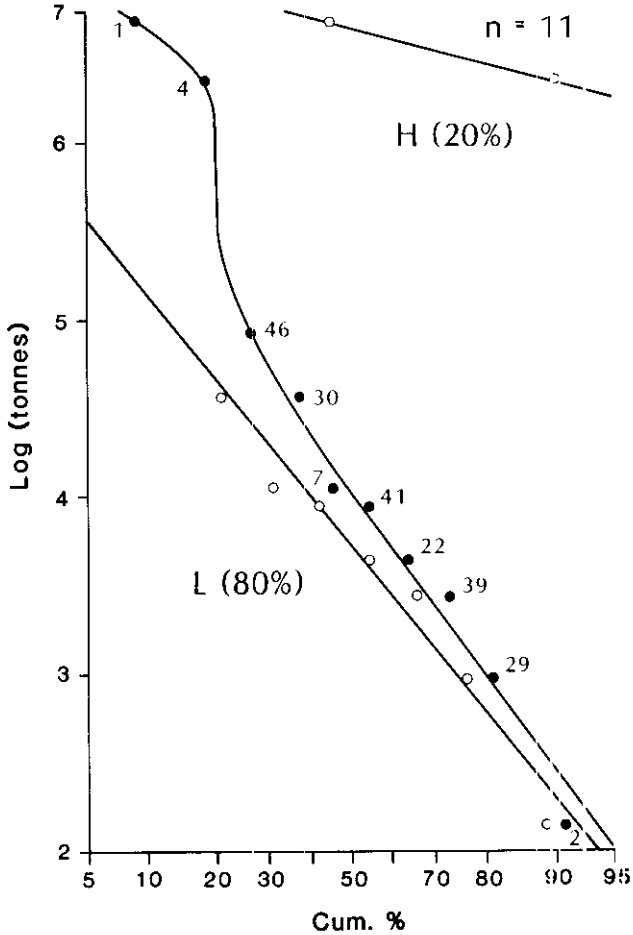

Figure 46-7. Probability plot of production tonnages, Bralorne Camp, cumulated from high tonnages to low. Symbols as on Figure 46-1.

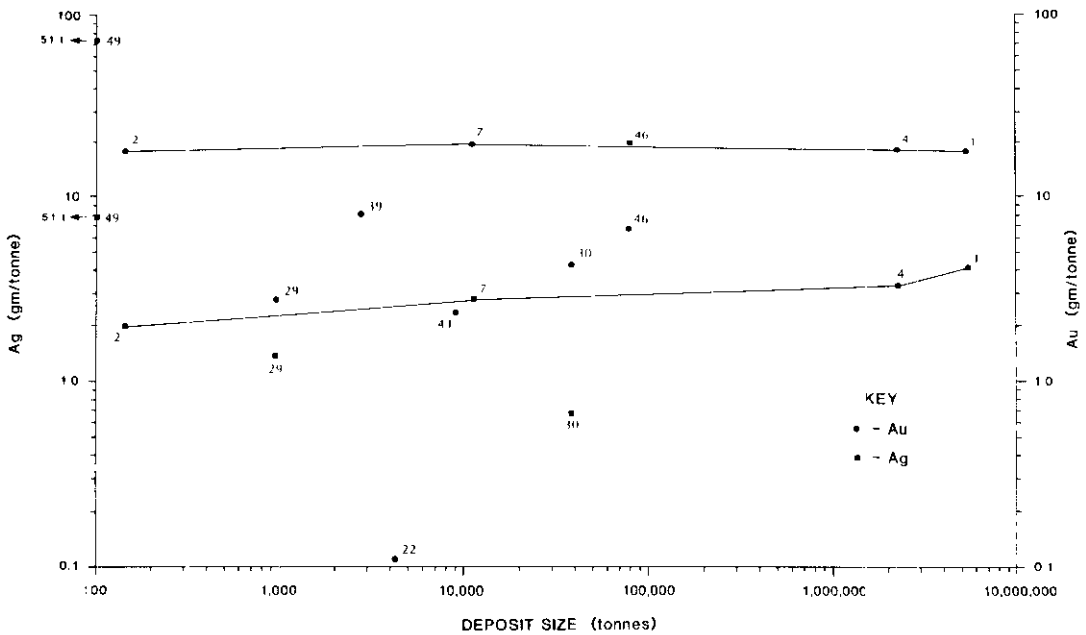

Figure 46-6. Plot of metal content versus production tonnages for past producers, Bralorne Camp. Numbers correspond to deposit numbers in Table 46-1.

CONCLUSIONS

This study outlines two types of precious-metal-bearing mineralization in the district, namely the Bralorne and Congress types; several guidelines for selecting Bralorne-type exploration targets are recognized; the most productive location for these deposits is at the intersection of two regional structural trends in the vicinity of the Bralorne and Pioneer deposits. Other comparable intersections make interesting targets for further detailed examination. Investigations of the Bralorne intrusives, especially near their contact with serpentinite bodies, could be useful in locating either deposits or structural intersections. Gold/silver ratios can also be used to recognize occurrences with economic potential and in individual deposits the gold/silver ratios have systematic (zonal) distribution patterns.

The Congress-type occurrences differ from Bralorne type in having less obvious geologic controls related to lithological variations in the Bridge River Group and associated crosscutting dykes.

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