

1978

An Analysis of Distribution of Mineral Occurrences in British Columbia

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Bulletin 68



**Province of
British Columbia**
Ministry of
Mines and
Petroleum Resources

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British Columbia Cataloguing in Publication Data

Sinclair, A. J.

An analysis of distribution of mineral occurrences in British Columbia.

(British Columbia. Ministry of Mines and Petroleum Resources. Bulletin ; 68)

Cover title.

This bulletin represents one product resulting from the joint government-university MINDEP project.

Bibliography: p.

ISBN 0-7718-8025-1

1. Mines and mineral resources - British Columbia. 2. Mines and mineral resources - British Columbia - Maps. I. Wynne-Edwards, H.R., 1934- , joint author. II. Sutherland-Brown, Atholl, 1923- , joint author. III. MINDEP Project. IV. Title. V. Series.

TN27.B7S5 553.09711

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INTRODUCTION

Bulletin 68 deals with distribution of mineral occurrences in British Columbia recorded in an extensive computerized file. The data are displayed graphically and treated statistically and analytically. The authors then discuss, in a tentative way, the meaning of the data to them. The Bulletin includes in its appendices a series of computer-generated maps and an output of all occurrences used as a basis for the maps by commodities and National Topographic System sheet number.

Procedures outlined here deal with locations of mineral occurrences and represent a simple quantitative approach to ranking large areas (for example, tectonic belts) as to general potential for resources of certain metal commodities. Maps showing locations of mineral occurrences represent a basic form of information for developing a practical philosophy relating to exploration and prospecting, for regional resource evaluation, and for land use planning. The British Columbia Ministry of Mines and Petroleum Resources' *Mineral Inventory maps were produced partially to fulfill this need. The collection of such data seems routine but normally is complicated by the fact that they must be gathered from a wide variety of sources.*

*A new dimension is attained when such data are available in computer-processable form, as is now the case for more than 8 000 British Columbia mineral occurrences in a computer-based file, known as MINDEP ABC FILE. This file was developed by the MINDEP research group of the department of Geological Sciences, University of British Columbia. The acronym MINDEP, derived from Mineral Deposits, includes a variety of computer-related mineral deposit studies under the direction of H. R. Wynne-Edwards and A. J. Sinclair. Since the initiation of the MINDEP project in September 1973, its principal direction has been toward design, construction, and utilization of a general and flexible, computer-based filing system that could be applied to all types of mineral occurrences. In addition, the design was to incorporate data for such diverse purposes as metallogenic studies of the Canadian Cordillera, evaluation of resource potential, and as a routine source of information for those involved in mineral exploration. Details of the system are not provided here. The interested reader is referred to articles by Wynne-Edwards and Sinclair (1976), Sinclair *et al.* (1976), and Montgomery *et al.* (1975).*

Throughout its existence MINDEP project has been supported and promoted by the British Columbia Ministry of Mines and Petroleum Resources, both in terms of personnel participation and through substantial funding. This Bulletin represents one product resulting from this joint government-university research project. A modified ABC file is now in operational use at the Ministry and is updated yearly.

ACKNOWLEDGMENTS

MINDEP project was initiated with financial support from the Federal Department of Energy, Mines and Resources through two Research Agreements with H. R. Wynne-Edwards and A. J. Sinclair respectively. Additional funding was provided later from several divisions within Energy, Mines and Resources, specifically the Canadian Centre for Geoscience Data and the Geological Survey of Canada. Individuals within these organizations who have contributed to the success of the MINDEP project include: J. O. Wheeler, W. W. Hutchison, and D. F. Burk, Jr.

Funding in the early stages of MINDEP was also obtained from Industry, principally through a group concerned with the now defunct British Columbia Mineral Inventory card index file (popularly known as the Macdonald File) for mineral occurrences in British Columbia. A committee from this group was formed to serve as a liaison with MINDEP project and included: A. J. MacDonald, A. D. Drummond, P. A. Christopher, J. E. Rotherham, P. Midgley, J. M. Newell, R. Hewton, J. M. Carr, E. S. Rugg, R. D. Westervelt, and B. Mioduzewska.

The British Columbia Ministry of Mines and Petroleum Resources, an original participant in the Macdonald File, has been involved actively in MINDEP almost since inception of the project. The writers wish particularly to acknowledge the contributions of E. V. Jackson, G. L. James, J. A. Garnett, and J. T. Fyles.

Members of the original MINDEP team contributed substantially to the early success of the project and included J. H. Montgomery, G. H. Giroux, D. F. Symonds, A.C.L. Fox, J. Mullen, and J. Stark. L. Heuftlein has more recently been responsible for all aspects of computer work that bear directly on data contained in this report.

C. I. Godwin offered constructive comments that have improved the manuscript.

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MINERAL COMMODITY OCCURRENCE MAPS

GENERAL STATEMENT

Mineral commodity occurrence maps show geographic positions of known and recorded occurrences of particular types of mineral concentrations. We confine our attention principally to mineral occurrences important for specific contained metals, although some *mineral commodities are important for the minerals per se rather than the contained metals* – chrysotile asbestos is an example. These maps are hereinafter referred to as commodity maps.

Commodity maps are not normally used by geologists. Each deposit or occurrence on commodity occurrence maps is shown with equal hierarchy regardless of the relative economic importance of the deposit. In this respect mineral commodity maps differ from most published metallogenic maps which are based principally on ores or near-ores.

Limited information on the distribution of mineral occurrences in the Canadian Cordillera has been presented in metallogenic studies such as those reported in CIM Special Volume No. 8 and by Sutherland Brown *et al.* (1971). In keeping with metallogenic studies in general, these works are restricted to deposits with known production, and to a much lesser extent to deposits that were uneconomic at the time the papers were written but were large enough and with sufficient grade that they seemed likely to have some economic potential for the near future. As Pelissonnier (1974) has pointed out there is a strong 'economic' input to virtually all metallogenic studies; Noble's (1976) discussion of metallogeny in the western cordillera of North and South America is an example. All these studies have two important features in common:

- (1) They considered only the relative giants of the mineral deposits in the areas considered (that is, a highly biased sample), and
- (2) the choice of what was to be omitted from consideration was a subjective decision.

Hand-plotted commodity maps have been published by the British Columbia Ministry of Mines and Petroleum Resources, but these show all commodities together on individual maps and do not have the advantage of selective retrieval illustrated by the MINDEP commodity maps in this bulletin. The great potential for the latter maps lies in the fact that they point to areas in which geological processes of concentration have been operative for specific commodities and, hence, where actual ore deposits may also have developed. Furthermore, because small mineral occurrences are important identifiable geological 'oddities,' a map showing all known occurrences of a particular commodity should give us some insight into regions with ore-forming potential. Viewed in this way it is apparent that commodity occurrence maps have something to tell us regarding resource potential and mineral exploration. Furthermore, experience in the past has shown that many large deposits were first known as small showings for a lengthy period before their true potential was recognized. The Sullivan lead-zinc deposit and the Endako molybdenum deposit are well-known examples. For this reason alone small showings and the distribution patterns they exhibit are of paramount importance in thorough studies of resource potential, mineral exploration modelling, and metallogenic studies on various scales.

A considerable strength of commodity occurrence maps is that they are not restricted by prevailing hypotheses that emphasize presumed origins of mineral deposits, or origins in vogue at a particular time. The maps, therefore, are not biased as far as choice of data is concerned.

Mineral commodity maps have limitations, the principal one being that all deposits have the same rank regardless of size, grade, or geological character. However, the commodities themselves have **different ranks** within a single deposit. This ranking is relative and is based on subjective interpretations by the innumerable geologists who have contributed commodity and/or mineralogical information to the various manual files used as sources of information in the construction of MINDEP ABC FILE. Such ranking has a general economic overtone which obviously presents ambiguities over long periods of time, quite apart from sampling problems.

Our maps have had to rely on the subjective decisions of geologists recording information for a deposit. If chalcopyrite was the dominant mineral with minor amounts of molybdenum, the deposit is recorded as a copper occurrence with molybdenum as the second-rank commodity. In general, such decisions are straightforward and are based on reports of mineralogical examination which commonly are accompanied by supplementary assay information. In some cases, however, assay information is essential for a realistic decision as to principal commodities — gold and silver deposits are particularly good examples of this problem. The principal concern then becomes one of commodities that have been omitted from property descriptions. With minor exception these are probably not the principal commodities. Consequently, their absence will not particularly affect patterns obtained from high-rank commodities.

Another problem is the ingrained tendency of geologists to speak (and write) of deposits in a particular way despite the mineralogy. For example, in a given area deposits with galena and sphalerite might be spoken of traditionally as lead-zinc deposits regardless of whether galena or sphalerite was dominant. If recognized, this difficulty can be offset to some extent by considering dual commodity maps, for example, all occurrences in which lead and zinc are important regardless of which might be the higher apparent rank of the two metals.

A fundamentally sounder approach for appropriate metals would be to divide average grades by corresponding clarkes, and then rank commodities relative to their concentration ratios. Unfortunately, appropriate information is available for only a small number of deposits, so this procedure fails in practice. In addition, published grades generally are not representative until extensive exploration work has been done.

In spite of these limitations, mineral commodity occurrence maps provide a useful means of examining geographic distribution patterns of mineral occurrences. Our procedure is to present the raw data as maps and in tabulated form, to provide a regional quantitative analysis of the density of occurrence, and, finally, to consider some of the geological and other implications of various recognizable patterns.

COMPUTER—GENERATED COMMODITY MAPS

Commodity occurrence maps reproduced here in Appendix I are direct copies of Calcomp plotter output based on selective retrievals from the MINDEP ABC FILE which contains information for more than 8 000 mineral occurrences in British Columbia. Base map chosen was the Lambert conic conformable projection to permit easy comparison with a variety of geological maps published by the Geological Survey of Canada (for example, GSC Map 1250A). Original output was at a scale of 1:5 000 000 so that maps could be overlaid on a published geological map to aid interpretation of patterns on the commodity occurrence maps; however, output is possible at a wide range of scales.

The commodity maps are preceded by two maps (Maps 1 and 2) that provide respectively specific geographic reference points and the grid used in contouring. Only major geographic features are included on commodity maps in order that the maps not be cluttered and patterns of occurrence distribution not be obscured. Geographic references common to all maps include:

- (a) boundary and coastline of the province of British Columbia,
- (b) the corners of NTS sheets,
- (c) Fraser, Stikine, Skeena, and Liard Rivers,
- (d) boundaries of the five principal tectonic belts of the Cordillera of British Columbia.

After considerable experimentation involving scale, symbols, combinations of selection criteria, and various choices of geographic reference points, we produced the selection of commodity maps that is reproduced here.

The maps include single and multiple commodity maps that can be further subdivided on the basis of ranking of commodities within individual deposits. A list of all commodity maps included in this report is presented in Table 1 along with a brief outline of the criteria used to extract the subset of data on which each map is based.

TABLE 1
LIST OF COMPUTER PRODUCED MAPS IN APPENDIX I

Map No.	Selection Criteria (based on commodity and rank)
3	Cu as first commodity
4	Cu and Mo as the first two commodities in either order
5	Cu-Zn and Zn-Cu deposits are indicated by different symbols*
6	Cu as first commodity with Mo present as any other rank
7	Mo as first commodity
8	Mo as first and second commodity are indicated separately
9	Mo as first commodity with Cu present as any other rank
10	Pb as first commodity
11	Pb as first commodity distinguished from Pb as second commodity
12	Zn as first commodity
13	Zn as first commodity distinguished from Zn as second commodity
14	Pb-Zn or Zn-Pb deposits distinguished with respect to presence or absence of Ag*
15	Ag as first commodity
16	Au as first commodity in lode deposits
17	Au as first, second, or lower rank (distinguished) in lode deposits
18	Au first rank deposits separated into those containing Ag and those in which Ag is not recorded
19	Hg distinguished as to first, second, or lower rank
20	AB (asbestos) as first, second, or lower rank
21	Ni distinguished as to first or second rank
22	Co all occurrences regardless of rank
23	Sb distinguished as to first or second rank
24	As distinguished as to first, second, or lower rank
25	Sn distinguished as to first, second, or lower rank
26	W distinguished as to first, second, or lower rank
27	U distinguished as to first, second, or lower rank
28	Cu as first commodity contoured at 1, 5, and 20 occurrences per NTS 1:50 000 map area
29	Pb as first commodity contoured at 1, 5, 10, and 15 occurrences per NTS 1:50 000 map area
30	Mo as first commodity contoured at 1, 5, and 20 occurrences per NTS 1:50 000 map area

*Cu-Zn: this hyphenated form as used in this report implies Cu first rank and Zn second rank.

In addition to dot density maps we have experimented briefly with contour maps for some of the commodities with a large number of occurrences. The geographic centre of each NTS 1:50 000 map area was used as a contouring grid (Fig. 2) and the number of

occurrences of a particular commodity in corresponding 1:50 000 NTS map areas was assigned to these points. The grid of data thus obtained was contoured using software available from the University of British Columbia Computing Centre. An advantage of these contour maps is that they provide a simplified outline of trends and allow one to emphasize visually and in a quantitative way, areas with high densities of occurrences. Contour maps appear to provide no useful advantage for commodities with less than several hundred occurrences.

We have adopted a simple and approximate contouring procedure in which the 'window' or area over which commodities are summed to produce a data grid for contouring (NTS 1:50 000 map sheets), varies in size from north to south in the Province. This arises from the fact that the map sheets are bounded by longitudes and latitudes. Nevertheless, the total range in area is only about 12 per cent on either side of an average 'window' area of about 175 square miles. Such maps, particularly if contoured in a more rigorous manner provide a general framework for considering resource potential and land use studies.

Appendix II, a direct copy of computer output, lists all properties used as a base for each of the accompanying commodity maps. The Mineral Inventory map series available from the British Columbia Ministry of Mines and Petroleum Resources shows many commodities on a single map and serves as a useful cross-index for locating particular mineral occurrences listed in Appendix II.

SOME OBSERVATIONS

Study of the mineral commodity occurrence maps quickly reveals several important features of mineral deposit distribution in the Province. Many of these have been commented on by previous authors; some have not. The qualitative analysis that follows will look at some of them in detail.

- (1) Mineral occurrences are not spread evenly throughout the Province nor throughout any of the principal tectonic belts.
- (2) Local concentrations or clusters of known mineral occurrences are common. Many individual mining camps stand out as high concentrations of occurrences surrounded by lower concentrations.
- (3) There are variable patterns of clustering for different commodities throughout the Province, from one tectonic belt to another, and within a single tectonic belt.
- (4) Large areas exist with no occurrences of any of the commodities considered here, for example, Bowser Basin, large areas of Tertiary volcanic cover in the central part of the Province, and the axial zone of the Coast Plutonic Complex.

The Bowser Basin is essentially devoid of mineral deposits except around its margin. This is probably because the basin developed prior to periods of extensive mineralization, and formed too thick a barrier to be penetrated by intrusions associated with later important stages of plutonism and mineralization.

The northwesterly trending central core of the Coast Crystalline Belt is essentially devoid of metallic commodity occurrences. Within the Coast Crystalline Belt metallic occurrences are localized along the eastern and western margins especially in the northern and southern parts of the Province, but there is an obvious gap in an intermediate zone north of latitude 52 degrees north, centred roughly on Bella Coola, where even the margins of the Coast Plutonic Complex have few associated metallic occurrences (for example, copper, molybdenum, gold, and silver commodity maps). The absence of mineralization must be related to large expanses of deep-seated intrusive masses from which the metals considered here have been extracted preferentially, probably by partitioning into mobile fluid phases during emplacement and consolidation of the plutonic masses. This interpretation is consistent with the suggestion by Hutchison (1970) that the intermediate zone has been more uplifted and eroded than have the northern and southern zones, and thus represents a deeper seated level of plutonism.

- (5) Pronounced regional patterns exist on a scale larger than individual mining camps, that is, a scale of 1000's of km² and commonly related to known geological features. Examples are:
- (a) concentrations of deposits along the marginal zones of the Coast Plutonic Complex;
 - (b) the abundant deposits of the Stikine and Skeena arches;
 - (c) the north-south linear trend of lead and zinc occurrences in northern part of the Eastern Marginal Belt generated by the interplay of stratigraphic sequences, tectonics, and facies changes related to the paleocontinental shelf edge;
 - (d) the concentration of mercury occurrences along the Pinchi fault; and
 - (e) nickel along the Insular-Coast, Coast-Intermontane, and Intermontane-Omineca 'fault' boundaries between major tectonic zones.

The location of the Stikine and Skeena arches are particularly well shown on several commodity maps by clusters of deposits of copper and molybdenum. Curiously, however, only the Skeena arch shows clear concentration of lead, zinc, gold, and silver, these being sparsely represented in the Stikine arch to the north. To a large extent these arches are emphasized by the blank areas of the Bowser Basin and plateau basalts that frame them.

- (6) Certain metals have distributions particularly worthy of comment:

Copper occurrences are very numerous and widespread. They are more than twice as abundant per unit area in the exposed parts of the Insular Belt than in any other tectonic belt. This may reflect the large number of different types of copper deposits represented in the Insular Belt, compared with the bias toward porphyry-type deposits in the Intermontane Belt which has the second-highest density of copper occurrences. The very high number of copper occurrences in these two tectonic belts compared with the remainder of the Province is in line with a close genetic association between many classes of these deposits and volcanic and plutonic rocks of the calc-alkaline variety – in both cases the dominant lithologies of these two regions.

Molybdenum occurrences are most abundant within the Intermontane Belt and the eastern margin of the Coast Crystalline Belt.

A general regional association of tin with tungsten is apparent and is centred in the Omineca Belt.

Arsenic as a principal commodity is particularly characteristic of the Insular Belt.

3

QUANTITATIVE APPROACH TO REGIONAL ANALYSIS OF MINERAL COMMODITY OCCURRENCE DATA

One of the main advantages of the maps included here is to show relatively the extent to which concentration processes of economic potential have been operative from one tectonic belt to another. On a broad regional scale the maps can be examined visually and interpreted subjectively in light of geological information. Such an approach is natural to geologists and is attempted elsewhere in this report. Here we consider some quantitative aspects of the information illustrated in Maps 3 to 30 inclusive.

It should be noted that occurrences range in size over several orders of magnitude whether the standard of measurement be tons of mineralized rock, total contained metal, dollar value, or other. Hence, an occurrence indicates little regarding the extent or scale of operation of the concentration processes but does indicate that concentration processes have been operative on a scale that can be recognized visually. Mineral occurrence data itself is a variable that warrants thorough evaluation. The amount and completeness of information on locations of mines and mineral occurrences of a wide range of sizes, readily accessible in the MINDEP ABC FILE for the British Columbia Cordillera, make this possible for the first time.

Occurrence data illustrated on commodity distribution maps can be summarized in contingency tables such as that of Table 2 which contains a very large subset, about 80 per cent, of the total records contained in MINDEP ABC FILE. The 20 per cent of the data not considered here includes non-metallic commodities such as coal, asbestos, gemstones, etc., and properties for which no commodity information was available. The only metal of noteworthy economic significance not included in the table is iron. Table 2 is based only on most important commodity. Thus, a copper-molybdenum-gold deposit is considered only as a copper deposit.

TABLE 2
CONTINGENCY TABLE SHOWING NUMBERS OF LODGE METAL OCCURRENCES
IN BRITISH COLUMBIA AS A FUNCTION OF PRINCIPAL TECTONIC BELT*

	Insular	Coast	Intermontane	Omineca	Eastern	Total
Molybdenum	14	72	233	65	0	384
Copper	475	305	1 657	313	120	2 870
Silver	39	76	352	570	16	1 053
Lead	4	29	160	326	35	554
Zinc	25	23	52	78	20	198
Nickel	2	15	15	10	0	42
Cobalt	7	4	8	4	2	25
Uranium	0	2	8	11	1	22
Tungsten	1	9	26	27	1	64
Tin	0	0	2	2	0	4
Antimony	4	14	7	2	0	27
Gold (Lode)	189	284	461	406	11	1 351
Mercury	1	15	55	1	0	72
Arsenic	4	1	1	0	0	6
TOTALS	765	849	3 037	1 815	206	6 672

*Selective retrieval from Mindep ABC File, August 1976.

Real differences exist in average areal densities of known commodity occurrences from one tectonic belt to another. This generalization, long recognized in a qualitative way, has now some numerical basis of support. We can test this with the unlikely hypothesis that all tectonic belts are characterized by an equal density of certain precious and non-ferrous metal occurrences, or, in other words, that deposits are randomly distributed throughout the Cordillera. To do this, data in Table 2 can be analysed by a simple chi square (χ^2) test in which a comparison is made between observed values of occurrences in each tectonic belt and corresponding expected values that are proportional to areas of land surfaces of each belt.* Necessary information is summarized in Table 3, where it can be seen that the calculated χ^2 value of 340.3 greatly exceeds the critical value of 5.0 at the 99.5 per cent level. Calculated chi square values greater than the critical value are highly unlikely and indicate significant departures of real data from the model with which the data are compared. Hence, there is virtually no possibility that the known mineral occurrences in British Columbia represent a random sample from tectonic belts with the same areal density of deposits. Comparable tests done on individual commodities of Table 2 for which data fulfill requirements of the chi square test (molybdenum, copper, silver, lead, zinc, and gold) show equally convincing disparities from one tectonic belt to another. Formal results are not presented for individual metals.

*The chi square value is a general measure of the extent to which observed values depart from values expected according to some chosen model (equal density of mineral occurrences in all tectonic belts in this case). A critical chi square value is based on the sampling distribution of χ^2 values, and the chosen level of the statistical test (that is, the probability of a Type I error).

TABLE 3
 SUMMARY OF CHI SQUARE (χ^2) TEST OF THE HYPOTHESIS
 THAT KNOWN MINERAL OCCURRENCES REPRESENT RANDOM SAMPLES OF
 EQUIVALENT OCCURRENCE DENSITIES IN MAJOR TECTONIC BELTS

Tectonic Belt	Insular	Coast	Intermontane	Omineca	Eastern	Cordilleran British Columbia
Porportion of area of Cordilleran British Columbia . . .	0.059	0.164	0.431	0.187	0.159	1.0
Total recorded occurrences	765	849	3037	1815	206	6672
Expected occurrences	393.7	1094.2	2875.6	1247.7	1060.8	6672
χ^2	350.2	55.0	9.1	257.9	688.9	1361.0

d.f. = 4; $\chi^2/d.f.$ = 340.3

An important question to be considered is the cause of disparity of occurrence-densities from one belt to another. There are, of course, a great many reasons for such differences and we generalize them as follows:

- (1) real geological variations from one tectonic belt to another;
- (2) biased sampling resulting from variations in proportion of outcrop and volcanic cover among tectonic belts;
- (3) variable intensity of exploration (including variable methodology in reporting occurrences).

From a geological point of view we are interested in possible real variations that exist in the distribution of mineral occurrences. The existence of real variations can be obscured by other effects that must somehow be taken into consideration for best use of occurrence-density data. In a general way we can assume that intensity of exploration has been relatively uniform across the southern part of the Province. Similarly, we might argue that exploration although much less thorough in the north than in the south, has also been of more-or-less uniform intensity across the northern part of the Province. Thus, it would seem that the variable 'intensity of exploration' should not introduce a serious bias to commodity occurrence-densities if comparisons are to be made across the northwesterly tectonic trend of the Cordillera as we are doing in comparing data for various tectonic belts.

The problem of variations in amount of rock exposure, or, conversely, the amount of 'cover,' from one tectonic belt to another is more difficult to deal with. There are two distinct aspects to the problem: the first concerns the amount of unconsolidated overburden of whatever origin (glacial, alluvial, etc.); the second is large areas covered by apparently unmineralized rock sequences. This latter point relates particularly to the

Intermontane Belt where two large areas are essentially devoid of known mineral occurrences. One is centred on the Bowser Basin and the other is in the central portion of the belt which is largely covered by a thin sequence of young volcanic rocks. We have assumed that this problem of variable amounts of such cover will not obscure large real variations in the regional distribution of commodity occurrences due solely to variable amounts of cover.

We have calculated densities per unit area for each tectonic belt (Table 4) using as a standard the number of occurrences per 1000 km². British Columbia is 948 597 km² including part of the Interior platform in the Peace River area. The area of Cordilleran British Columbia is estimated to be 844 000 km² and relative proportions of each tectonic belt (Table 2) form the basis of the density calculations summarized in Table 4. These average occurrence-densities demonstrate in a realistic and quantitative manner the general high level of metal occurrences in the Insular and Omineca tectonic belts relative to the remainder of the Province, although, as implied previously, the value for the Intermontane Belt may be somewhat underestimated.

TABLE 4
DENSITY PER UNIT AREA FOR EACH TECTONIC BELT

Tectonic Belt	Insular	Coast	Intermontane	Omineca	Eastern	Cordilleran British Columbia
Proportion of area of Cordilleran British Columbia	0.059	0.164	0.431	0.187	0.159	1.0
Area (km ² /1000)	49.8	138.4	363.8	157.8	134.2	844.0
Average density* of mineral occurrences	15.4	6.1	8.4	11.5	1.5	7.9

*Based only on totals of Table 2.
Units are number of occurrence per 1000 km².

Data of Table 4 permit Table 2 to be reconstituted into individual commodity occurrence-densities (Table 5). Each numerical entry in Table 5 has been calculated in the same manner as average occurrence densities of Table 4. These commodity occurrence-densities are useful for comparing occurrences of a single commodity from one tectonic belt to another because they have been corrected for size disparity of tectonic belts. Each column also indicates (as in Table 2) the absolute and relative abundances of various commodities within a single tectonic belt that can be expected through chance (assuming that the sample is representative). The data of Table 5 are useful in other ways. Column 3 of Table 5, for example, shows that copper and gold represent the most numerous commodity occurrences as lode deposits in the Coast Crystalline Belt. However, the figures mask the relative 'goodness' of the Coast Crystalline Belt for nickel, molybdenum, mercury, and arsenic as compared with the other tectonic zones and overemphasize copper relative to other metals. Table 6 corrects this problem: data from Table 5 are

recalculated as 'relative' commodity densities by dividing individual commodity densities by the relevant average commodity density for the whole of British Columbia (column 7, Table 4). Column 3 of Table 6 now reveals that the Coast Crystalline Belt is characterized by higher than average occurrence-densities for nickel, molybdenum, gold, mercury, and arsenic (that is, their relative occurrence-densities are greater than 1.0). Of equal significance is the fact that the relative occurrence-density for copper is very low (that is, ignoring the possibility of extreme clustering of copper occurrences there are better places in the Province to find copper occurrences and hence major copper deposits).

TABLE 5
COMMODITY OCCURRENCE-DENSITIES FOR TECTONIC BELTS IN
BRITISH COLUMBIA (NUMBER OF OCCURRENCES/1000 km²)

Commodity	Insular	Coast	Intermontane	Omineca	Eastern	Cordilleran British Columbia
Molybdenum	.281	.520	.641	.412	----	.455
Copper	9.538	2.204	4.555	1.984	.894	3.401
Silver	.783	.549	.968	3.612	.119	1.248
Lead	.080	.210	.440	2.066	.261	.656
Zinc	.502	.166	.143	.494	.149	.235
Nickel	.040	.108	.041	.063	----	.050
Cobalt	.141	.029	.022	.025	.015	.030
Uranium	----	.015	.022	.070	.008	.026
Tungsten	.020	.065	.072	.171	.008	.076
Tin	----	----	.006	.013	----	.005
Antimony	.080	.101	.019	.013	----	.032
Gold (Lode)	3.795	2.052	1.267	2.573	.082	1.601
Mercury	.020	.108	.151	.006	----	.085
Arsenic	.080	.007	.003	----	----	.007
TOTALS	15.4	6.13	8.35	11.50	1.54	7.91

TABLE 6
RELATIVE COMMODITY OCCURRENCE-DENSITIES FOR
TECTONIC BELTS IN BRITISH COLUMBIA

Commodity	Insular	Coast	Intermontane	Omineca	Eastern	Cordilleran British Columbia
Molybdenum	0.62	1.14	1.41	0.91	0	1
Copper	2.80	0.65	1.34	0.58	0.26	1
Silver	0.63	0.44	0.78	2.89	0.10	1
Lead	0.12	0.32	0.67	3.15	0.40	1
Zinc	2.14	0.71	0.61	2.11	0.64	1
Nickel	0.80	2.16	0.82	1.26	----	1
Cobalt	4.70	1.00	0.73	0.83	0.50	1
Uranium	0	0.58	0.85	2.69	0.30	1
Tungsten	0.26	0.86	0.95	2.25	0.11	1
Tin	0	0	1.20	2.60	0	1
Antimony	2.50	3.16	0.59	0.41	0	1
Gold (Lode)	2.37	1.28	0.79	1.61	0.05	1
Mercury	0.24	1.27	1.78	0.07	0	1
Arsenic	11.43	1.00	0.43	0	0	1

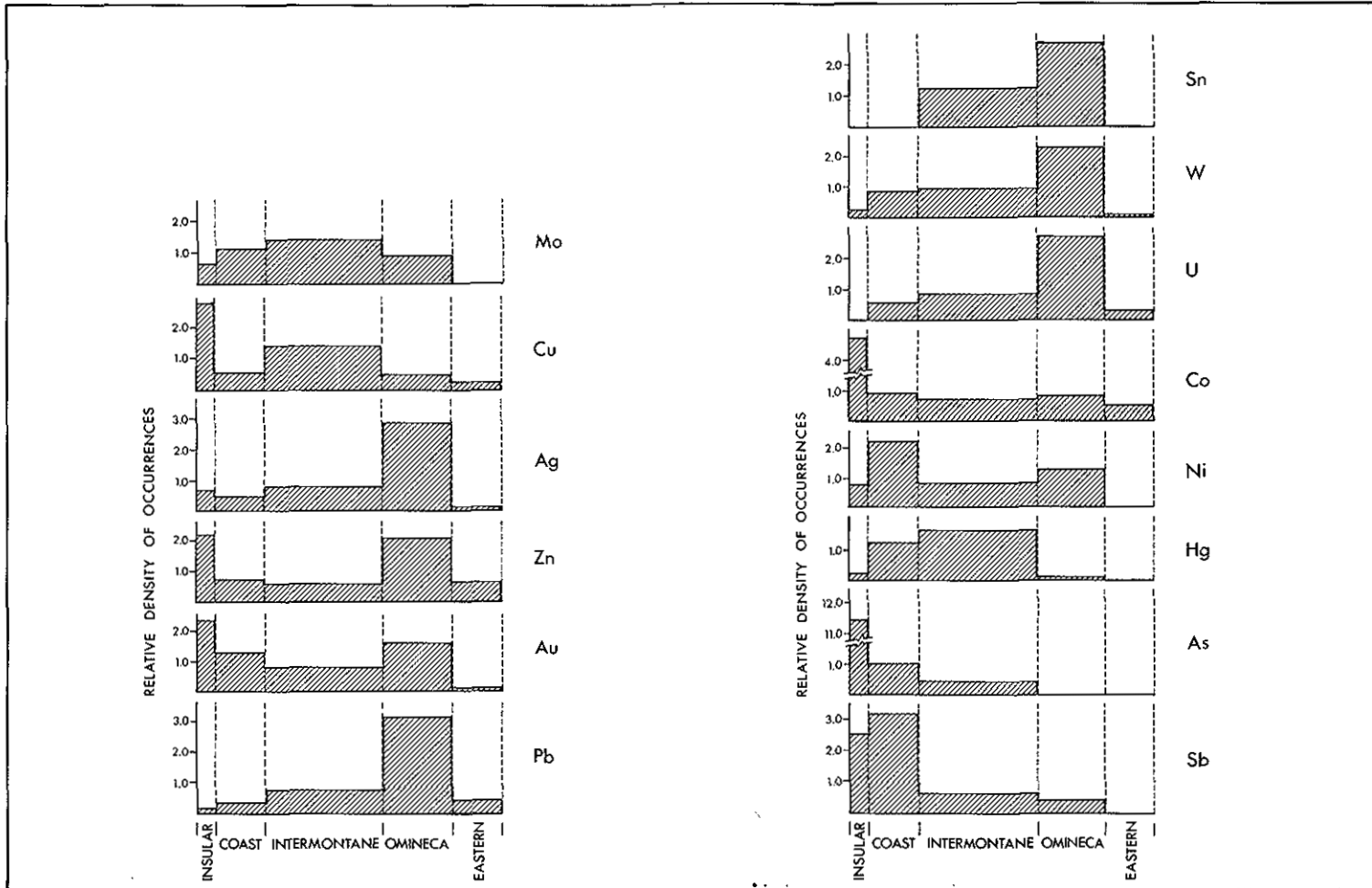


Figure 1. Bar graphs showing relative density of mineral occurrences for the major tectonic belts. (Bar widths are proportional to surface area. In all cases a relative density of 1.0 equals average for Cordilleran British Columbia.)

Relative occurrence-densities are a useful means of examining metal distribution patterns across the Canadian Cordillera. These densities are plotted in bar graph form on Figure 1. Seven distinctive patterns are recognizable which are generalized on Figure 2. Note that the distance coordinates in bar graphs and generalized patterns of Figures 1 and 2 show widths of various tectonic belts proportional to areas of the belts. The resulting patterns are comparable to and consistent with various patterns relating to deposit-type and soil and silt geochemistry described previously by Sutherland Brown (1974; 1976). These general correlations have implications concerning resource potential that are considered in a later section.

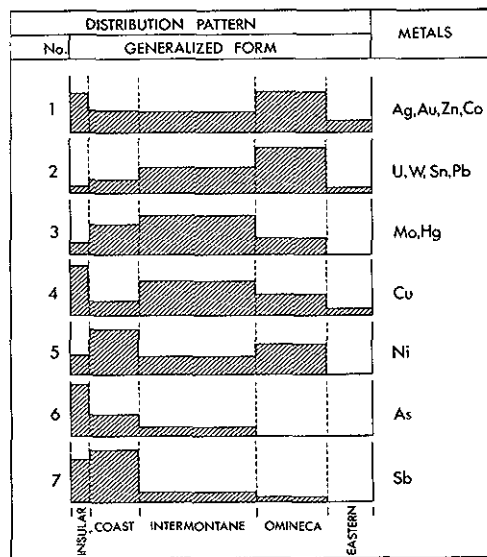


Figure 2. Bar graphs showing the seven distinctive patterns of relative densities and corresponding metals. (Bar heights show relative density of mineral occurrences qualitatively.)

Most commodities in the Intermontane Belt have relative occurrence-densities near 1.0, the average value for Cordilleran British Columbia (zinc and arsenic are the two most notable exceptions). This consistency and the large area of the Intermontane Belt have contributed substantially to the interest the belt has had over the years for explorationists. If two large areas essentially barren of mineral deposits, the Bowser Basin and the central area of young plateau basalts, were removed from the density calculations, relative densities would be less than 10 per cent greater.

Table 6 can be used to characterize tectonic belts by the commodities which have an above average occurrence-density. These commodities, summarized in Table 7, represent one result of a quantitative approach to evaluating regional resource potential of British Columbia. We have been able to rank commodities both within and between major tectonic belts. It is of interest to note that the Omineca Belt appears to have a relatively high resource potential for the greatest number of metals and that the Eastern Marginal Belt has the lowest overall potential. The high level of exploration activity in the Intermontane Belt over the past 15 years is reflected in the high occurrence-densities for copper and molybdenum (principally of the porphyry type). The principal conclusion to

be drawn from this analysis is that concentration processes of the type that form economic mineral deposits are most in evidence in the Insular, Omineca, and Intermontane Belts. Furthermore, the Omineca Belt contains the greatest diversity of characteristic metal occurrences. These conclusions are not different in their generalities from those reached by geologists using more subjective analysis. The principal advantage of the approach taken here is to provide some quantification from a different and more generally available source of data than that used by others.

TABLE 7
MINERAL COMMODITIES CHARACTERISTIC* OF MAJOR TECTONIC BELTS

Tectonic Belt	Characteristic Commodities Based on Total Number		
	< 100	11 – 100	> 10
Insular	Cu, Au	Zn	As, Co
Coast	Au	Ni, Hg, Mo	As
Intermontane	Mo, Cu	Hg	Sn
Omineca	Pb, Ag, Zn, Au	U, W	Sn
Eastern	---	---	---

*A characteristic commodity is taken arbitrarily as one with a relative occurrence-density greater than 1.0, the average for Cordilleran British Columbia.

This regional analysis of commodity occurrence-densities has been done virtually independently of detailed geological parameters. The only important geological input to the approach thus far is the basis for division of Cordilleran British Columbia into tectonic belts (*see* Sutherland Brown *et al.*, 1971) and the basic premise that occurrence-densities for metal commodities have a direct empirical relationship to the relative importance of concentration processes that can lead to the formation of economic mineral deposits. The procedures represent a simple quantitative approach to ranking large areas (tectonic belts) in terms of general potential for the occurrence of certain metal resources. Ranking is on a unit area basis, in this case a unit of 1000 square kilometres. It should be apparent that the figures have only relative value because the number of occurrences at any given time is a function of several variables including exploration intensity and is always less than the total number by an unknown amount. Certain types of deposits are not well represented, or at least, not well recognized among the total occurrences considered. For example, exploration for lead/zinc deposits in carbonates and shales, and volcanogenic sulphide deposits, has not been as thorough as has exploration for molybdenum and/or copper porphyry-type deposits, and this must be recognized in evaluating the data.

SUMMARY

- (1) Densities of metal commodity occurrences per unit area vary from one tectonic belt to another in a statistically significant way.
- (2) Relative occurrence-densities for different metal commodities differ widely within the same tectonic belt.
- (3) Relative occurrence-densities for a given metal vary widely between tectonic belts.
- (4) Each tectonic belt is characterized by commodities whose areal occurrence-densities are greater than the average for the entire cordilleran region of British Columbia (that is, relative occurrence-densities are greater than 1.0).
- (5) These 'characteristic' metal commodities are those that would appear to present greatest resource potential in their respective tectonic belts.
- (6) The greatest **diversity** of high relative occurrence-densities (that is, the greatest number of characteristic metal commodities) is in the Ormineca Belt.
- (7) The conclusions reached here are generalizations only and must not be interpreted too rigorously. For example, the Eastern Marginal Belt which ranks low in all relative occurrence-densities cannot be ignored completely with regard to mineral potential as it has very obvious potential for lead and zinc in shales and carbonates.

4

DISCUSSION

MINERAL RESOURCE POTENTIAL

We envisage that a thorough understanding of mineral commodity maps will provide a useful adjunct to evaluation of mineral resource potential. The maps have the advantage of being easily comprehensible and might well form one basis for educating the public regarding mineral potential in the Province.

Mineral commodity maps provide a clear and simple means of outlining areas that have high densities of known mineral occurrences. In general, these same areas also have relatively high mineral potential compared with areas of no occurrence and a qualitative evaluation of relative potential can be made visually by examining dot density maps. Alternatively, one can simply outline areas of known occurrences subjectively, regardless of variable densities, thus distinguishing areas with occurrences from those without.

A more quantitative approach can be achieved by contouring dot densities averaged over some acceptable unit of area. We have attempted this for several commodities (Maps 28 to 30) principally as a means of simplifying maps with a large number of occurrences. It is apparent though, that such maps also represent one approach to defining areas in which metal concentrating processes have acted with differing intensities; thus, such contours might be used to provide a local crude indication of relative resource potential. Because of the great disparity in intensity of exploration from north to south one cannot make such comparisons over great distances. For example, a specific contour in the north cannot be equated with the numerically equivalent contour in the south.

In a single tectonic belt it seems reasonable to expect that some areas of cover would contribute a comparable density of mineral occurrences beneath the cover as do areas of more exposure. Such might be true for the central part of the Intermontane Belt where it is covered by Tertiary plateau volcanic rocks. A similar type of argument can be applied to expected densities of mineral occurrences in the northern, relatively unexplored part

of the cordillera as compared with the southern, more intensely explored part. Thus, large, relatively well-known areas can be used as models against which to measure mineral occurrence potential of more poorly known areas in a quantitative manner. The procedure is based on all available occurrence data rather than the more extreme type of sample represented by an arbitrary group of 'principal' and/or economic deposits. The correspondence of occurrence-densities and mineral production shown in a later section allows us to extend this conclusion to the effect that expected occurrence-densities in areas of cover or sparse exploration provide a relative indication of resource potential. Such measures can be estimated individually for all appropriate commodities.

The foregoing argument seems to apply reasonably on a regional scale, that is, if very large areas such as major tectonic belts in British Columbia are considered. The approach probably breaks down for small areas where the non-uniformity of deposit distribution becomes extreme. This general approach to resource evaluation has potential in other regions for which adequate mineral occurrence data are available.

TOWARDS A METALLOGENY

In the introduction the evident limitations of mineral commodity maps were outlined. They can be restated as:

- (1) Deposits of one commodity (or a few) of all geological origins are combined on a single map and are not distinguished.
- (2) Deposits of different ages are not distinguished.
- (3) Sizes of deposits are not shown, even qualitatively.

The results of the preceding analysis should be considered relative to detailed geology of deposits, metallogenic history, and regional geochemical studies to evaluate the importance of these limitations.

Several styles of compilations have been published to establish the order of importance by tectonic belt of metals in recognized economic or nearly economic mineral deposits (Sutherland Brown *et al.*, 1971; Sutherland Brown, 1976). These have been compared to the levels of background abundance of metals in the various belts (Sutherland Brown, 1974). Reproduced from these papers are: a list of reserves and production by tectonic belt for the whole of the Canadian Cordillera as of December 1973 (Table 8); a matrix of production, also for the whole Canadian Cordillera, as of 1973 (Table 9); graphs of silt and soil background data (Fig. 3). The original publications outlined the quality and limitations of the data on geochemistry. In addition to the geochemical data for the major base metals that are shown, it can be reasoned that there is a generally eastward decreasing step-like gradient in iron background and early indications from the recently initiated Uranium Reconnaissance Program indicate an eastward increasing gradient in uranium background.

Fig. 3a

BACKGROUND IN SILTS

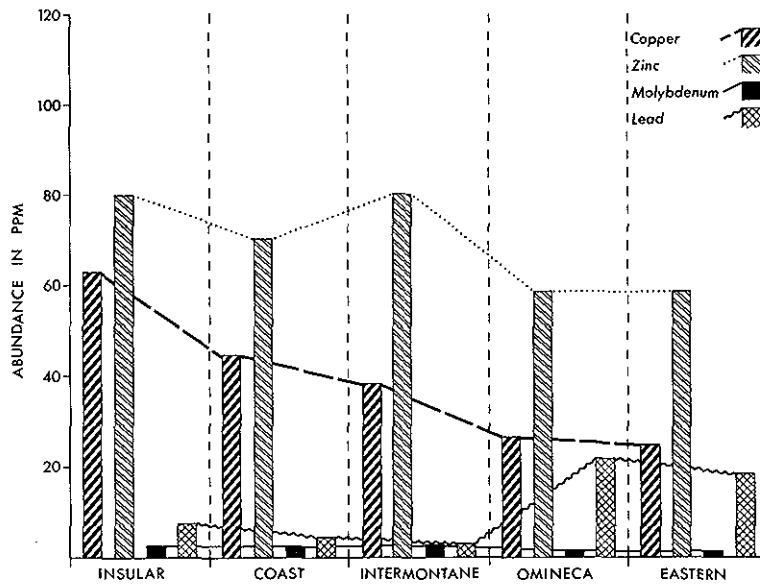


Figure 3a. Bar graph of the average level of metal background in silts by tectonic belt.

Fig. 3b

BACKGROUND IN SOILS

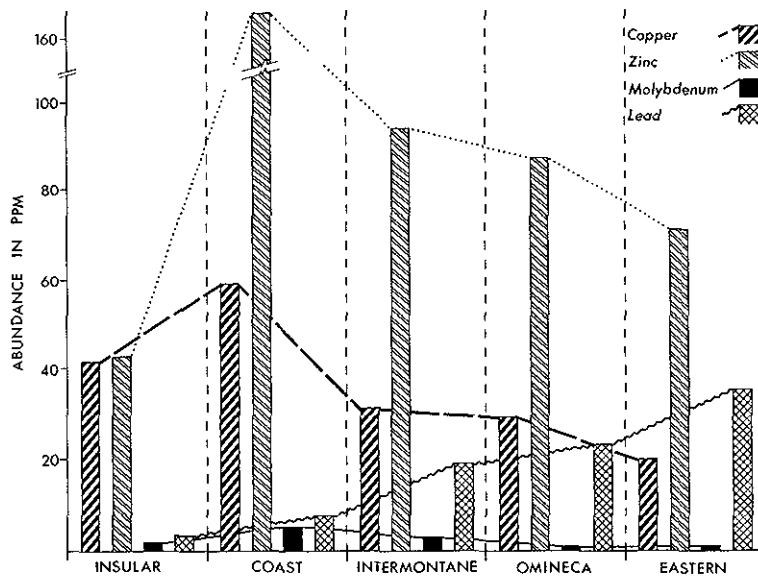


Figure 3b. Bar graph of the average level of metal background in soils by tectonic belt.

TABLE 8
PRODUCTION AND RESERVES OF CANADIAN CORDILLERA
BY TECTONIC BELT, 1973

		Insular	Coast	Intermontane	Omineca	Eastern	Total
Copper	P.	285.5	1 022.5	1 239.0	351.0	16.5	2 914.5
	R.	2 147.5	1 727.0	18 793.5	1 538.5	216.0	24 422.5
	T.	2 433.0	2 749.5	20 032.5	1 889.5	232.5	27 337.0
Molybdenum	P.	0.6	---	98.4	3.1	---	102.1
	R.	48.0	?	1 188.0	18.9	---	1 254.9
	T.	48.6	?	1 286.4	22.0	---	1 357.0
Zinc	P.	166.6	208.9	18.8	10 359.6	89.4	10 843.3
	R.	160.7	53.4	?	5 913.7	107.5	6 235.3
	T.	327.3	262.3	18.8	16 273.3	196.9	17 078.6
Lead	P.	19.5	60.4	15.5	8 878.5	56.7	9 030.6
	R.	24.4	23.5	?	8 579.5	103.5	8 730.9
	T.	43.9	83.9	15.5	17 458.0	160.2	17 761.5
Silver	P.	5.0	76.7	9.6	500.3	1.0	592.6
	R.	10.9	18.2	250.0	250.8	20.0	549.9
	T.	15.9	94.9	259.6	751.1	21.0	1 142.5

Copper, molybdenum, lead, and zinc -- $\times 10^3$ short tons of metal; silver -- $\times 10^6$ ounces.
P. = past production; R. = current reserves of all categories; T. = total.

TABLE 9
1973 PRODUCTION BY TECTONIC BELT

		INSULAR	COAST CRYSTALLINE	INTER- MONTANE	OMINECA	EASTERN MARGINAL
PRODUCTION VALUE 1973	> \$ 100 x 10 ⁶	Cu		Cu	Zn, Pb	
	> \$ 30 x "	Fe	Cu	Mo	Ag	
	> \$ 10 x "	Zn, Au		Au	Cu, W	
	> \$ 3 x "	Ni, Ag	Ni, Ag	Ag		Cu
	> \$ 1 x "	Pb, Mo	Au	Zn, Hg	Au	
	< \$ 1 x "			Fe, Pb	Mo	Ag, Au

The data from these tables and graphs are manipulated in Table 10 to compare rankings by tectonic belt of 'characteristic metal' from commodity maps, 1973 production, production and reserves in December 1973, and the geochemical background. The latter is averaged for silts and soils and only above-average backgrounds are shown. Unfortunately, in Table 10, column 4 shows only non-ferrous base metals, and column 3 only these metals plus silver. Iron is not shown except in column 2.

The high degree of congruency of the ranking by all these methods is readily evident. This correlation indicates a fundamental relationship between the levels of geochemical background, number and distribution of showings, and the amount and distribution of ore.

The comparison of Table 10 also indicates a number of features deserving of comment:

- (1) The importance of copper throughout the Cordillera. It occurs most widely and ranks highly in most tectonic belts, including the Eastern Marginal Belt.
- (2) Zinc follows copper in both broad distribution and high ranking among the major metals produced. The importance and breadth of distribution of molybdenum and lead are equal although their distribution within different tectonic belts differs markedly.
- (3) The Eastern Marginal Belt is the least mineralized belt with the fewest mineral showings, least reserves, and least diversity, well behind the Coast Crystalline Belt which is second poorest. In the Eastern Marginal Belt there is a dearth of plutons to augment the concentration process, whereas, in the Coast Crystalline perhaps too many plutons and resultant high temperatures have dispersed potential mineral deposits.

The most important feature, the congruency of the rankings deserves some extended comment. Apparently high soil and silt geochemical background levels correlate with numerous showings and also with numerous mines. The converse is also true. The most reasonable explanation for the first-mentioned correlation is that high background is an essential component to significant mineralization, whereas, the theory that dispersal of metals from major concentrations creates high regional backgrounds seems improbable. This is especially true when it is realized that the very great bulk of metal in the upper crust is present in the background. Sutherland Brown (1974) for the Intermontane Belt, calculated that if copper in all the known and speculative mineral deposits of copper were evenly distributed it would only augment the background by 0.3 ppm in contrast to an average background of 40 ppm. If high background values are associated with numerous showings and abundant mines one can go further and suggest that metal tends to be concentrated from neighbouring space, probably largely by water/rock interaction. Neighbouring space can, of course, represent a considerable thickness of crust.

TABLE 10. COMPARISON OF RANKINGS OF METALS

TECTONIC BELT	CHARACTERISTIC COMMODITY FROM B.C. (TABLE 6)	1973 PRODUCTION B.C. AND YUKON	PRODUCTION AND RESERVES, DEC. 1973 B.C. AND YUKON	REGIONAL GEOCHEMISTRY B.C.
INSULAR	Cu,Au;Zn;[As,Co,Sb]	Cu;Fe;[Zn,Au];(Ni,Ag)	Cu;Zn;[Mo,Pb]	Cu,Zn;Mo;[Pb]
COAST	Au;Ni,Hg,Mo,Sb;[As]	Cu;(Ni,Ag)	Cu;Zn;[Pb,Ag,Mo?]	Cu,Mo,Zn;[Pb]
INTERMONTANE	Cu,Mo;Hg;[Sn]	Cu;Mo;[Au];(Ag)	Cu,Mo;Ag;[Zn,Pb]	Mo;Zn,Cu;[Pb]
OMINECA	Ag,Pb,Au;Zn,W,U,Ni;[Sn]	Zn,Pb;Ag;[Cu,W]	Pb,Zn;Cu,Ag;[Mo]	Pb;[Cu,Mo,Zn]
EASTERN MARGINAL	-----	(Cu)	Pb,Zn,Cu;[Ag]	Pb
	Cu \geq 100 properties Au \geq 10 properties [Co] < 10 properties	Cu \geq \$1.0 x 10 ⁸ Mo \geq \$3.0 x 10 ⁷ [Au] \geq \$1.0 x 10 ⁷ (Ni) \geq \$3.0 x 10 ⁶	Cu \geq 10 ⁹ tons Mo \geq 10 ⁸ tons [Ag] > 10 ⁷ tons	Cu high Mo moderately high [Pb] moderate

The connection between density of mineral occurrences, the distribution of ore, and the geochemical background leads to a search for causal relations. There appears to be an imperfect relationship between mean crustal abundance of an element and the distribution pattern of mineral occurrences of the same element. This relationship is shown to some degree by comparing the abundances in Table 11 but is best revealed by comparing the ratios of concentration necessary to produce ore deposits. The table lists the metals in order of increasing concentration ratios required for economic recovery. From this it can be seen that there is a general correlation between the resulting ranking and that of metals of Table 10. In general the metals with lowest ratios are characteristic of the Insular Belt whereas those with higher ratios occur in the more easterly belts including the Omineca Belt. The Eastern Marginal Belt can be ignored.

TABLE 11
CRUSTAL ABUNDANCE AND RATIO OF CONCENTRATION OF METALS

	Crustal Abundance* <i>in ppm</i>	Approximate Ore Grade <i>in ppm</i>	Ratio of Concentration
Iron	50 000	500 000	10
Cobalt	25	18 000	72
Copper	55	5 000	90
Nickel	75	7 500	95
Uranium	2.7	500	185
Molybdenum	1.5	1 500	1 000
Tungsten	1.5	2 000	1 333
Zinc	70	100 000	1 425
Silver	0.07	200	2 850
Gold (Lode)	0.005	16	3 200
Lead	12.5	60 000	4 800
Mercury	0.08	2 500	30 000

*Taylor, 1964, 1966.

These empirical relations lead to speculation regarding cause. Sutherland Brown (1974) has suggested that Taylor (1964a) provides a means of understanding the distribution and relating it to crustal processes. Taylor's diagram of ionic radius against ionic charge for lithophile and some siderophile elements shows an orderly arrangement of depletion and enrichment in the crust of these elements in relation to terrestrial abundance, governed principally by ionic size but also by valency. He concluded there was a strong upward fractionation of elements unable to enter into 6-fold coordination with oxygen in closely packed structures. The elements Mn, Fe, Cu, Ni, Mg, and Cr are retained in major minerals in the mantle and consequently are depleted in the crust. Elements of too large ionic size or of unsuitable valency for 6-fold coordination with oxygen are strongly concentrated in the crust, approximately in proportion to their differences in size and valency.

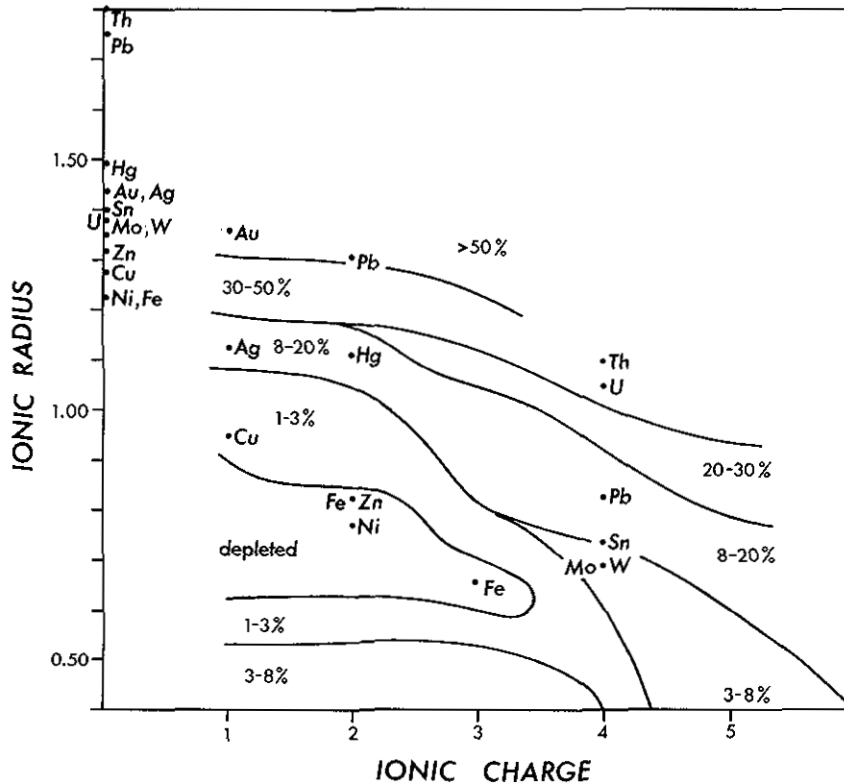


Figure 4. Taylor's diagram, modified for metals, indicating the relation between depletion or percentage concentration in the crust and ionic radius and charge.

Sutherland Brown (1974) plotted the common ore metals on Taylor's diagram (Fig. 4), although most are largely chalcophile or siderophile and not commonly ionically bonded. This does not appear to be critical, for the pattern resulting is compatible with that found by Taylor. However, more important to this discussion, the pattern is virtually the same as that of metal abundance and distribution of mineral deposits in the Canadian Cordillera. Elements showing depletion or only slight enrichment in relation to earth abundances are dominant in the Insular Belt. This belt may be considered to be composed of a large proportion of the most 'primitive' crustal materials in the sense that it is composed of rocks closest in composition to mantle rocks. In contrast, elements showing the highest enrichment in the crust are those characteristic of the deposits of the Omineca Belt, the tectonic belt most highly evolved by crustal processes. The belts between the Insular and Omineca occupy sequential positions in relation to metal characteristics and space. It should be noted that the order listed on the ordinate for atomic radii of the metals is substantially similar to both the order in Table 11 for ratio concentrations and the composite of rankings in Table 10.

Various interpretations are possible to explain this systematic arrangement, but an obvious one is that it results in part from the accretion of Cordilleran crust to a more easterly continental margin. Material is cycled from the mantle to the western periphery

and successively reworked and concentrated as it is incorporated. Areas of pre-existing or older continental crust show a concentration of large ions, dilution of medium-sized ions, and more selectively enriched domains related to specific lithologies.

A MODEL OF ACCRETION AND METALLOGENY

Models for the accretionary evolution of the Canadian Cordillera are still developing — there is no consensus on details but a fair agreement exists on the general pattern of accretion. To help visualize the processes involved, a series of simplified diagrams are

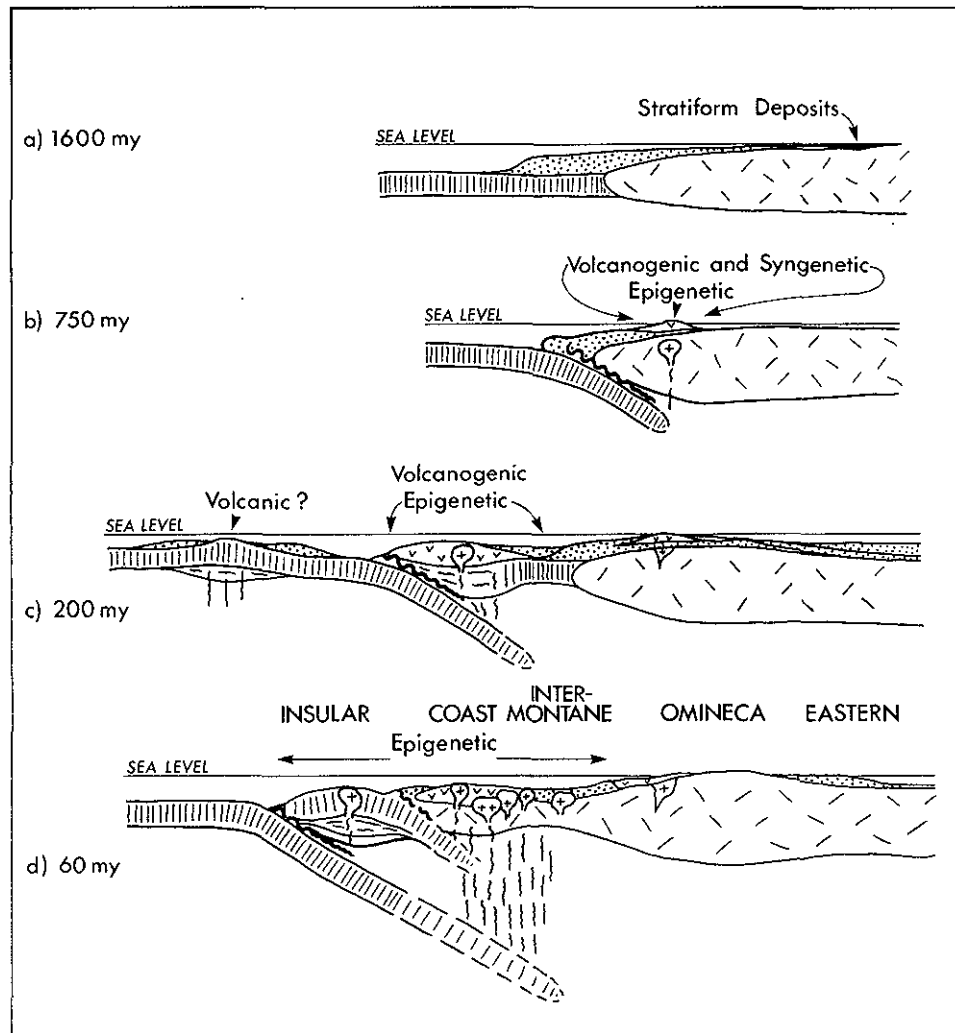


Figure 5. Accretionary evolution of the Canadian Cordillera showing the sites of mineral deposits.

shown on Figure 5 based on Berry and Forsyth (1975), Dickinson (1976), Monger, Souther, and Gabrielse (1972), Wheeler and Gabrielse (1972), and Wolfhart and Ney (1976). These references should be consulted for a more thorough treatment of the tectonic history. Our interest is to illustrate, in a general way, the distribution in time and space of the varying modes of formation of mineral deposits.

During the Late Proterozoic, a period of Atlantic-type continental margins, some stratiform deposits (for example, Sullivan deposit) were formed in what would become the Rocky Mountain and Omineca Belts (Fig. 5a). The Kootenay disturbance (circa 800 m.y. ago), which was probably accompanied by minor subduction, resulted in formation of both volcanogenic and epigenetic deposits in the general area of the Omineca Belt (Fig. 5b). During Late Paleozoic, but particularly Triassic and Early Jurassic times, a continental margin with some similarities to the Japan-type existed in a broad area to the west of Omineca Belt. In this period epigenetic and volcanic deposits formed in the arc and backarc environments and to a lesser extent in the offshore volcanic setting that became the Insular Belt (Fig. 5c). As this latter belt impinged on the extended continental margin, the site of subduction transferred to the west and culminated during the Early Tertiary in a major thermal event centred on the eastern side of the present Coast Crystalline Belt and coupled with the creation of the major Cordilleran backarc fold/thrust belt (mostly Eastern Marginal Belt) (Fig. 5d). During the latter period epigenetic deposits were formed across the breadth of the four western belts.

The results of this are portrayed on Figure 6, a section from Barkley Sound through Kamloops to beyond Mount Freshfield on the Alberta border. This section shows the continental margin still subject to modest subduction (Hyndman and Riddihough, 1977) and the Cordillera cut by major through-going faults that separate and also segment the tectonic belts (Gabrielse, Campbell, Monger, Richards, and Tipper, 1977). These faults were loci of large lateral offsets but do not appear to dislocate mineral zones extensively relative to the scale we are dealing with here. The Mohorovicic discontinuity is interpreted from Berry and Forsyth (1975) and the sillimanite isograd from Wheeler and Gabrielse (1972). Portrayal of the Coast Plutonic Belt follows interpretations of Hamilton and Myers (1967).

On this section (Fig. 6) is shown a zone of major Late Paleozoic, Mesozoic, and Cenozoic epigenetic deposits, a zone of major Proterozoic and Early Paleozoic syngenetic and epigenetic deposits, and a zone of possible Archean and Early Proterozoic epigenetic deposits. Metal occurrence-density patterns for the major metals are shown above the cross-section. The mineralized zones are based on mineral commodity maps and the accretionary model described previously. Rocks above the sillimanite isograd are largely eroded in the Coast Crystalline Belt so that lower grade metamorphic rocks are present only in pendants and screens. In the Omineca Belt, in contrast, the sillimanite isograd is uplifted but is largely below the present surface. The zone of major Mesozoic and Cenozoic epigenetic deposits in the Insular and Intermontane Belts is thick so that accidental foldings or uplift invariably still include relatively low metamorphic grade volcanic and sedimentary rocks punctured by plutons. Both Insular and Intermontane

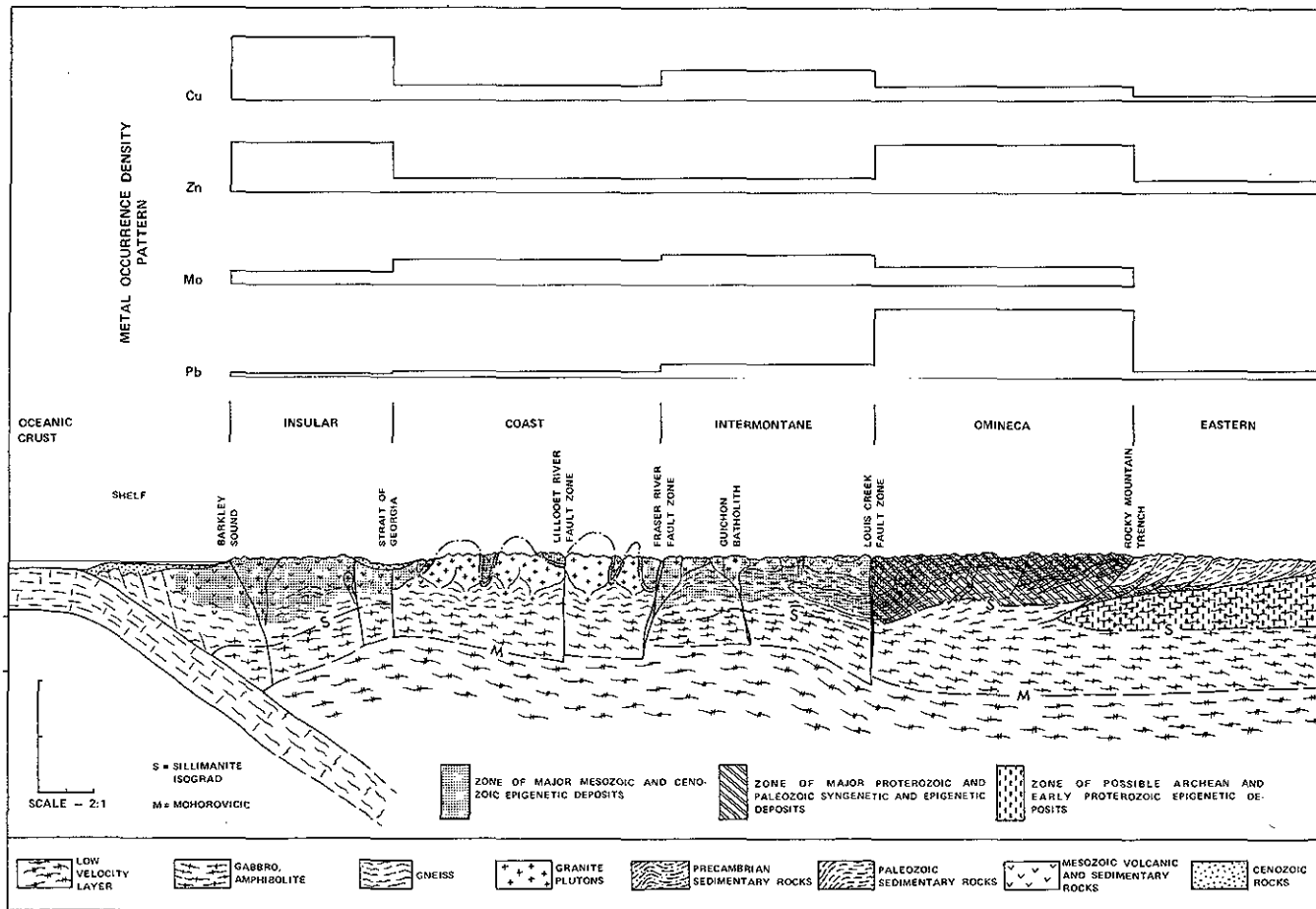


Figure 6. Hypothetical section through the southern Canadian Cordillera showing the distribution of mineral zones relative to geology, tectonic belts, and metal occurrence density pattern.

Belts are capped locally by surficial rocks that are unmineralized or scarcely so, although these may form traps for concentrations of secondary uranium from circulating groundwater. The Omineca Belt, in addition to participating in the Mesozoic/Cenozoic epigenetic metallogenesis, also contains major Proterozoic and Early Paleozoic syngenetic mineral deposits – in some cases remobilized due to intense metamorphism and mechanical deformation. In addition, the Kootenay disturbance introduced some volcanogenic and epigenetic deposits. Therefore, the Omineca Belt has participated in the maximum duration of tectonism with consequent increased chances for a diverse development of mineral deposits, particularly of the elements requiring multiple processes to create ratios of concentrations sufficient for ore deposits. The fold and thrust belt of the Rocky Mountains includes some Proterozoic rocks with possible stratiform deposits and overlies a zone at depth that may contain older Precambrian deposits but as most possibilities occur at depth, the belt is impoverished in outcropping deposits.

5

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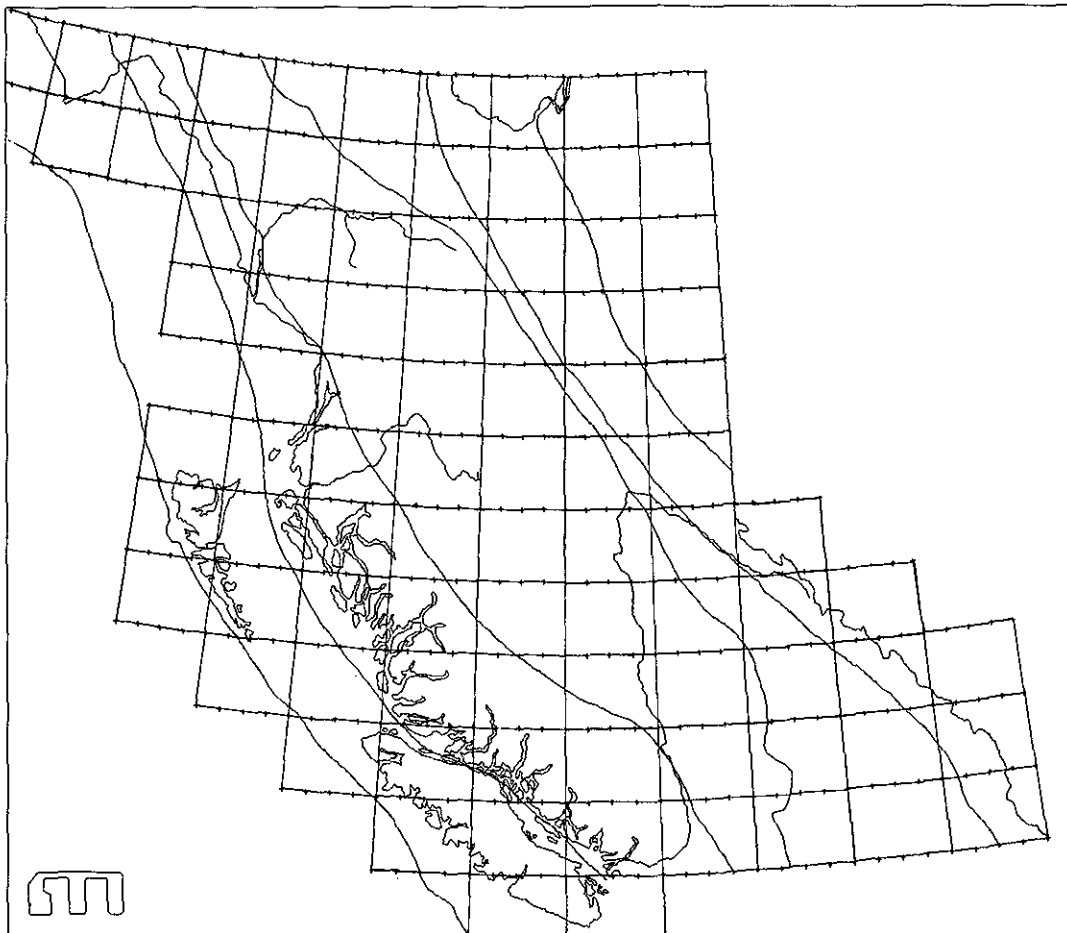
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I

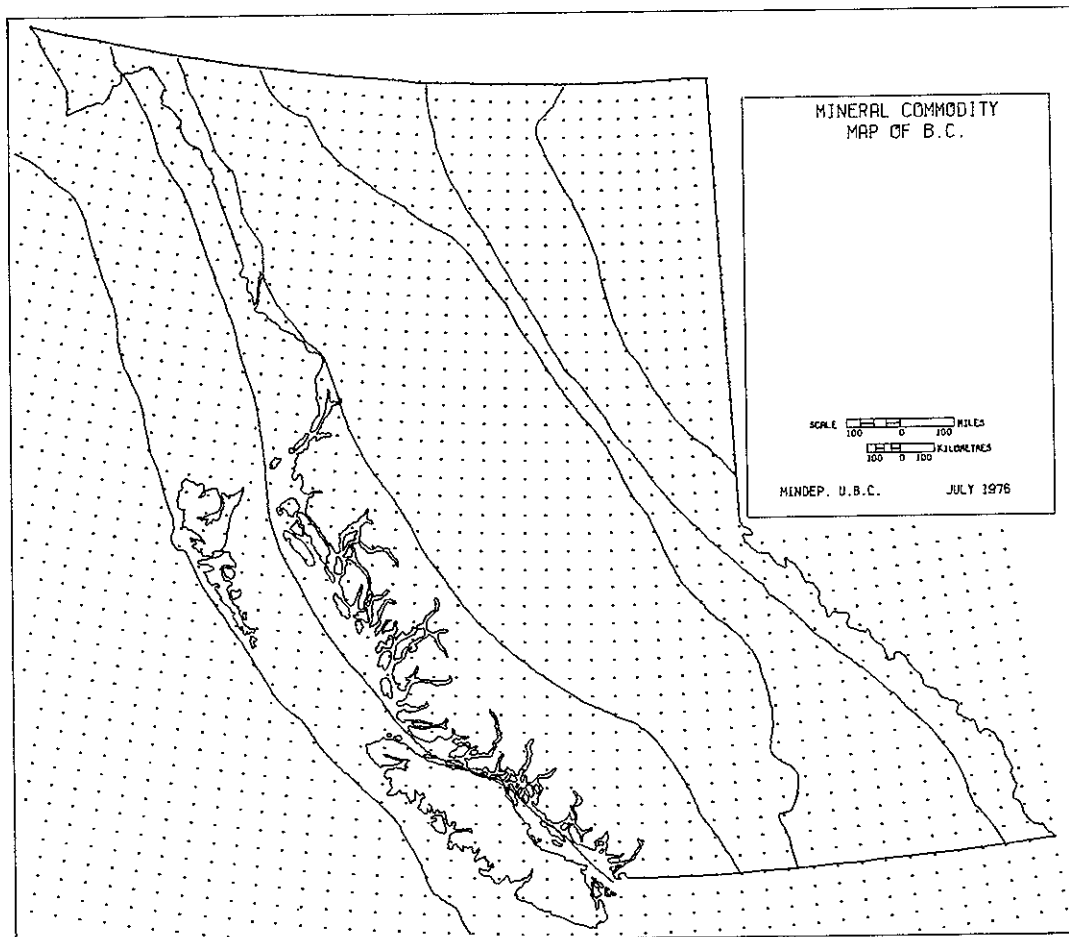
APPENDIX

COMPUTER-GENERATED MAPS:

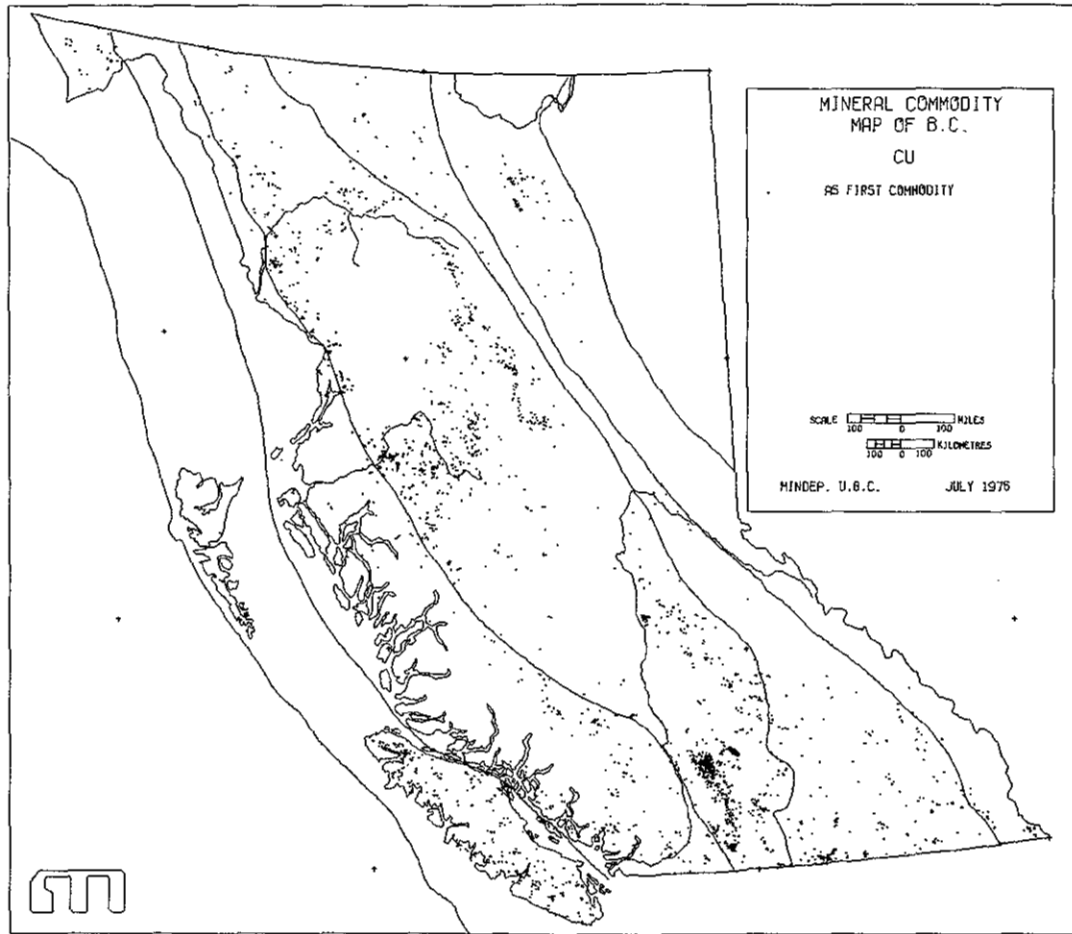
- 1 – GEOGRAPHIC REFERENCE GRID FOR MINERAL COMMODITY OCCURRENCE MAPS
- 2 – GRID USED IN CONTOURING FOR MAPS 28, 29, AND 30
- 3 to 27 – MINERAL COMMODITY REFERENCE MAPS
- 28 to 30 – CONTOURED MINERAL COMMODITY OCCURRENCE MAPS FOR COPPER, LEAD, AND MOLYBDENUM



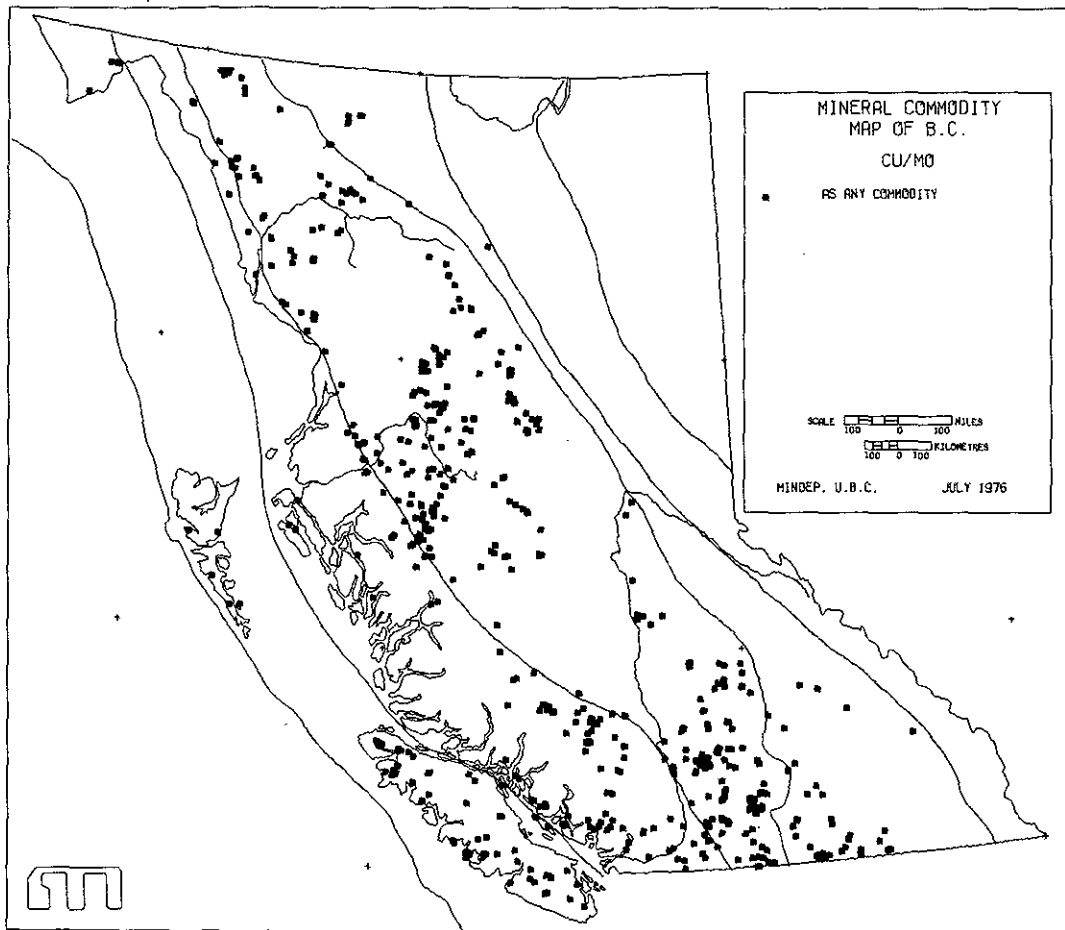
Map 1. Geographic reference grid for mineral commodity occurrence maps.



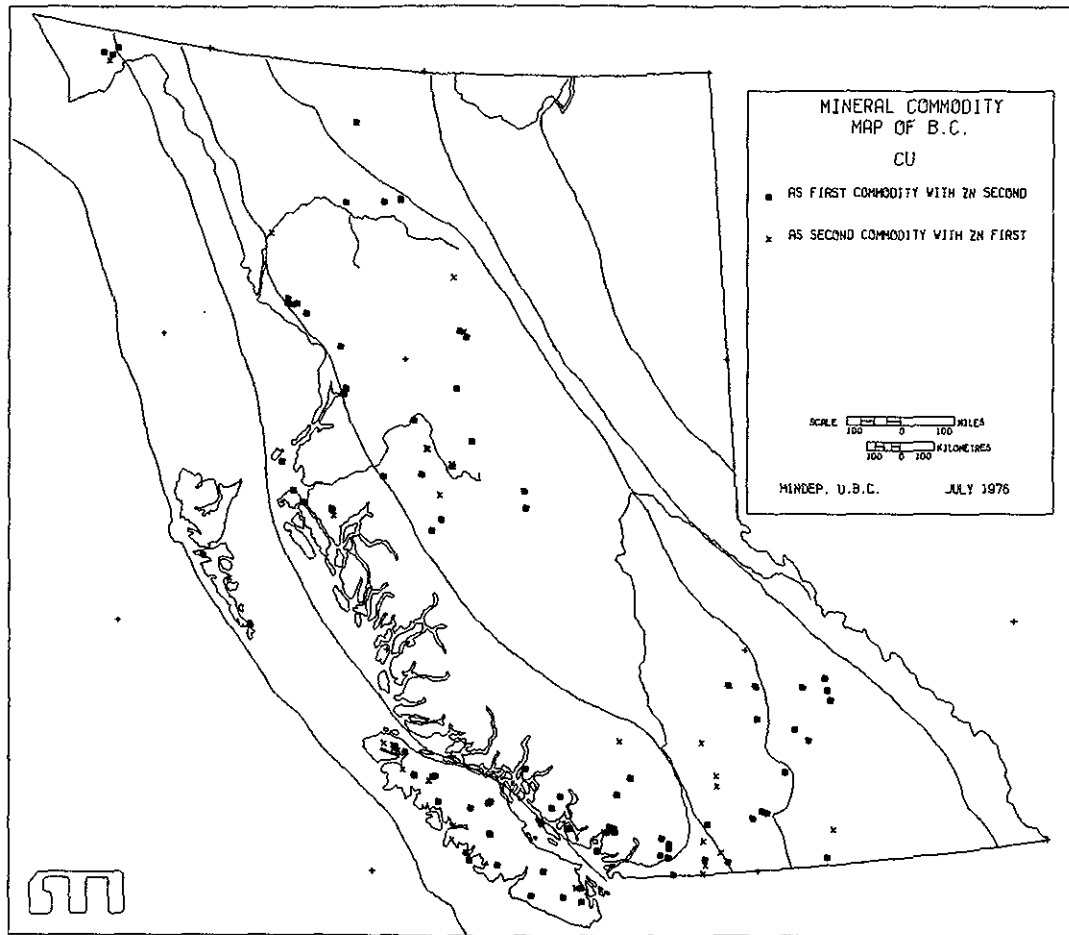
Map 2. Grid used in contouring for Maps 28, 29, and 30.



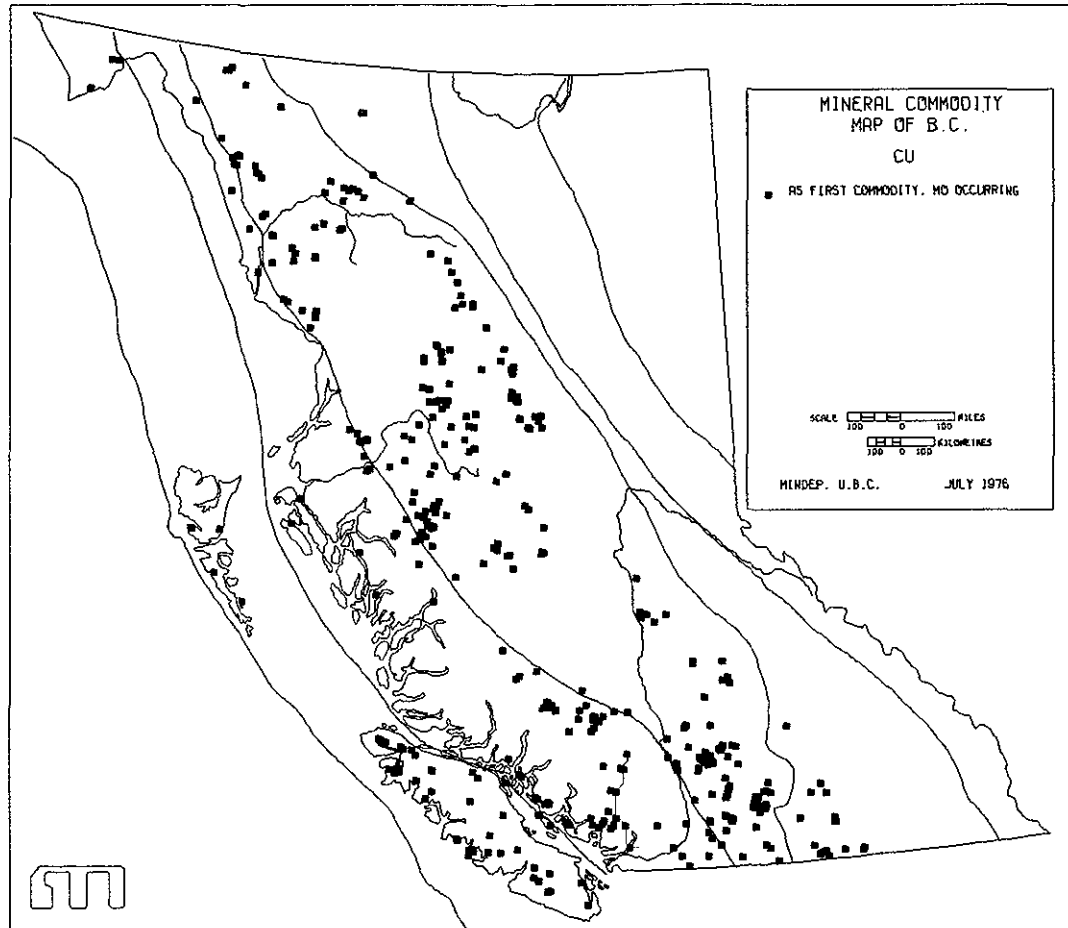
Map 3. Mineral commodity map — copper as first commodity.



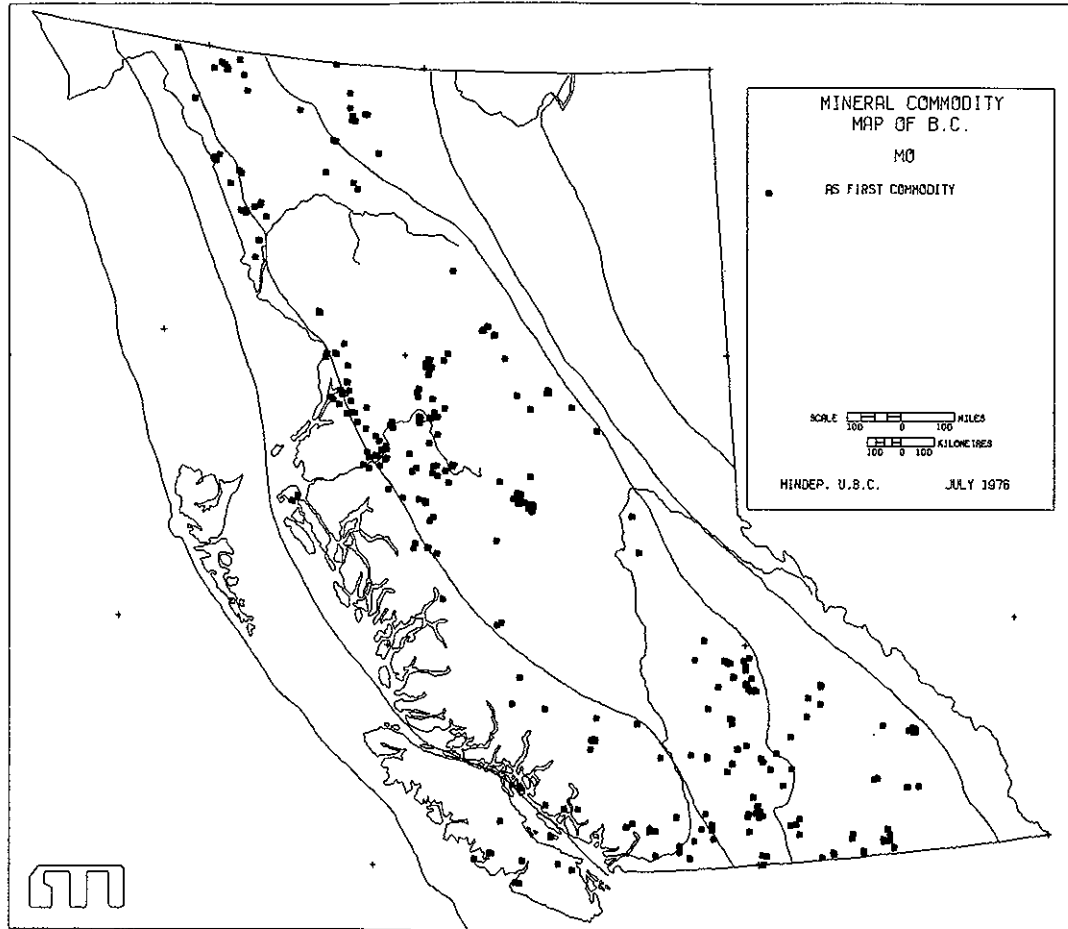
Map 4. Mineral commodity map — copper/molybdenum as any commodity.



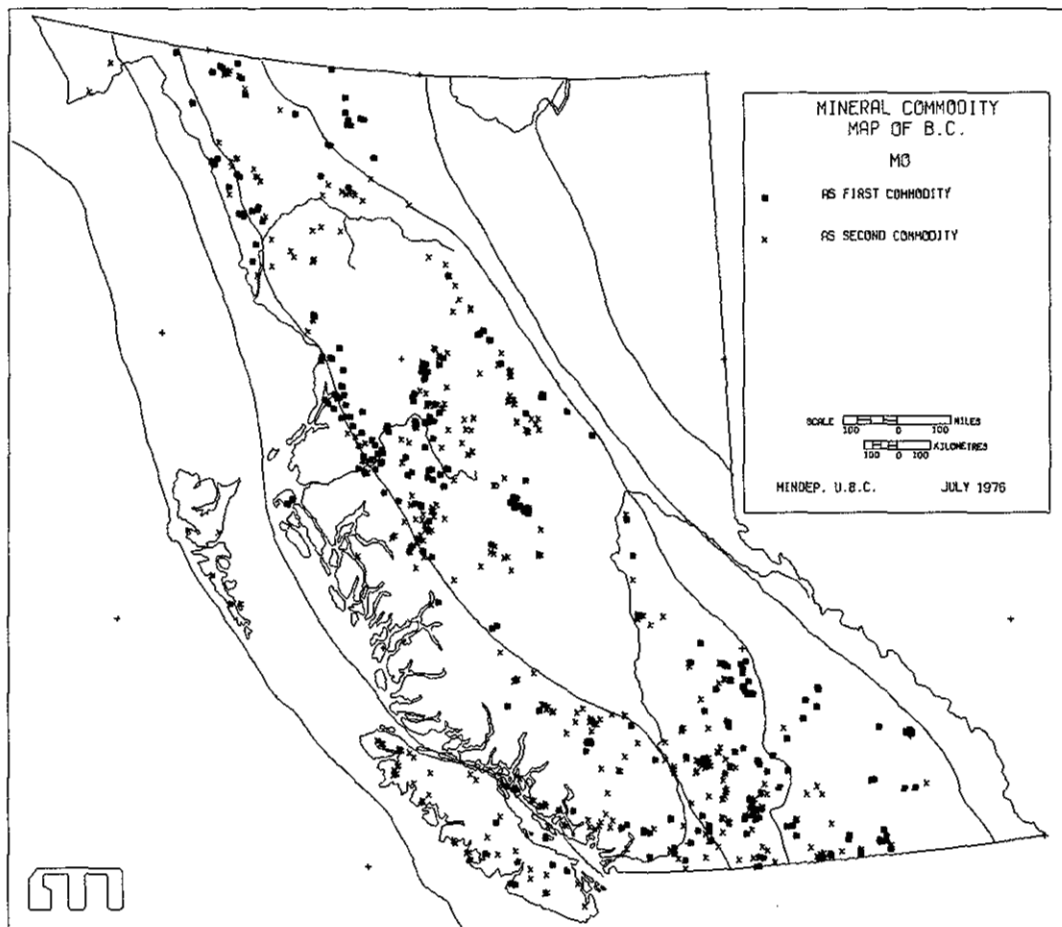
Map 5. Mineral commodity map – copper as first and as second commodity with zinc second and first.



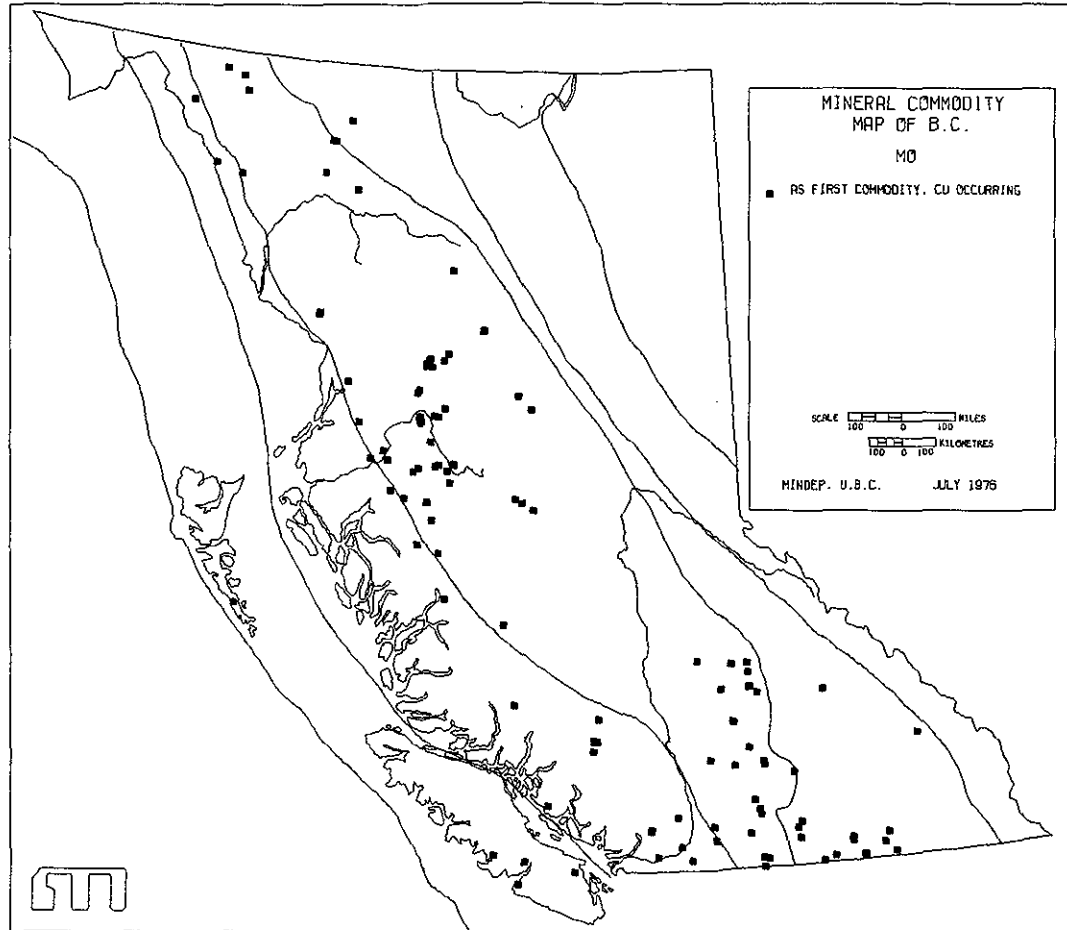
Map 6. Mineral commodity map — copper as first commodity, molybdenum occurring.



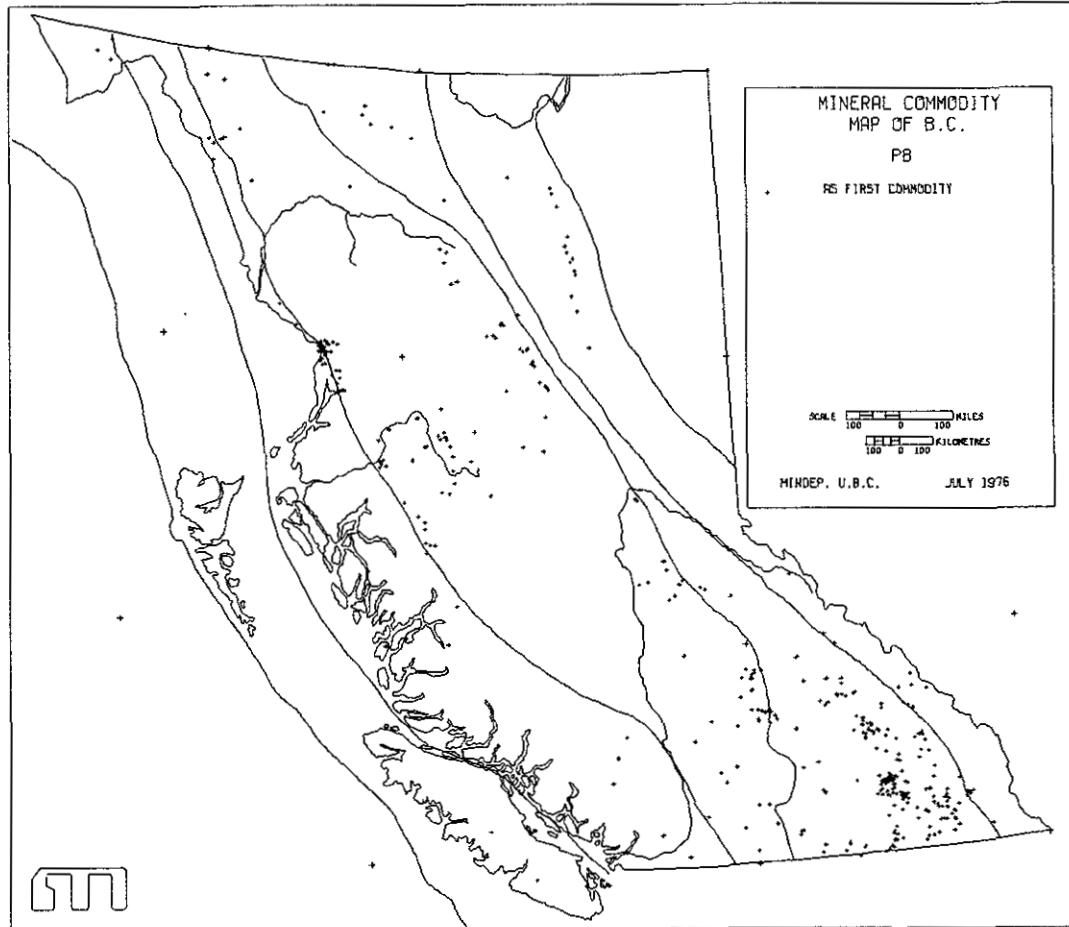
Map 7. Mineral commodity map — molybdenum as first commodity.

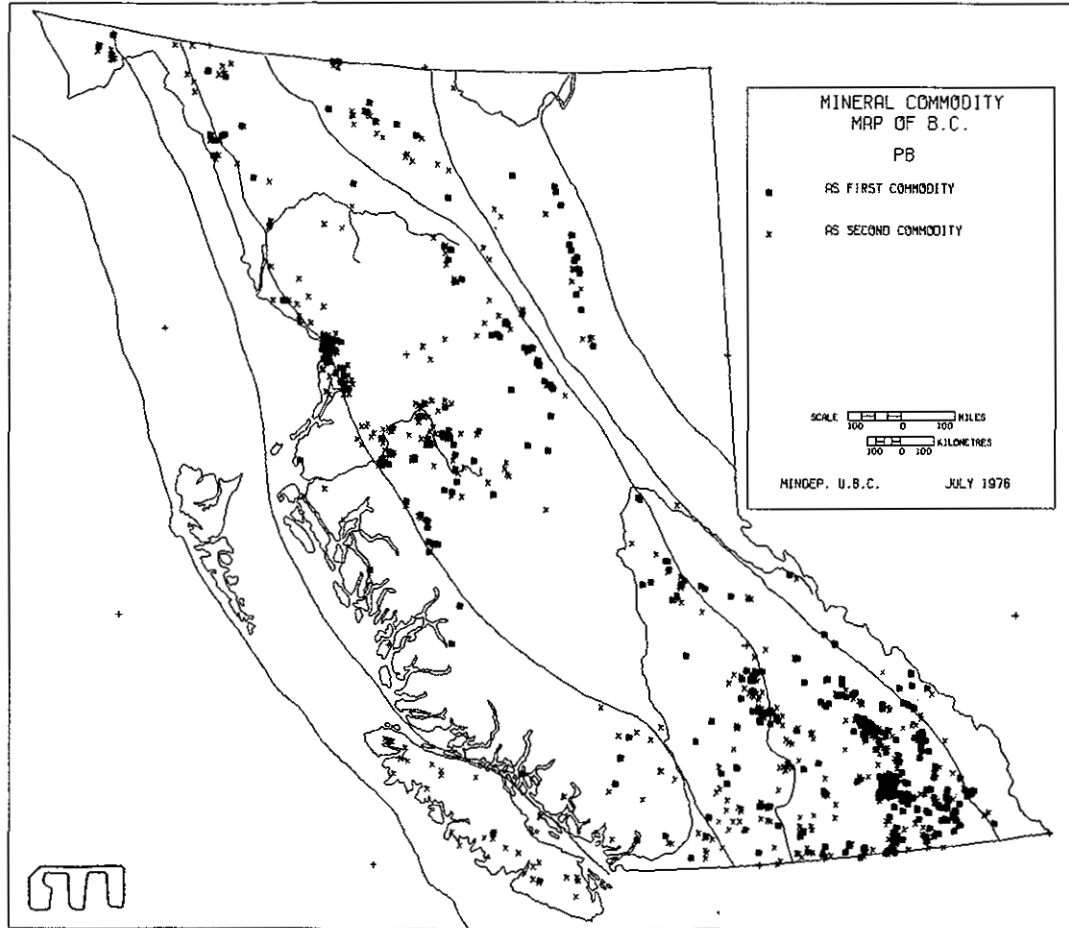


Map 8. Mineral commodity map – molybdenum as first and as second commodity.

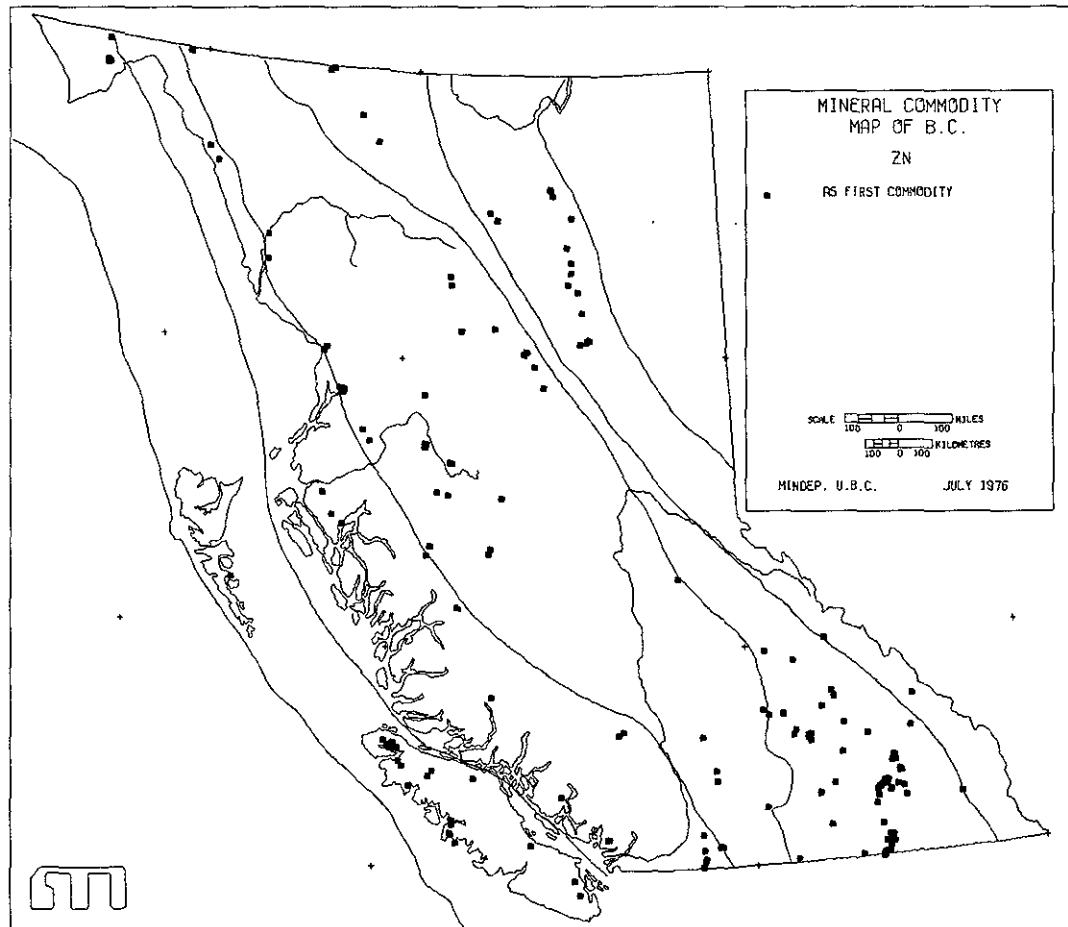


Map 9. Mineral commodity map — molybdenum as first commodity, copper occurring.

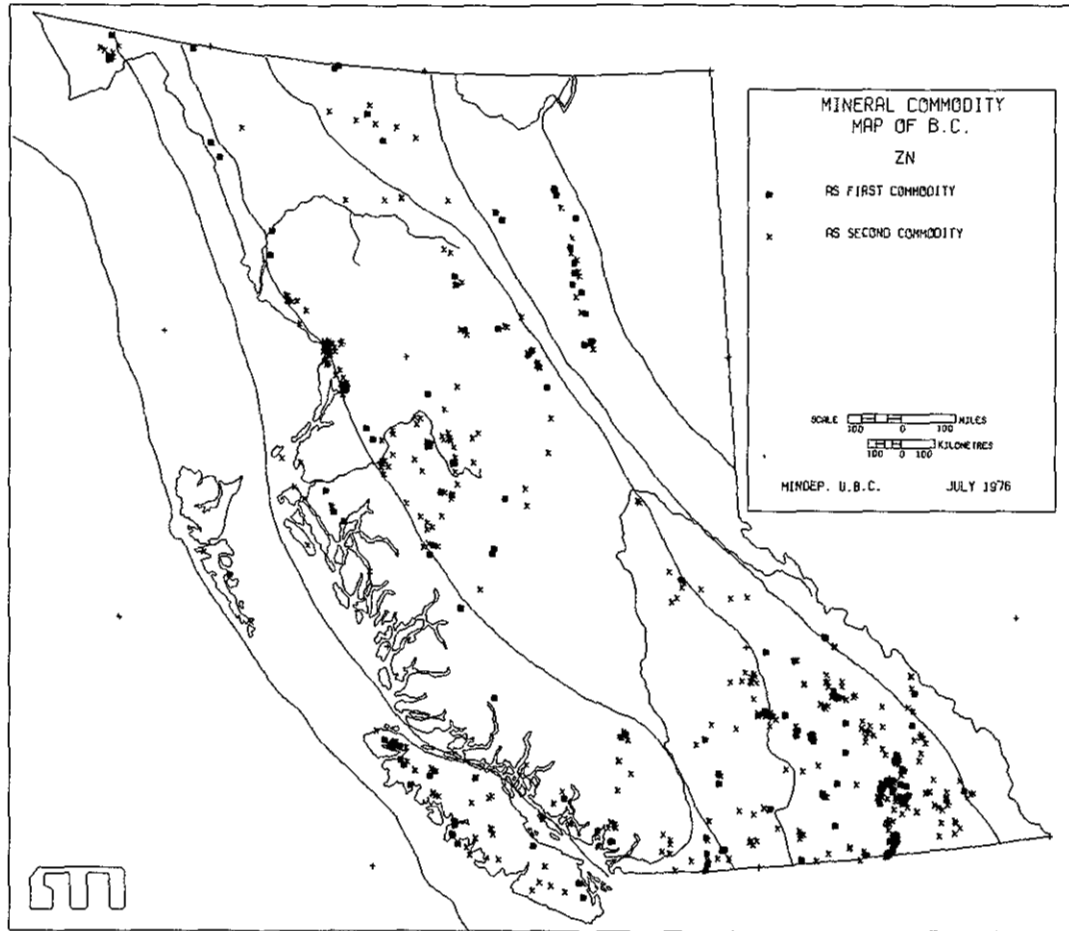




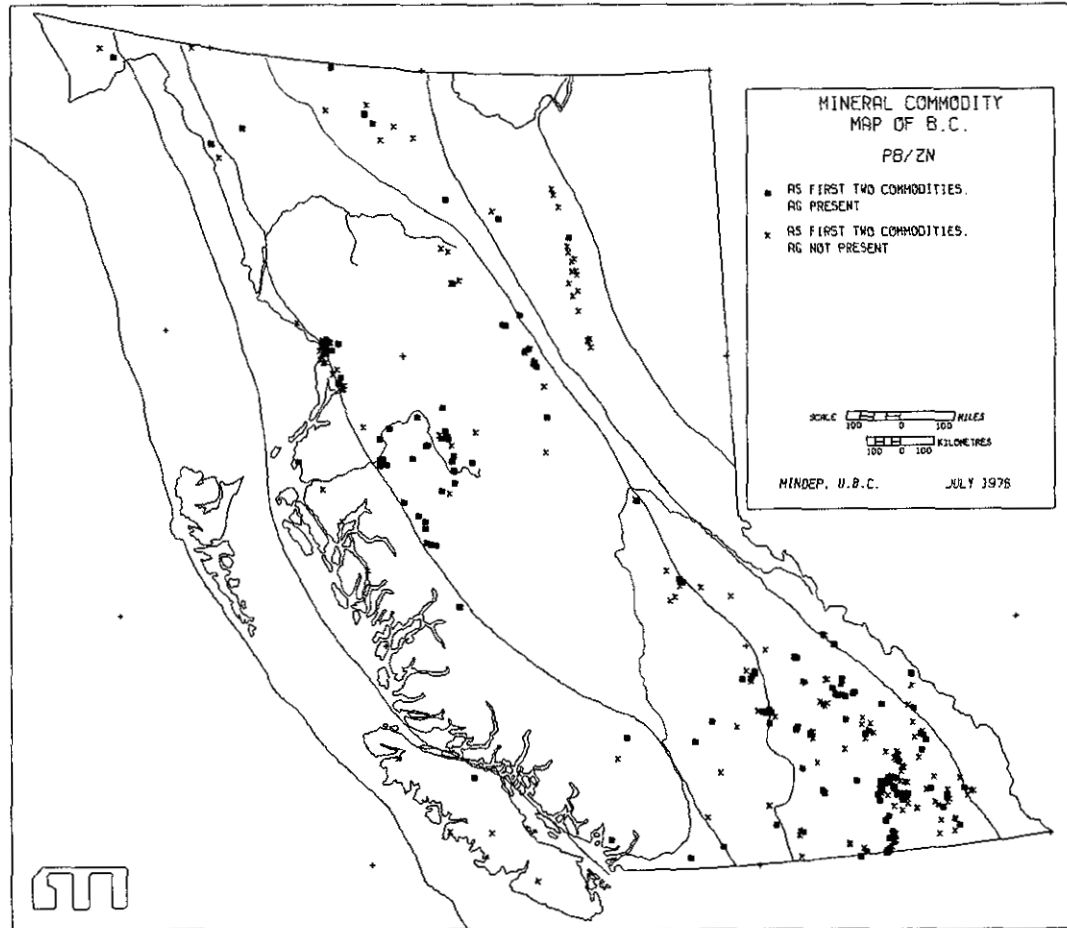
Map 11 Mineral commodity map — lead as first and as second commodity.



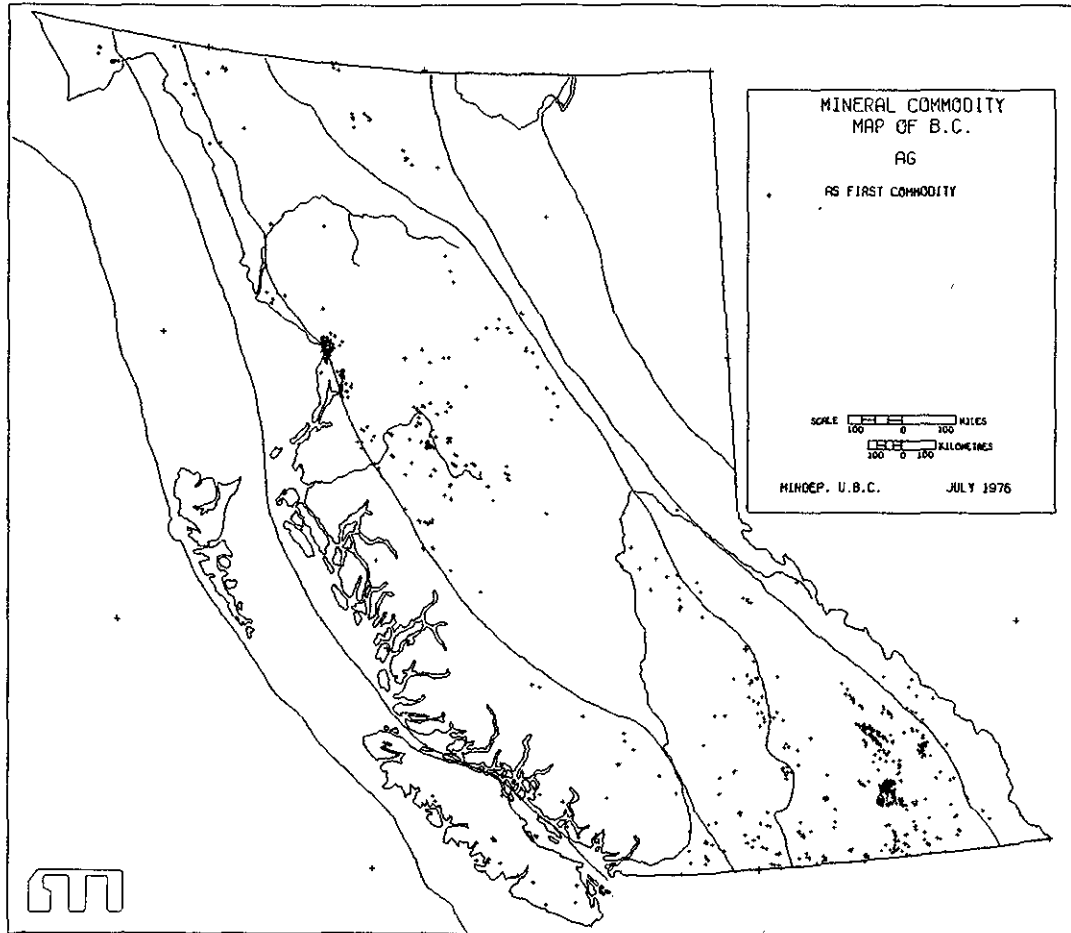
Map 12. Mineral commodity map – zinc as first commodity.



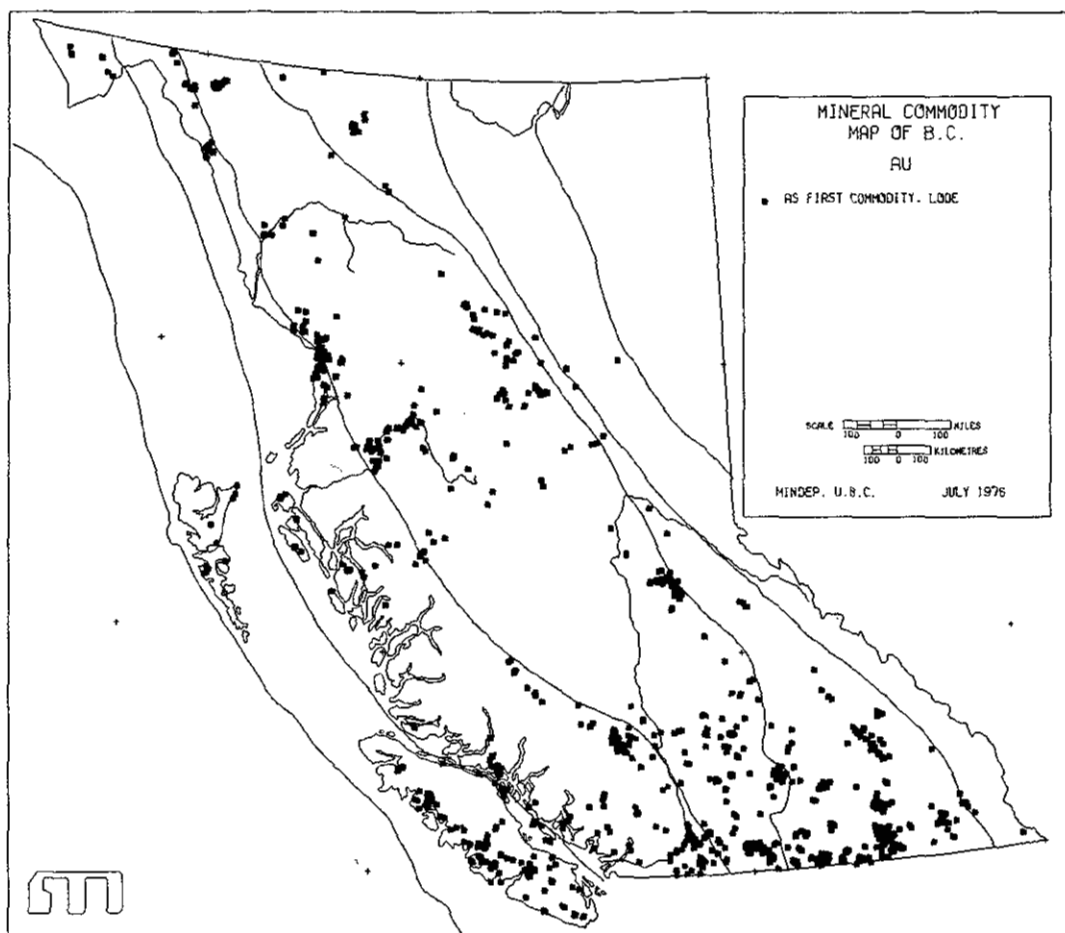
Map 13. Mineral commodity map — zinc as first and as second commodity.



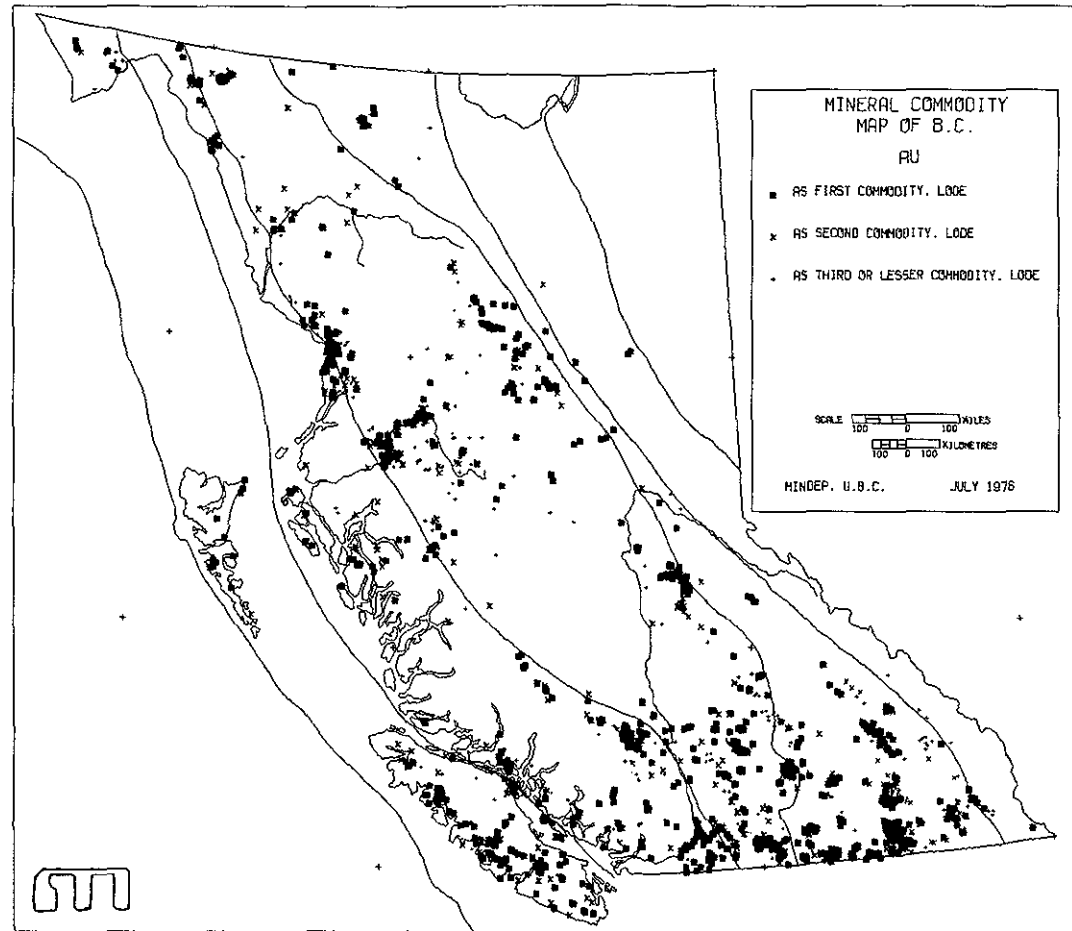
Map 14. Mineral commodity map — lead/zinc as first two commodities, silver present and not present.



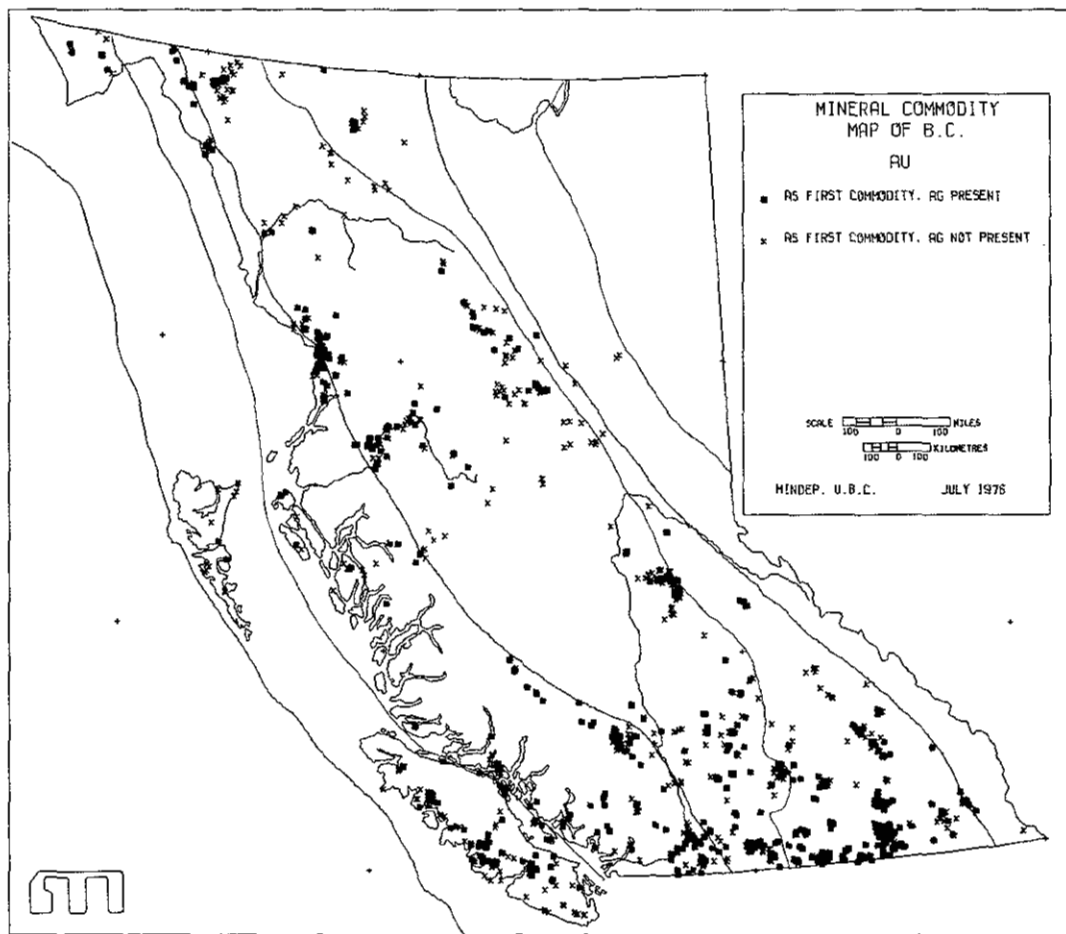
Map 15. Mineral commodity map -- silver as first commodity.



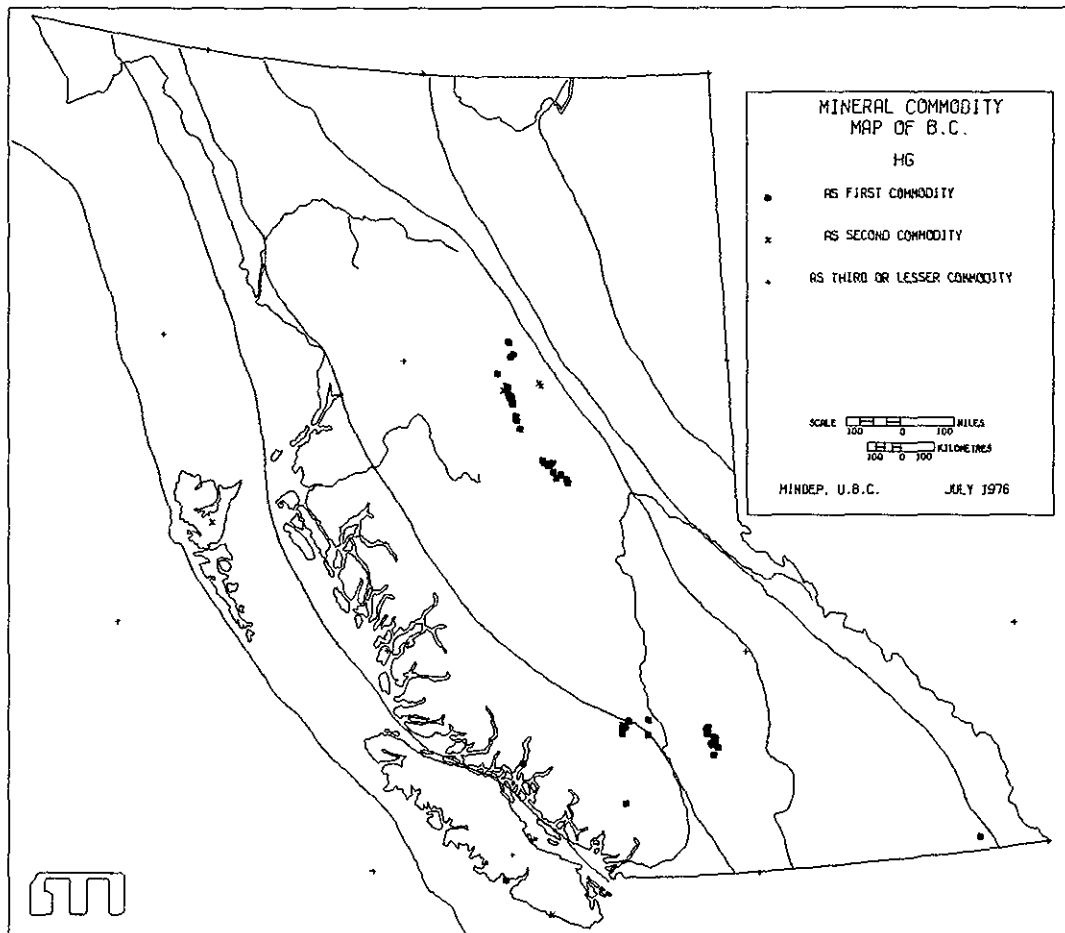
Map 16. Mineral commodity map – lode gold as first commodity.



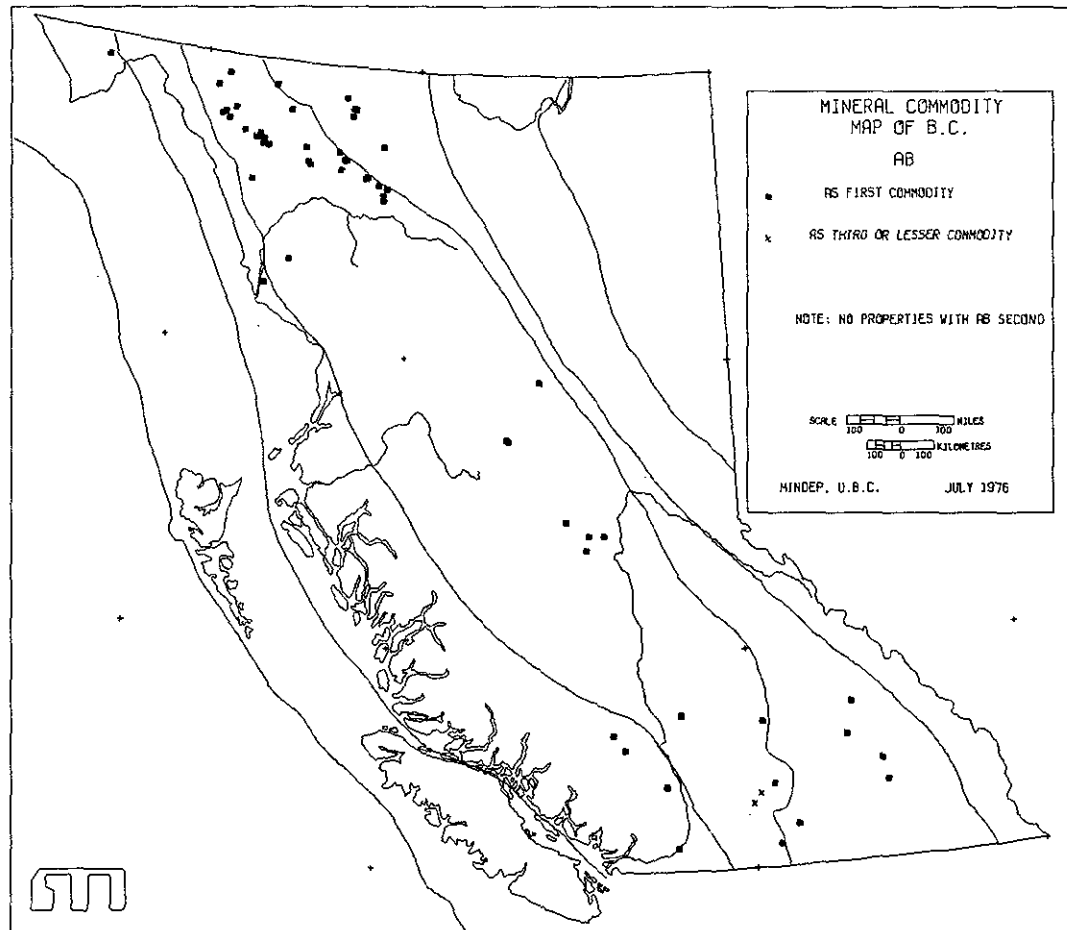
Map 17. Mineral commodity map — lode gold as first, second, third, or lesser commodity.



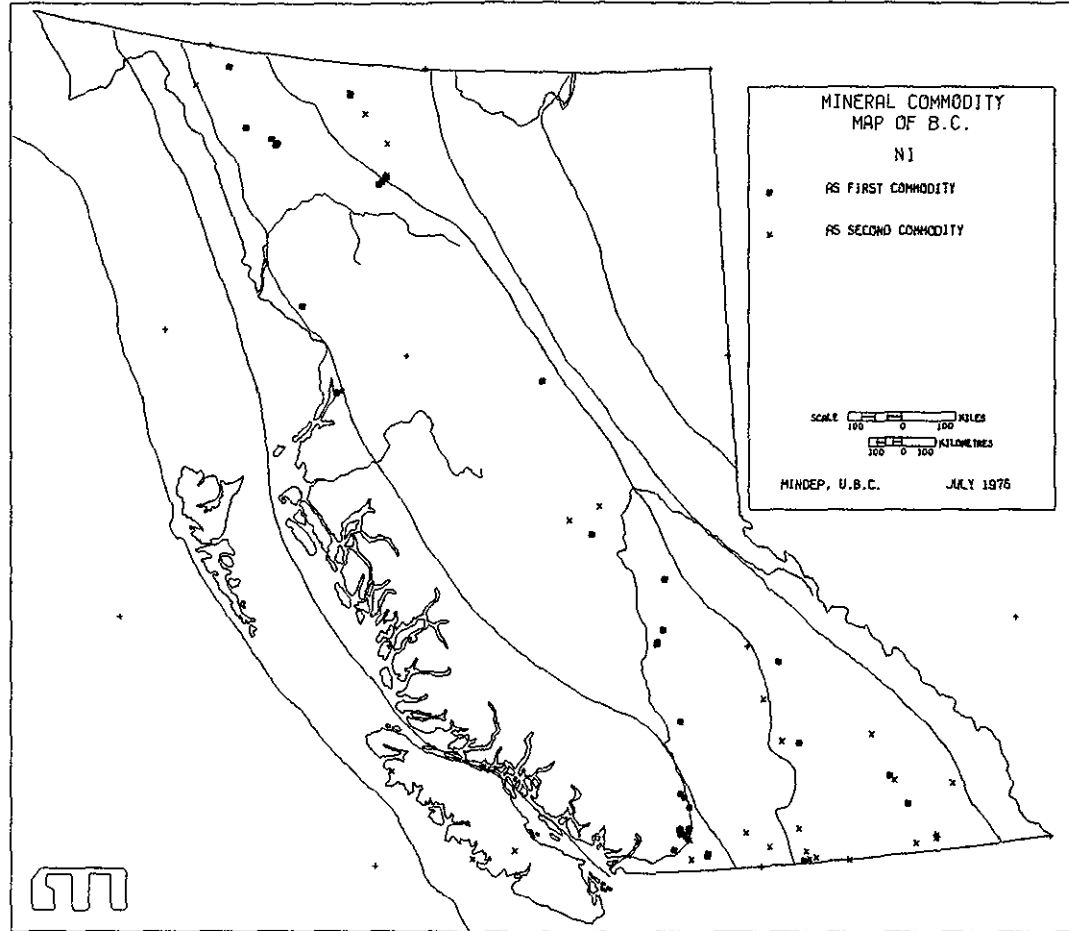
Map 18. Mineral commodity map — gold as first commodity, silver present and not present.



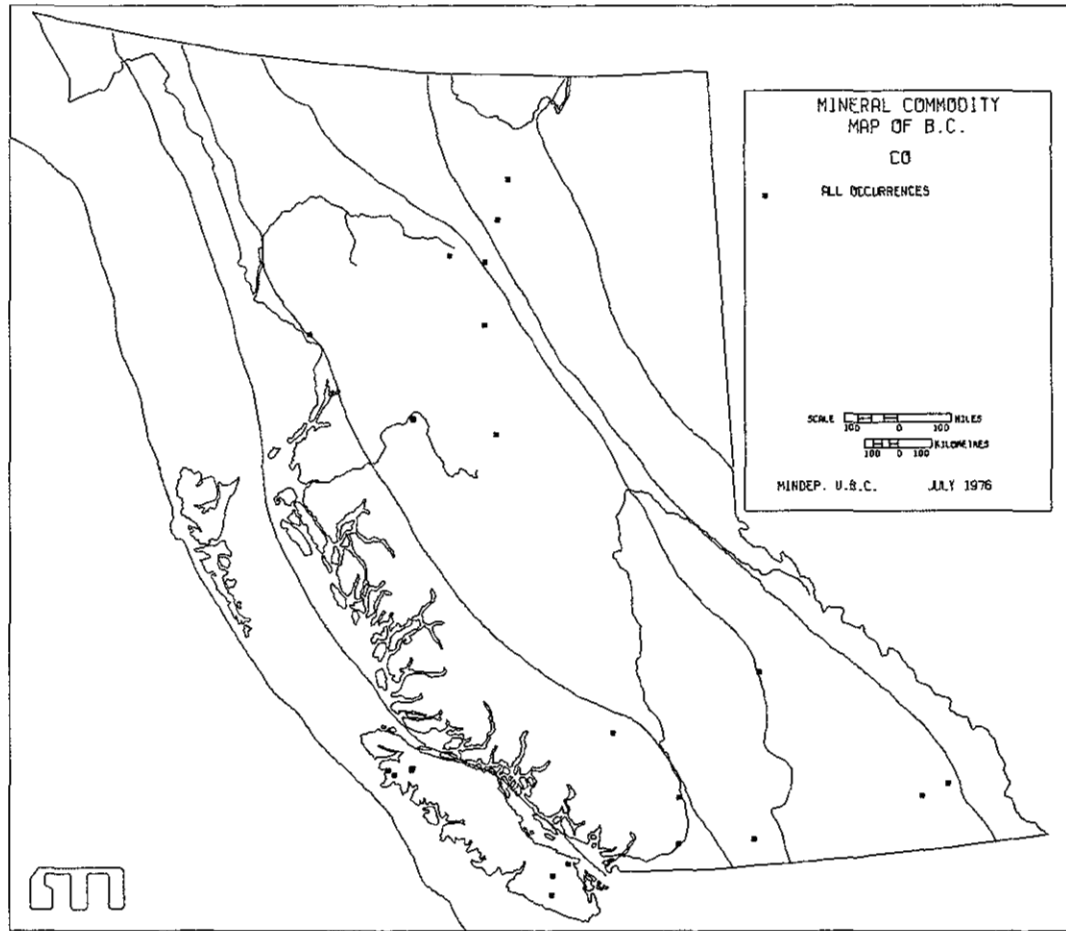
Map 19. Mineral commodity map -- mercury as first, second, third, or lesser commodity.



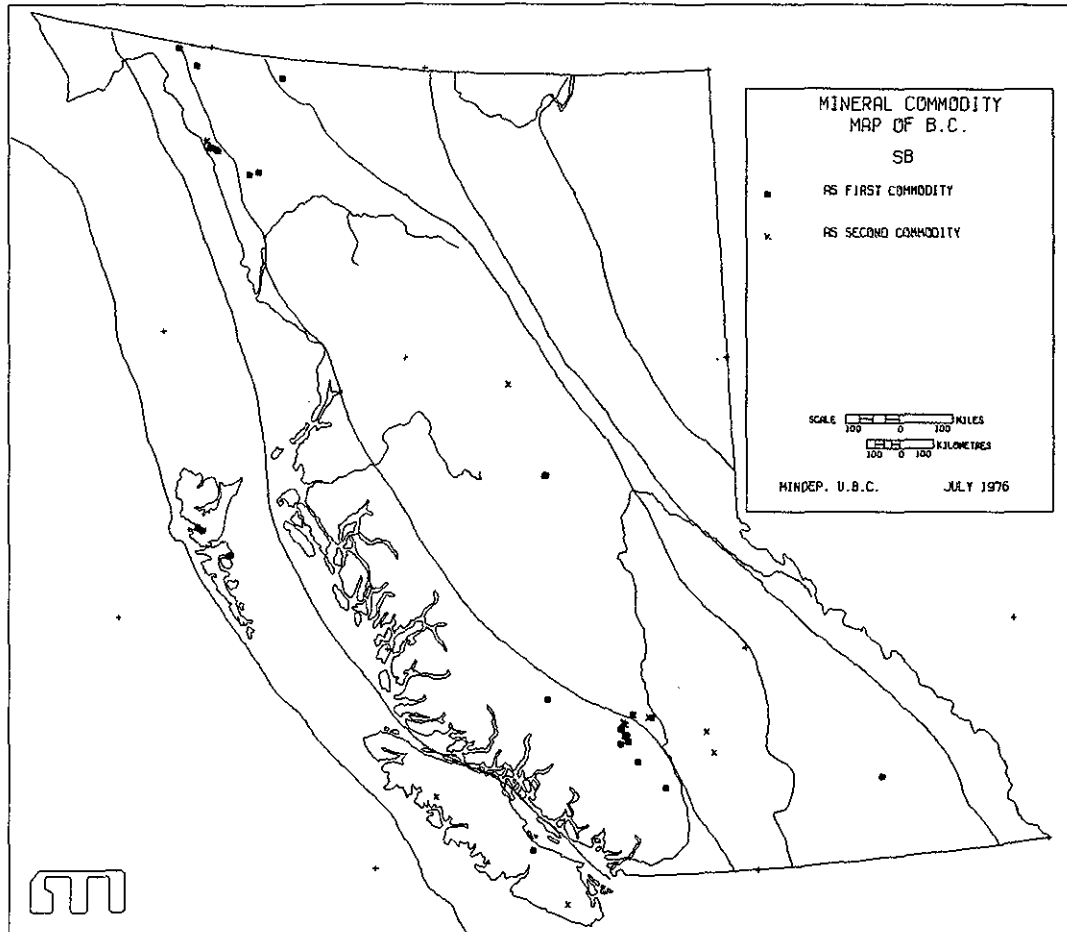
Map 20. Mineral commodity map — asbestos as first, third, or lesser commodity.



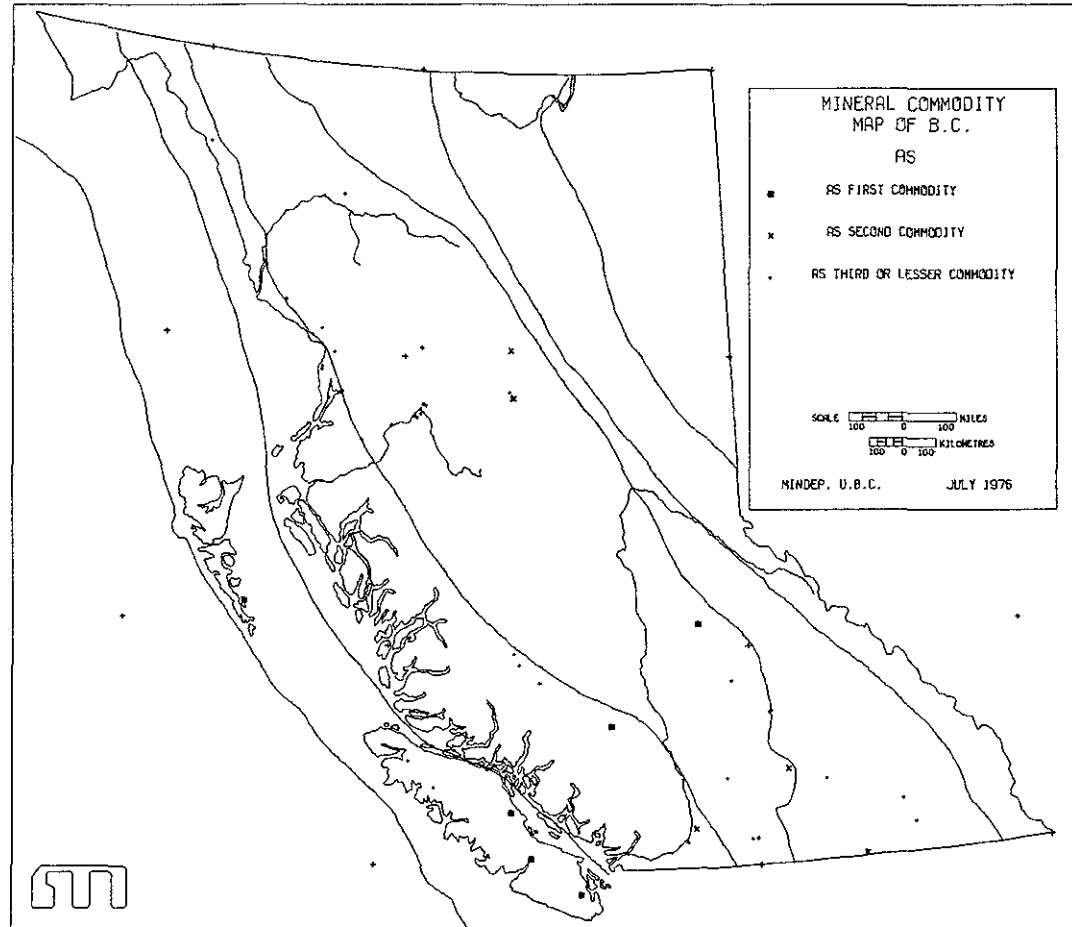
Map 21. Mineral commodity map – nickel as first and as second commodity.



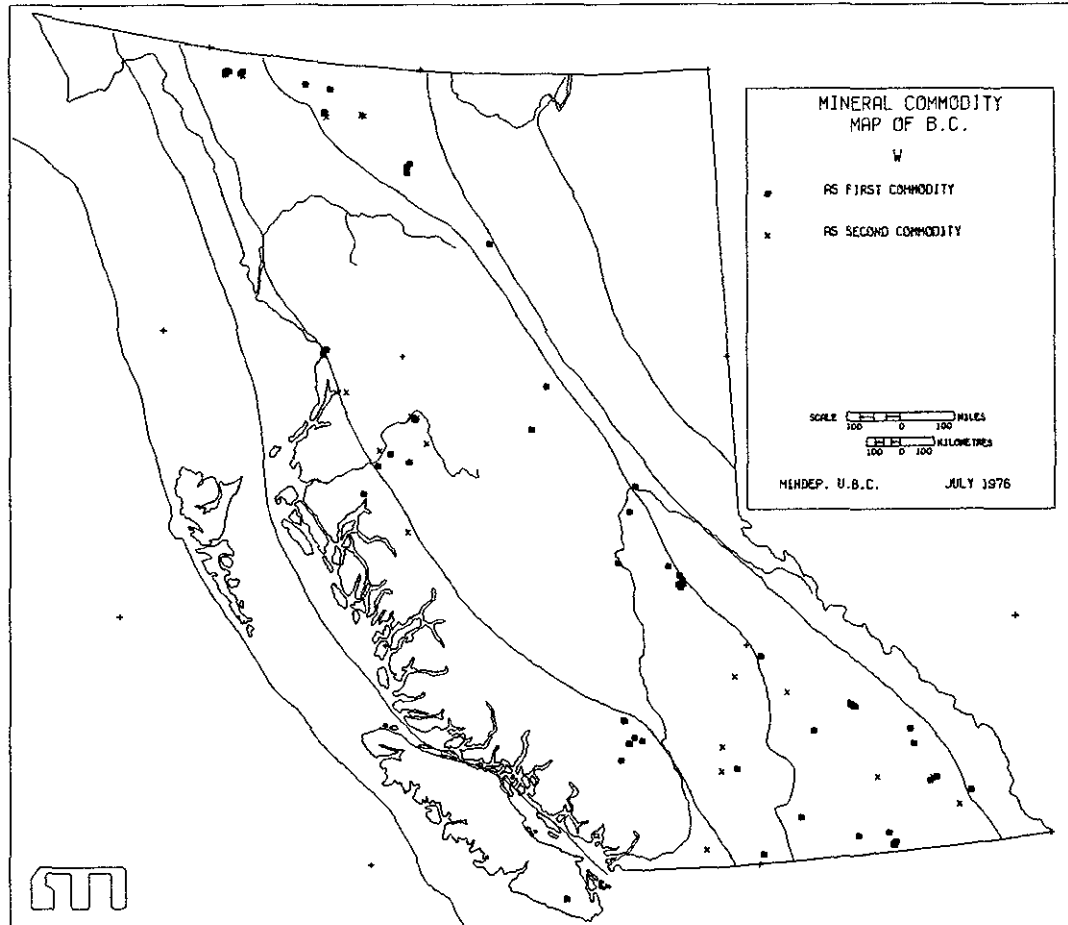
Map 22. Mineral commodity map – cobalt, all occurrences.



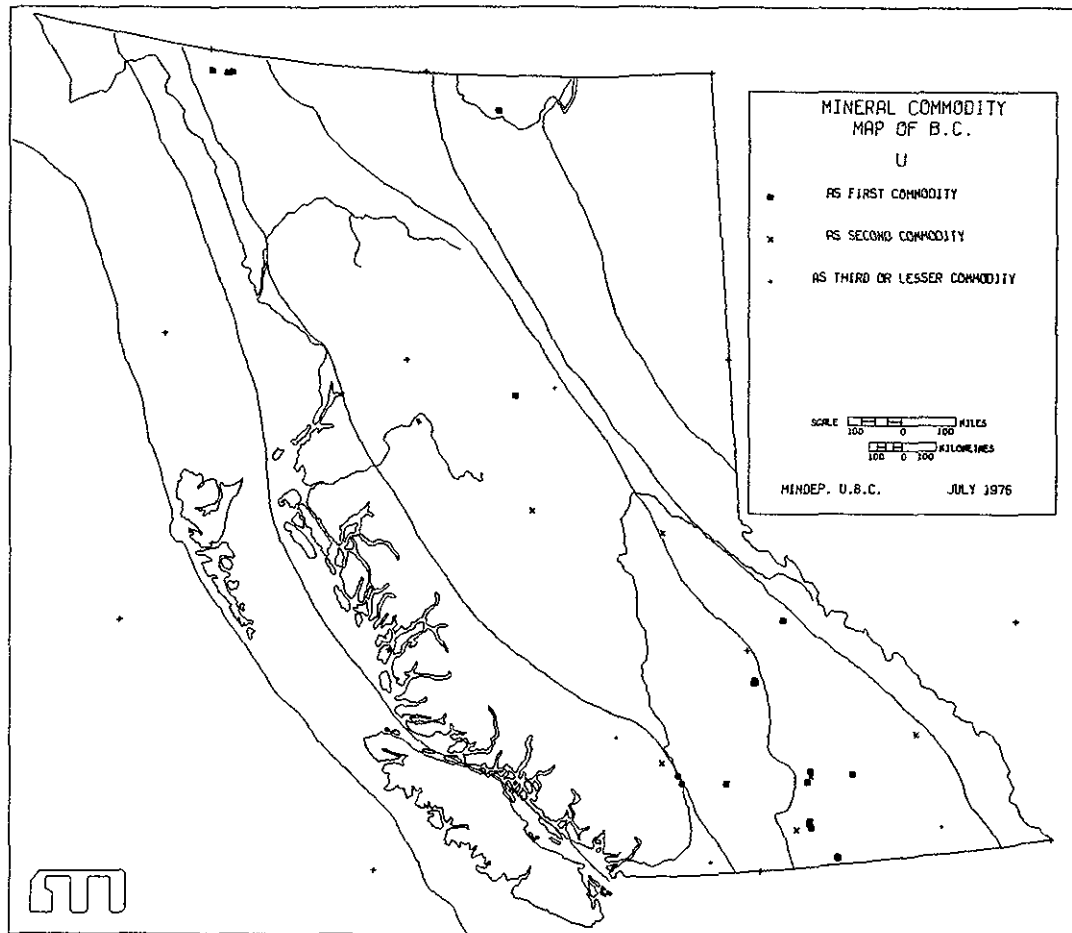
Map 23. Mineral commodity map — antimony as first and as second commodity.



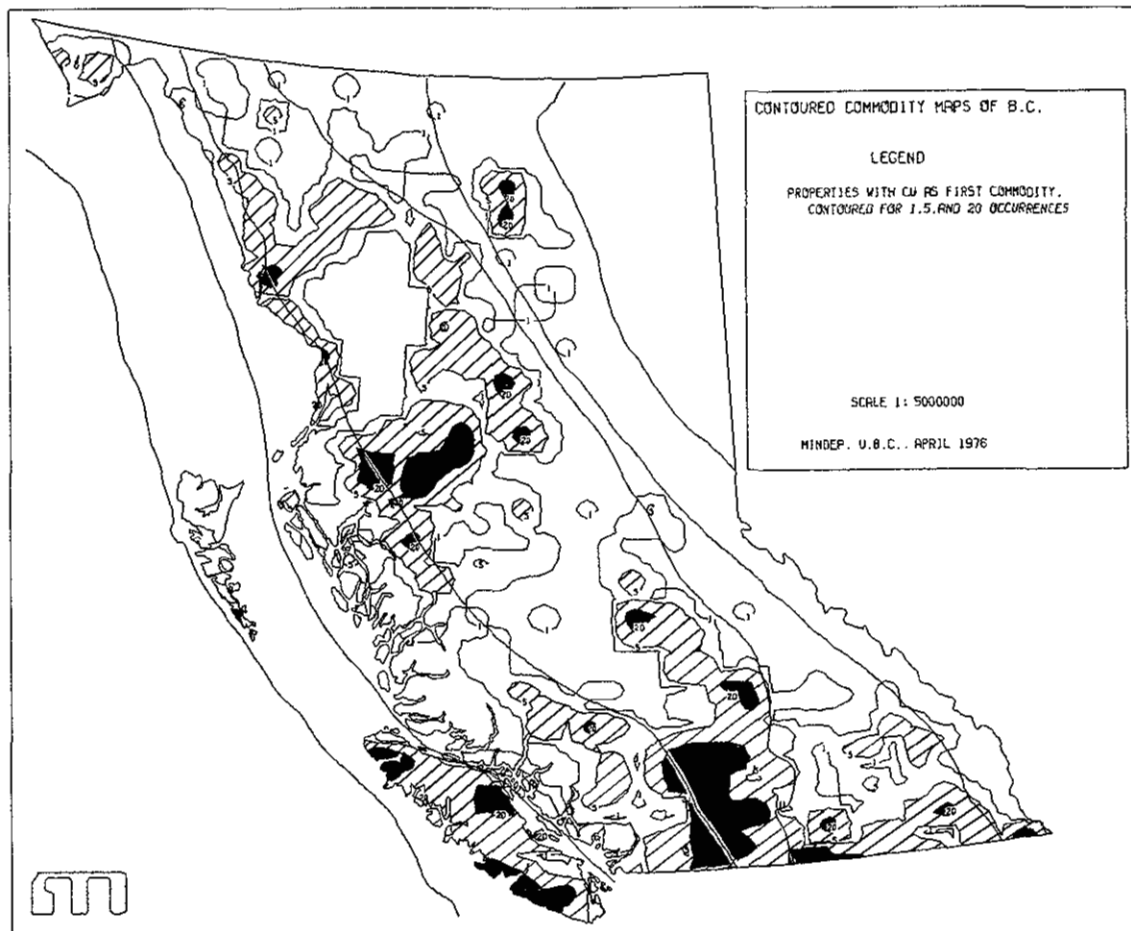
Map 24. Mineral commodity map — arsenic as first, second, third, or lesser commodity.



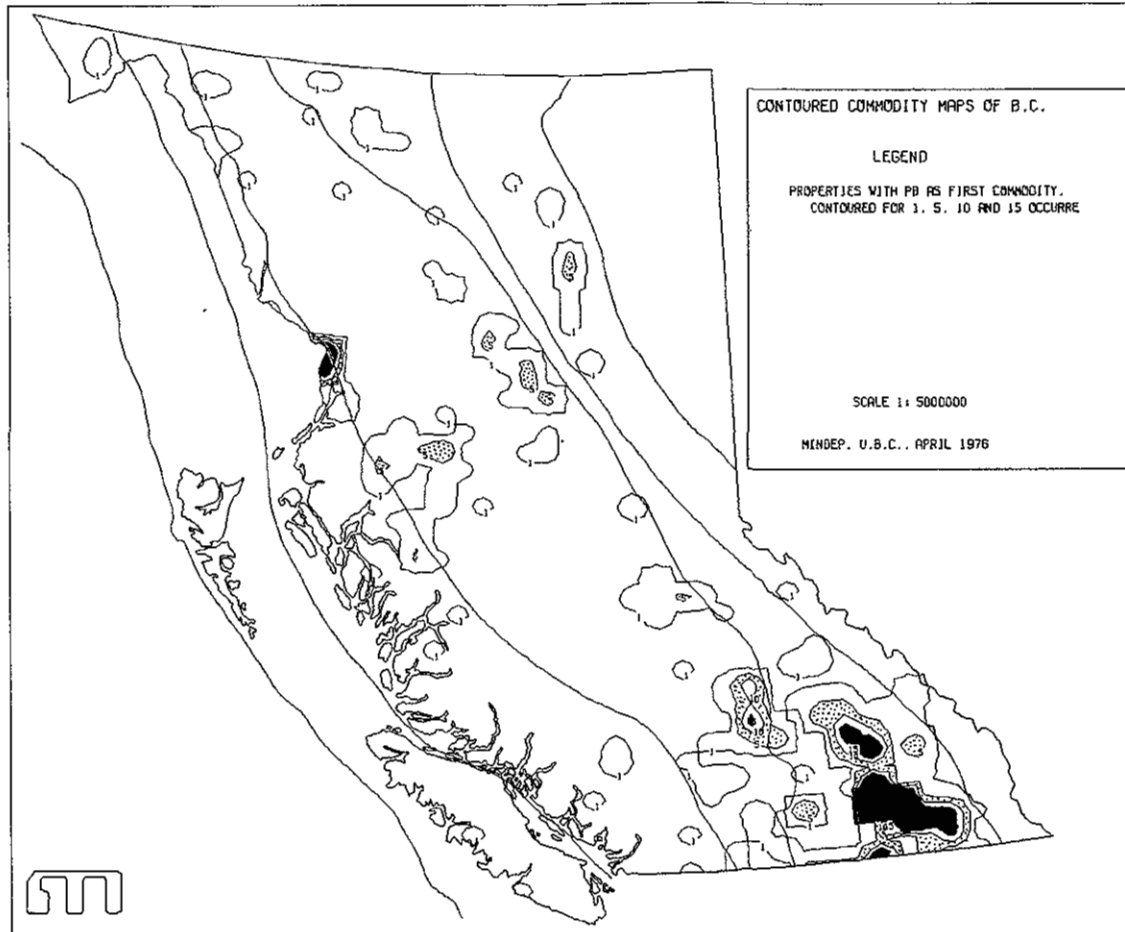
Map 26. Mineral commodity map — tungsten as first and as second commodity.



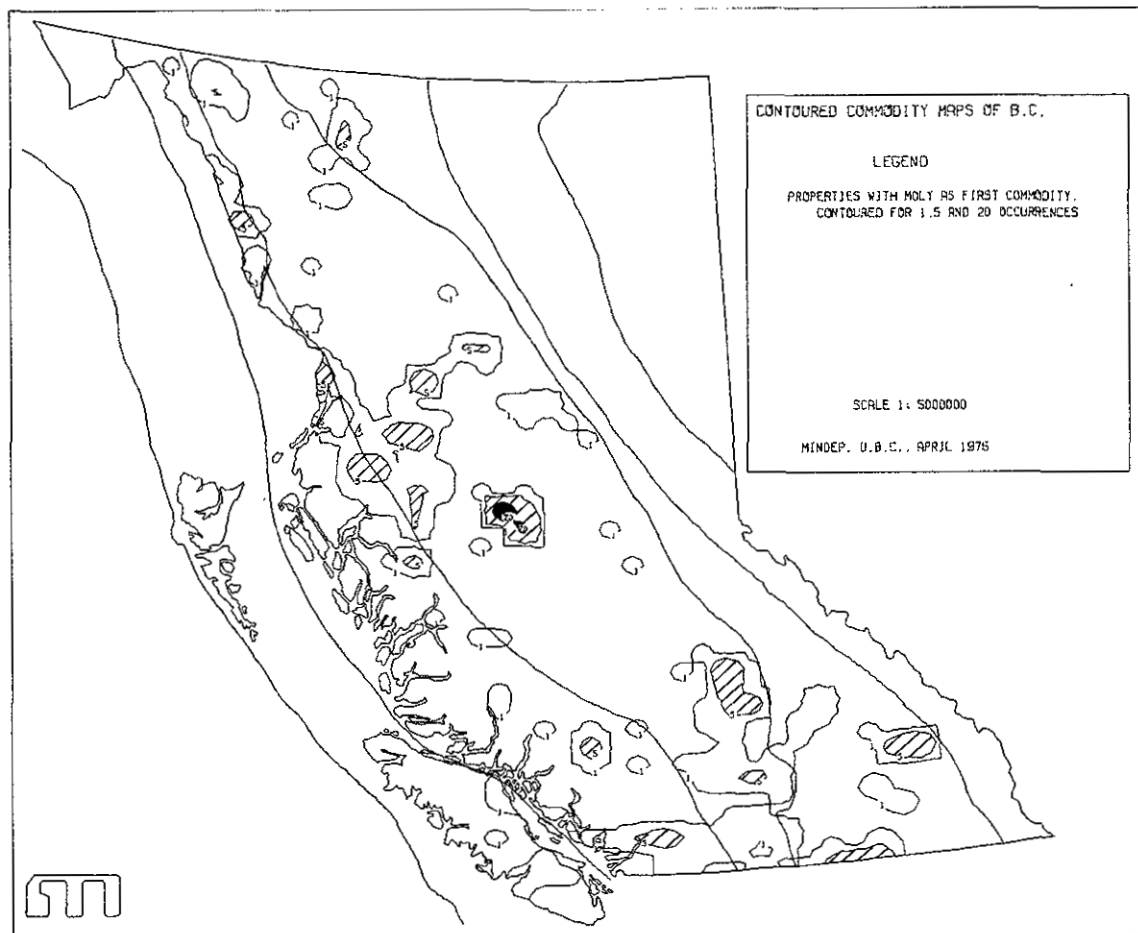
Map 27. Mineral commodity map – uranium as first, second, third, or lesser commodity.



Map 28. Contoured commodity map — copper as first commodity, contoured for 1, 5, and 20 occurrences.



Map 29. Contoured commodity map – lead as first commodity, contoured for 1, 5, 10, and 15 occurrences.



Map 30. Contoured commodity map – molybdenum as first commodity, contoured for 1, 5, and 20 occurrences.



APPENDIX

COMPUTER OUTPUT LISTS OF ALL OCCURRENCES

USED AS A BASIS OF THE MAPS

LISTED BY COMMODITY(IES) AND NTS SHEET

82E

Occurrence	Dkd 6	Montana (1.2640)	Wendy	Rex	Khedive Gp.
Occurrence	Dolphin	Moreen	Windfall	Rockland	King
Occurrence	Elk 4	Morrison	Winner	Royal Canadian	King
Aetna	Elk 7	Mother Lode (1.704)	Winnipeg (1.599)	Silver King	Kootenay-selkirk
Ah There	Elmore (1.972)	Mountain Chief (1.2393)	Wp - Cati	St. Louis (1.9357)	La Coulotte Ridge
Aldie	Ema (1.591)	Neillie	X	Sullivan	Lazy 19
Argo	Fap	Nikki	Yellow Jacket	Sunset (1.6563)	Lazy 32
Arlington	Ffc	Old Ironsides	Yellow Jacket	Tigar 1	Lin
Averill	Fife (1.1185s)	Opulence	1	Topaz	Lin
B.c. (1.882)	Fur 1 & 2	Oro Denoro (1.692)	82F	True Blue	Lin
B.v.p.k.	Fur 8	Pac	Abe Lincoln	United Copper	Lin
Bald Eagle	G-to	Packrat Group	Alfred	Victoria	Lin
Banner (1.1199)	Garnet	Papex	Anne	Welcome & Enterprise	Luke Group
Barbara	Gem (1.697)	Pass	Anne	Welcome & Enterprise	Mona # 1
Bat	Glad	Pathfinder (1.782)	Blue Peter	Whitefish	North Kootenay Pass Co.
Bay	Gloucester (1.2809)	Patricia	Bob	Zilor (1.1051)	Ominsca
Bear	Golconda	Pbe 31 And 32	Bracebridge	82G	Ramshorn
Bf, Hn	Gold Drop	Phoenix Mine	Burnt	Occurrence	Sage 6
Big Copper	Golden Eagle (1.1334)	Pilot - Uta	Central	Occurrence	Sage 9
Black Bear (1.2597s)	Great Hopes (1.602)	Pluto	City Of Spokane	Occurrence	Silver King
Blue Hawk	Grey Eagle	Poppy	Cliff	Occurrence	Simmons
Blue Jay	Greyhound	R. Bell	Copper Canyon	Occurrence	Sweet May
Bluebell	Homestake	Rawhide	Copper Queen	Occurrence	Sylvia
Bluebell	Homestead	Red Rock	Creston Hill	Occurrence	82G
Bluebell	Hop	Richmond (1.2918)	Dora	Occurrence	Top 12
Boot	Ike 14	Riff	Drum Lummon	Akamina	Top 27
Bs	Ike 22	Riverside	Dykes Option Gp.	Beth	Tri
Bubar	Iron Cap	Rohne Fr.	Elsie, Ann	Betty	Tri 30
Bullion	Iron Horse	Roy	Empire State	Big Bonanza	Tri 38
Bunker Hill (1.1609)	Ira Lenore (1.1262)	Sand	Eureka	Black Hills	Try Again
Cabin	Jj	Sappho	Evans	Blue Dragon	Wilda
Cache	Joe 5	Seattle (1.652)	Evening Star	Blue Grouse	Yankee Girl
Caledonia	Joe 7	Shell No.1	Faller	Burton	82J
Camp Hewitt 2	July Creek	Shell No.17	Giant, Midget	Cabin	Cher
Camp Hewitt 3	Keno (1.1319)	Sid	Good Hope	Commerce	Commerce
Capco	King Mine	Sil	High Peak	Commerce (zone D)	Commerce (zone H)
Captain Gordon	King Solomon (1.388)	Silver Coin	Homestake	Copper Belt	Coronado
Chukar, Quail	Kingfisher	Snowshoe	Humdinger & Hunkadora	Coronado	Dibble
City Of Paris (1.622)	Knob Hill	Stan	Hungry man	Eagle's Nest	Ehlinger Group, Golden Fleeca
Cu	Koprt	Standard (1.1463)	Iron Colt	Empire	Empire
Cobo	Lexicon (1.3303) (m-273)	Stemwinder, Montezuma	Iron Horse	Federal	Finley-leask
Collsen	Lexington (1.645)	Strawberry (1.1765)	Kirkup	Great Western	Green
Collax	Libra	Sun	Lord Roberts	Grey Copper	Ness
Copper Coin	Little Bertha (1.959)	Tam O'shanter (1.2405)	May-bee	Hornet	Northern Light
Copper No. 1	Loin	Tee	Mcpeak	Jennie	Option
Copper Queen	Lois Group	Tic Toc	Monarch	Jessie	Option
Croesus (1.866) (m-143)	Lost	Toney (1.1907)	Monday	Queen Victoria	Peanut
Crystal Copper	Lottie Fr.	Top	Mystery	Red Mountain	Queen Victoria
Curlew	Lucky John	Top	Ness		
Cyclops	Lynx, Late	Union (1.1022s)	North Light		
Dan	M.s.	Victoria	Option		
Dividend	May Alice	Volcano (1.1476)	Option		
Dkd 2	Monarch	War Bayle	Option		
Dkd 4			Peanut		
			Queen Victoria		
			Red Mountain		

CU as First Commodity

Eclipse	Quest	d3D	Copper King	92E	
Hidden Treasure	Ruby		Copper Prince	Access	
J	Sabre	Blue Ice (south-east Zone)	Crown	Bay	
Jersey	Swan		DC, RW	Esp 3	Charles Dickens
JK, Nico	Three Tramps	92B	Delphi	esp 6	Chris
New Zone Copper	Victor		DL	Geo	Chris
Paystone Gp.	Vimy	Anita	Dore 100	Hesquiat Lake	Coal Creek
Promistoria		bear Creek	Dore 153	Hesquiat Lake	Commodore
Rainy Day	82M	Becher Bay	Dore 162	Hesquiat 1-4	Copper King
Rusty Axe		Blue Bell	Dore 30	Indian Chief	Copper Mtn.-mt. Hankin
Sb	Occurrence	Copper Canyon	Dore 52	Jr	Copper Queen (1.40)
Showshoe Group	B And B	Cornucopia	Dore 97	K 18	Cornell
Sopper Horn	Bex	Dora And Mabel	Dore 99	Mn 1	Cyprus
Tacheel Group	Cc	Eagle	Flora	Mn 21	De Oar Gp.
Tatler And Phoenix Group	Cu	Finlay	Flora??	Nc	December
Tennessee	Cu	Hill Zone	Fraser	Nomash River	Domineer No.22
Tom 3	Ebl-rem	Ironmask	Gail	Oktwansh	Dy
Tonawanda	Esp	Jane	Gambler	Ormond #2 (1.354)	Zwpress
Vms 19,20	Ph	Jill	Gladys	Ormond #3 (1.353)	Faith Copper
Vms 9	Gabro	Key City	Happy John (1.606-08)	Pw, RW, JB	Florence
Warren Cr. Copper	woof-sue	King George (1.159)	Jan	Rafael Point	Forfarshire
	Gopher	King Solomon	Jd	Refuge Cove	gem Lake
82L	Grizzly	Kinkam	Klanawa & Canyon	Star Of The West	Good Hope (1.394)
A	Hail	Lenora & Tyee	Koros	Syd	Great Expectation
Ab 10	Harper	Margaret	Lella	Sydney	Gretna Green
Ab 9	Hilltop	North East Cu Zone	Lorry	Vannhall	Herd
Alty	Hilltop 9	Old Copper Mine	Loss		Hi
At	Iron Cap, Ok	Otter	Mal	92P	Hm
Bard	Joe, Art	Pauper	Marble Cove	Occurrence	Hm 28
Bear	Mf	Penton	Marg	Occurrence	Hm 32
Bisson Lake	Montgomery	Ralph (1.77)	Monitor	Occurrence	Horse Hump
Bluenose No.9	Naomi	Sally No.2	Nat, Nit, Lx	Occurrence	Independent
Bluenose 26	North Star (south Showing)	Scotch Group	Pan	Occurrence	
Brent	Nsp	Sirius	Panther	Occurrence	
Cb	Oro	T, 22	Peterson		Irisman Creek
Copper Chief	Pat	T, 22	Pogo	A North	Ivanhoe
Copper Cup	Pine	Tot, Run	Polly	A South	Jack
Copper Island	Ran	Victoria	Reko 3	Andy	Jo-jo
Copper King	rey	Viva	Ren	B,dede,en	Junbo
Copper Nugget	Renning	W.a.e.	Southern Cross	Bay Creek	Juneau (1.69)
Ef	rio	Westholme (1.54g)	Southern Cross	Beatrice	Ken
Ein	Rob	Willow Grouse	Sunloch	Bee	Kinypin
Elk	Ruth		T.b.	Bert	Kitchener (1.49)
Fly Hill	S Group	92C	Tadoqa	Big Bluff	Ld
Goodenough	Shushvap Snow	Occurrence	Tam 16	Big G	Little Billy
Iron Cap	Sitting Bull	Occurrence	Tanitin	Big G	Ll
Iron Mask	Snow	Occurrence	Val	Big Interior	Lone Cone No. 13
John Grouse	Standard	Occurrence	Viking	Blue Jay	Loyal
K	Vic	Ab	Wolf	Brint	Lynx (1.1660)
Keystone	Vm	Allies	Ww	Bruce 2	Macmillan
Klondyke	82N	Alpha-beta		Bruce 5	Marvot
Mm	Castledale	Anomaly		Buttles Bell	Mary
Nix, Corn	Haskins Creek	Avallin		Canadian	Mn 2
Ophir	Silver Bow	Blue Grouse		Cap Sheat	Mn 22
Pat		Bus		Cat	Moore
		Candy		Catface	Murex
				Cats Eye	Native Copper Showing
				Centennial	Nic

CU as First Commodity

Iulameen	Bethlehem Copper - White Zone	Curmo, S.S.	I.M., Satan	Lorna	Old Alameda # 16
Valley View	Bethsaida	D.M.	Ide	Lorna	Ole
Vancouver, Victoria	Betty Lou	Dab	Ind	Lornex	Ole-pat
Verde #3, New York	Bin, Cominco	Deb	Iron Mask	Lost Chord	Orphan Boy
Virginia	Bin, Phelps Dodge	Den	J	Louis	Outrider
Wel	Bj	Den 13,15	J - A	Louise	Outrider #26
What	Blu	Den 76	J.B. Dansay	Lucky Mike	P & B
Where 'a' (zone??)	Blue Jay, Bee	Dewey	Jac	Lucky Strike	P & L
Where 'D' (zone??)	Blueberry	Diana 2	Jan	Lucky Strike	Panther, Sarah
Whip	Bo, Lf	Don	Jay	Lucky Todd	Park
Wilmac 12	Bob #8	Dor	Jay #101	Lynn	Pat
Wilson	Bon, M.C.	Dora, Kay	Jay No.1	M.e.	Pavilion Gold
Wip,saw,pick	Bornite Ridge	Dot	Jay 8	Map	Pay
Wog	Joy, Chatko	Eagle	Jd	Mad Arab	Peacock Group
Yaa	Bruce	Ed	Jed	Mag	Pen
	Buck	Ell	Jeff, Jack	Maggie Mine	Pi
92I	Suda	Empire	Jericho	Maggie Mine	Pim
(showing)	Bag Irish Gossan	Eric	Jericho	Magma	Plug
(showing)	Burl	Etta, Peg, Juqs	Jhc	Malachite Hill	Plymouth Queen
(showing)		Evening Star	Jo	Man	Pod
(showing)		Eye	Joe-cat	Man 44	Porc
(showing)		Ezz	Joe, Bet	Marb 3	Porcupine
Ab		Fargo	Joker	Marb 72	Price
Aberdeen	Rx		Jordan	Matt	Pyrite
Acb	Ca		Joy	Maxine	Pyrite
Acc	Cap		Jua	Ed	Quartzite
Afton	Cal		Justice Gp.	Mer	Raf
Afton, Dominion	Canopus Group	fargo		Mickie Fr.	Ray, Opollo
Ayate	Caper, Cap	Farr Lake		Mike	Rain
Ajax(1.4710)	Cat 1	Piader		Mint	Rainbow
Al	Chalco	riddler, F.B.		Blia, Rob	Ralph
Al	Chalco	Fin, Luck			Red Hill
Alamo	Chance	Flr	K		Red, Luv
Alamo	Charmer	Flaq Elkroc, Tap	Kathleen		Rey
Am, Ide, Va	Chase	For	Ray 12		Rich
Ann #1	Chataway Lk.	Ford	Ken		
Anwvon Ur.	Chatrands	Frank 63	Key Mb	Molly B	
Arqo	Cherry 2	Frederick	Keystone	Moly	
Arh #17	Cherry 7	Gaza	King	Monte Carlo(1.4716)	
Ash, Cash	Cinderella	gb	King Solomon Dream	Moss #4	
ASKoa	Cliff	Geo	Kl	Mud	
Aye	Clm	Georgi	Kon	Nancy	Rickhill
A5, Sa	Coke	Gloria #1	Kr And K	Map	Bio
B	Cop	Glossy	Kr And K	Ma	Bio
B & B	Copper Hill	gnat # 2 Pr.	Lake	Ned	Riv
B.j.	Copper King	Goldplate	Laken	Nicola Lake	Rm
B.x.	Copper Prospect Near Copper C	Gray Mask	Lakeshore Deep Group	Nik	Rob, Oro
B, C	Copperado	Guernsey-jersey Group	Lakeview	Nim	Rocky
Bar	Copperado - Tm1	Hank 30	Larsen	No. 7 Claim	rod
Be	Copperado- P66	Hank 4	Last Chance	Noonday(1.2563)	Roger's
Bertha	Copperhead, Python	Hat	Id	Nord	Ron
Bethlehem Copper - East Jerse	Cow, Bx	Hc 3o	Led 31	North Oro	Royal
Bethlehem Copper - Huestis Zo	Cow, Bx	Highland	Led 74	Nye	Rusty
Bethlehem Copper - Iona Orado	Cowbird	Highmont	Les	J And P	Rws, Isy
Bethlehem Copper - Jersey Ore	Craigmont	Hit	Len 1 & 2	O.k.	Sye Gp.
Bethlehem Copper - Snowstora	Cris	Huestis, Dave	Les	Occurrence	Sa
Bethlehem Copper - South Simo	Cu 13	Huestis, Dave	Long Tree(1.833)	Oil, Gas, Say	Sage-hilltop
				Ox	Sahara Lee File
					Sallus

CU as First Commodity

Ben 37	Beaver Dam	Al	Axel	Deuce	Cap
Blue 33-36	Beer	Ant	Barb	Dominion	Cap, Tut, T
Bu	Beer	B	Bj, Jp, Barb	Fao	Chu
Cindy	C-soo	Dayshore	Conway	Gam	E, O
Ducharne	Chris	Bory	Copper Queen	Gq	Godot
Hon	Cp #17	Cariboo-beal	Em	Glittering Glory	H
Jay	Cp #34	Cleo	Gh	Ida	Ko
Lost Fiddle	Cp #53	Corey	Gibraltar East	Irene	L
Mo	Ec 60	Cs - En	Gm	Jam 7	Nat
Niut Mtn.	Ellen	Cz	Gr	Joe	Tat
Norfa 18	Fl	Dj, Golden Zone	Granite Lake	Kim	Tet
Norfa 20	Gh	Jo	H.d.	L & M	Wee Mcgregor
Pin	Hood	Fir Ridge	Ha	Len 45,54	Wt
Rum 2	IdS; Pot	Fly	Jan-summit	Lens 56,58	93G
Rum 66	Jan	Gus	Kate	Max	Cougar
Rusty	Jan	Ho	Manderfield	Min	G, Gg, Rd
Sg.	K	Hook	Mayday	Mk	Jo
Spokane 1702	L.k.	Hs	Mm	Mk (Circue Showing)	Loon
Tad	Lakeview	Jamie	Pollyanna	Mo	M
920	Mac-stan-skull	Joy	qb	Mt. Baptiste Occurrence	Stone Creek
	Mann Creek	Ke Ald Lo	Sunset (Gibraltar West)	Nanika Option	Taoor
	Newhykuiston Cr	Kid 77	Unnamed Vein	Ox Lake	Thunder
	Nod	Len	93C	Pam	Thunder
anc	Owen	Lo, Ke	Occurrence	Pintledanna	Wanda
Banner	Pat	Lynda	Occurrence	Pondosy	
Bjo	Pc-cp	Maziner	Occurrence	Rd	93H
BUR	Peach #1	Mary	Occurrence	Sea, Ti	
Buzzer	Peach #5	Maud	Occurrence	Ron 10	Dome
Copper	Peach No. 2	Mb	Occurrence	Ron 4	Hutton
Copper Mountain	Pit	Md	Occurrence	Ron 43	Sweetwater
Eggs	Pycu	Moffat	Occurrence	Ron 47	Trilobite
Empress	Ra	Pine	Occurrence	Ron 48	Van Winkle
Fish Lake	Red	Pine 5	Ada	Sipola	93I
Fish Lake (east)	Rip	Pine 9	Ca	Slide	
Gc	Rk	Red	Kf	Specular	Barbara Ellen
Grab	Rm	Rip	93D	Sural Pass	Copper Gulch
Hill	Ro	River 6	Bella Colla Chief	Sus	Wet, Mm
Mad daster	Shelly	Silver Boss	Bella Coolla	Tesla Mtn.	
Mike, Nat	Sheri	Sl	Boom	Tets	93J
Ml	Sheri 95>	Slide 289	Cc	Troitsa	Nick
Mm-canyon	Silver	Sue	Cure Copper	Troitsa	
Mm-westside	Silver Lake	Sue	Numas	Twin	93K
Mohawk	Skookum	Wet, Gavin	93E	Two Bear Hill	
Motherlode	So	Wiggins Creek	Occurrence	Wae	Occurrence
Phair	Ss-10	Wiggins Creek	Occurrence		Bl
Pm	Ss-8	Wood	Acc		Boo Mtn. (three Star)
Reward	Sunshine	93B	Berg		Diane
Rowbottom	Tim # 1	Occurrence	Boo 2		Han, Fir
Ruby-tc-paul	Tim #2,3	Occurrence	Boo 5		Hat
Spokane	Wash-shaw	Occurrence	Boy	93F	J
Teek	Wc	Acadian, Barney	Chalcopyrite		Jim, Green
X,y,z	Wc	Al, Bk, Ga, Jj	Con		Ko
Zen		Ann	Cs, Ns		
92P	93A	Arctic			
Aa>	Occurrence				

CU as First Commodity

Windy	Birch	Fred	Callison	Tucho	103C
94B	Bird	Garnet	Chopper 3	94M	Occurrence
W.L.	Boo	Goat	Chopper 5	Occurrence	Garnet
94C	Copper, Magnum	Harmon	Chopper 7	Ga & Liard	103F
Occurrence	Copper, Magnum	Kemess	Chopper 9	102I	Dev
Occurrence	Croy (shell)	Mack	Churchill	A.h.	Downie Is. Showing
Occurrence	D.S.	Malachite Mesa	Churchill Copper Mine	Aaa 48	Gudal
Occurrence	Dave	Pill	Cu Occurrence	Aaa 6	Mino
Occurrence	Day	Pillar	B	Earle	Northwester
Occurrence	Fred II	Pine	Doug Vein	Aird	Nrm
Occurrence	Fred 2	Pine	D81	C.s.#6	Security
Occurrence	Go	Put, Hump	Doo	Cape Scott Zone	103G
Occurrence	Grizzly-ork	Nat	Earle	Ed Creek	Occurrence
Occurrence	Group 1 And 2	Red Rock Mines Ltd.	Ed.	Kains	BAKS IS.
Occurrence	Horn	Rev, Rpa	Gang Gp.	Gataga 9,11	Copper Bay
Occurrence	Kaza Copper Ltd.	Riga #19	Gataga 19	Goat	Donaldson Creek
Betty	Kli	Riga #21	Gataga 9,11	Haris	Gibson Girl
Burden	Liz	Saunders 162	Goat	Hd	Great West
Chief Thomas	Nar	Shas	Haris	HO, John	Ixl
Chowika Creek	Narmot	Som	Jan	John	Kingkown Lake
Dave	Nokase A	Spartan	Joan	Keays	Wild Goose
Dove	Nikos	Spinel Creek	John	Kid	103H
Kan	Omaheca Fault	stone	Keays	Lady Luck	Occurrence
Matetlo Copper	Pac And Can	Theban	Lady Luck?	Lee	Occurrence
Nd	Pao	Tk	Lee	Lemjay	Occurrence
Oy	Pat	Vip 29	Lemjay	Mindl	Copper Coin
Pelly Creek	Pluto	Vip 7	Mindl	Nanny	Copper Island
Pika	quin	was	Neil	Neil	Copper Queen
Porphyry Creek	Red	West	P	P 12	Eagle Tree
Sarah	Rim	Xenos	P 12	Pink	Flo
Vega	Roy	Xmas	Pj	Pj	Gijger
94D	Soup	94F	Pj 100	Pj 105	Hope
Occurrence	Sun	Akie River	Pj 105	P75	Ivan
Occurrence	Sustut Copper	blue	P75	Rich	Lily
Occurrence	Thor	Fram 4-5	Rich	Strangward "a"	Lotus
Occurrence	Tie	wedge	Strangward "a"	Strangward "d"	Louscoone
Occurrence	Willow	94G	Toad	Toad	Lucky Seven
Ard	94E	Occurrence	Toro	Toro	Maple Leaf
Arjay	Al	Neil Jr.	Toro	Williams	Neal Ticket
Arp	Black	Tri	Williams	428	MoGoc
Arp	Bower Creek	94K	428	94L	Moresby Island
Asitka	Caira	Occurrence	94L	Occurrence	Nick's Sawings
Asitka	Castle Mtn.	Occurrence	Occurrence	Dall Lake	Oceanic
Asitka River	Chuck	Ann	Dall Lake	Denetiah Creek	Rasperry Cove
Asitka 19	Chukachida River	Ann	Denetiah Creek	Frog	Reco
Asitka 29	Claw	Billy Gp.	Frog	Gataga River	Sakai
Asitka 33	Cu #1 Showing	Bob	Gataga River		Skincuttle Island
Asitka 60	Dike	Bob			Swede
Asitka 8	Earl	Bob			Togo
B	Ed, Ehl, Belle	Book			Wireless
Bap	Ehl	Bronson			
Barn					103I
Bear					Occurrence
Bearnx					Occurrence
					Occurrence
					Occurrence
					Occurrence
					Occurrence

Occurrence	M And K (upper Showing)	Carpenter's Claims	104B	Copper Canyon	R.m.
A - Claim	M And M	Cd, Cu		Cos	Racicot Syndicate
A-b	Nacex	Copper Cliff	Occurrence	Devils Cluo	Run
Allard	Madden	Dan Patch	Occurrence	Dok	Scud Syndicate
Allard	Molybdenum Creek	David Copperfield	Occurrence	Dok	South Scud
Autman	Montana	Deadwood	Occurrence	Dok 1-4	Spartan Explorations
Avon	Northwest	Dominion	Occurrence	Dok 35	Spectrum
Banner Homestake	Northwest	Double Ed	Occurrence	Drapich	Stikine Copper
Beaver	Nugget	Eden (sax)		Empira Mercury Corp.	Stikine North
Belway And Rex	Nx Group	Fox	Ajax	Galore Creek	Su (Split Creek)
Banex	Nx Group	Golden Crest	Betty, Rw	Galore Creek-butte Deposit	Vb 12
Black Bear	Peerless	Hidden Creek	Bron	Galore Creek-junction Deposit	Vb 20
Bovnyes	Poor Boy Group	Homestake	Ca	Galore Creek-north Junction	Vb 5
Calandar Group	porph	Horseshoe	Cat 6	Galore Creek-south Butte Dep.	Wolf
Continental	Portland	Kiaskuca	Birk	Galore Creek-south 110 Creek	
Copper King	Ptarmigan	Knobhill	Don	Galore Creek-southwest Dep.	104H
Copper King	R&F	Knobhill	Grace	Galore Creek-west Fork Glac.	
Copper King AndOr Nugget	Ray	Maple Bay Gp. (could be say)	Granduc Mine	Galore Creek-west Rim Deposit	Occurrence
Copper Queen	Shenandoah	Monarch	Inel	Glenora And King	Chris
Cordillera	Silver Basin	Morning Star	Johannie Mtn.	Goat	Eulue Lake
Croesus	Silver Horde	Nabob	Ken	Goat	Joy 84
Df	Silver Mitts	Observer	Kim	Greg	Joy 87
Diadem	Single Hurst	Prince George	Mona	Groat Creek	Money
Diorite	Snow	Prince John	Mud Glacier	Gu	Pay
Emma	St.elmo	Red Bluff	Pins	Hawk-beaver	Red, Sus
Pour Aces	St.paul	Red Point	Pn	Horn Gp.	rose
Frisco	T	Red Reef	Ray	In	Sus
Galena	Toulon	Redwing	Ray	J.w.	Tsetogamus Creek
Globe	United St.croix	Roan Antelope	Shan	Jay, C	Windy
golconda	Wells	San Diego	South Leduc	Jo	
Gold Dome	Windfall	Seabee	Tasi	Joan And Md	104I
Grey Copper	Zya	Sunset	Ted, Ray	Jw #8	
Grotto		Sunshine	Twin Glacier	Limpoke	Agnes
Hal	103J	Tip Top	Unuk	Limpoke	Art
Hidden Group		Yanquard	Up	Limpoke (original)	Asb 8
Hughie	Occurrence	War Dance		Little Les	Scr, Ss
Hunter	Occurrence	Wildcat	104F	Lik	See Group
I.x.l.	Bald Mtn.	Zorka	Edson	Me, Kog	Bell
Imperial Group	Copper Coin	104A	Kitchener	Mess	Cap, Flat
Independence	Etta	A & T	Tap, Gay	Mess Creek	Cleo
Independence	Jitney	America's Girl		Middle Scud	CW
Jeannette		Bornite	104G	Missusjay And Conover Mtns.	COalt, Turn Pyrrhotite
Keanza, Valhalla		George Copper	Nabs	Nabs	Cop
Kellar	1030	London, Chicago	Nabs 13	Nabs 13	Crown
Keystone, Lucy O'neil		Lucky Frenchman	Nabs 21	Nabs 21	Dalvenia
La Libertad	Occurrence	Maybe	Al		Gb
Lady Luck # 1,2,3,4	Jjc	Mina	Arc	Nh	Hc
Lady Luck #7	Mj And Jl Montrose	Olga (hill 60)	Art	North Scud	Horn, Les
Little Wonder	Outsider Group	Red Cliff	Avon	Op	Jeff
Little Wonder		Red Cliff Extension	Ball Creek	Pepsi, Hicks	Joy
Lucky Jiz	103P	Red Top	Ban Nn	Ph	Joy 94
		Soutaern Cross	Sird, Sno	Poke	June, Stikine Hill Zone
		Todd	C	Pr	June, Stikine, (creek zone)
		Tyee	Callbreath	Quash Creek	Kac
Lucky Luke	Belle Vue		Cone Mtn.		Kay 19
M And K	Beverly		Conwest		Kay, Kim, King
	Bonanza				
	Boulder				

CU as First Commodity

Kutcho Cr.
Kutcho Cr.
Let, Tak
Louise
Mac
Mat
May
Moss
Nup
Pat
Rin
Sarb
Sphinx
Star
Tna
Winco
Wolf
*t

104J

Occurrence
Ace
Bud
Callison Copper
Crown
Disco
Disco 74, 76
G
Go, G, Cu
Grizzly # 4 And 13
Ho
Hu
Kid
Oh
Pat
Pet
Pet
Pinto
Vi
West Kakatsa

104K

Occurrence
Occurrence
Occurrence
Occurrence
S.W.M.
Bing
BS-j
Kay (lin)
Lc 2
Mad, Nut
Mc
Norm
Norm

Red Cap
Spec
Tess
Thorn
Thorn
Tito
Tun

104M

Occurrence
Anyox-granby?
Copper Island
Laverdiere
Mussen

104N

Boot
Hobo
Hub
Kim
Macdonald
Ni
Pat
Sloko Lake
Sunrise
Union

104O

Christmas Creek
Christmas Creek
Irv 101, 103
Irv 22, 26, 96
Pen
Top

104P

Occurrence
Occurrence
Ace
Al
Hidden Valley
Hope Prospect
Joem
Kirk
Mt. Haskin
Ram
Vines
Wildcat

114P

Occurrence

Occurrence
Occurrence
Occurrence
Occurrence
Occurrence
Occurrence
Occurrence
Occurrence
Occurrence
Occurrence
Ace
Alu
Bornite
C & E
Hibernian
Humbird 9
Kelsal #24
Kelsal #32
Maid Of Erin
Mildred
Pam
Sac
Sheep
Simcoe
State Of Montana

CU and MO Occurring

82E

Occurrence
Occurrence
Occurrence
B.v.p.k.
Bear
Bs
Collex
Copper No. 1
Dan
Deer
Elk 2 & 4
Elk 4
Elk 7
Fam
Garnet
Gil
Gloucester(1.2809)
Golconda
Iva Lenore (1.1262)
Jass
Joe 5
Joe 7
King Edward
Libra
Mo
Mother Lode(1.1508)
Old # 9
Pbe 68
Pilot - Uta
Riverside
Roy
Ruby(1.1333)
Sid
Sill
Silver King
Silver Star
Stan
Tam O'shanter(1.2405)
Tee
Tic Toc
Top
Wewa
Windfall
Wp - Cati
X
Yrd

82F

Consolidated St. Elmo
Coxey Mine
Deer Park
Gertrude
Hattie

Kirkup
Mammoth
Meadow View
Molly
Occurrence
Rainy Day(1.1399)
St. Elmo
St. Louis(1.935?)
Suprise

82K

S

82L

At
Bard
Bear
Bisson Lake
Jim
Kenallan
Kenallan
Mount Vernon
Mount Vernon
Sabre
Silver Star

82M

Bar-barriere
Cottonbelt
Ez, Elk
Robino

82N

Ex

92B

Kinkam
Robertson
Sirius

92C

Allies
Awallin
Conego
Dore 30
Gail
Pc
Polly

92E

Bay	Roy Gp.	92I	Ole-pat	Heart	C-soo
Esp 3	St. Paul	(showing)	P & B	Hep	Ec 60
Esp 6	Stave River Group	Kcb	Red Hill	Island Copper	Ellen
Sydney	Stave River Group	Agate		Keogh	Fl
Vanhall	Sundown	Ajs	92I	Lois	Hamilton Creek
	Thistle	Am, Ide, Vm	Rey	Nimkish Copper	Hood
92F	Venus	Ann #1	Rickhill	Nimkish Copper	Jub, Rex, Ax
Occurrence	*ar	Aye	Rod	Red Dog	Judy 11
Occurrence	Zel	B.x.	Sack	Rh	Judy 4
Occurrence	92H	Bethlehem Copper - Huestis Zo	Sallus	Road	Line
Occurrence		Bethlehem Copper - Iona Orebo	Spur, Tc	Sauce	Mac-stan-skull
Andy	A.s. (1.1585)	Bethlehem Copper - Jersey Ore	Tam	Scorpio	Mad-nod
Bee	Ash	Bethlehem Copper - Spud Lake	Toad	Sinker	Math
Blue Jay	Axe	Bethlehem Copper - White Zone	Vernon	Star	Ro
Cat	Brenda Mine	Bethsaida		Starr	Sands Creek
Catface	Copper King	Bug Irish Gossan	92J	Tent	Savona Gold Mine
Cyprus	Dd	Ches		Tie, Susan	Wl-teepee
Domineer	Dd	Cop	Arizona	92N	93A
Domineer No.22	Dote #1	Copperado - Tm1	Autumn	A And E	Dj, Golden Zone
Foremost Copper #3	Dote #15	Cris	Best	B.h.a.	Web, Gavin
Hetty Green	Empress	Cu 13	Chalco 12	Ben 28	
Hl	Forks	Curmo, S.s.	Chalco 5	Ben 37	93B
Jumbo	Good Hope #1	Diamond S	Copper Queen	Blue 33-36	
Little Billy	Gossan, Ra, Bud	Svening Star	Day 1	Bu	Gh
Ll	Hed	Fiddler, F.b.	Day 2	Ducharme	Gibraltar East
Lone Cone No. 13	Independence	Gaza	Elk	Jo	Gm
Mary	Ira, Ir	Gb	Fall	Norfa 18	Gr
Mic	Jeff No. 43	Gnat # 2 Fr.	Griswold	Norfa 20	Granite Lake
Noble	Jm	Gold Bug	London	Rua 2	H.d.
Ptarmigan	Jon	Highmont	Nichol	Rua 66	Ha
Pw, Rw, Jb	June	Huestis, Dave	Owl Creek "b" Zone	92O	Kate
Rex	Last Chance (1.574)	Ide	Owl Creek "c" Zone	Banner	Mh
Tex, Bob	Log	J - A	Salal Creek Moly (eo, R)	Bjb	Pollyanna
Tofino Nickel	Lucky Four (1.989)	J.b. Dansey	Salal Creek Moly (plug, Sal)	Bur	Sunset (Gibraltar West)
Tt	Mac	Jac	Ski-gm	Buzzer	93C
Velvet #13	Mammoth	Jay #101	Sno	Copper	Kf
Vent	Marn 16	Jericho	92K	Eggs	Mh
92G	Master Ace	Ken	Colossus	Fish Lake	93D
Andy	Meg	Key Nb	Condor	Had Master	Boom
Bank Of Vancouver	Nyrtle	Keystone	Deer	Mm-canyon	Numas
Clover	Nighthawk	Kimberly	Lea	Mm-vestside	Russ
Day	North Brenda	Kr And K	O.k.	Mohawk	
Day Group A	Pip	Led 31	R. Wapo	Pm	
High Hopes	Pip	Led 74	Red	Rowbottom	
How	Pipe	Les	92L	Top	93E
Kf	Rick	Lornex	Bay No. 21	X,y,z	Berg
London	Snow	M.e.	Bay No.56	Zen	Con
Lori	Snow	Maggie Mine	Berg	92P	Cs, Ss
Margaret	Ta	Maggie Mine	Bowerman	Ajs	Deuce
Mo	Totem Pole	Martel	Cu	Beaver Dam	Fab
Nab	Wel	Mint	Expo		Gam
Occurrence	What	Mot			
Red Jacket	Why	Nb			
	Wip,saw,pick	Ok			
	Wog	Ole			

CU and MO Occurring

Ice	Jim, Green	Haut	Croydon	103H	Dok 35
Ida	Ko	Hol	Porphyry Creek	Bute	Greg
Joe	Lorne	Hot	Ruby		Limpoke
Kim	Mo	Ice		103I	Limpoke (orig)
King	Radio Gold	Jan	94D		Llk
L & H	Silver Fox (1.4097)	Jan			Me, Kog
Lead Empire		King	Barn	Allard	Mess Creek
Len	93L	King	Bear	Allard	Nabs
Len 45,54		King	Bird	Belway and Rex	Quash Creek
Lens 56,58		Laura Bear	Dortatelle Creek	Benex	Run
Min	Occurrence	Mary	Horn	Canadian Swede	Spectrum
Mk	Allie	Molly	Klisyul (miller) creek	H, Kdl	Stikine Copper
Mk (cirque Showing)	Barr, Lybdenum	Mt	Marmot	Hal	
Mo	Big Onion	Niche	Notase B	Kit	104H
Mt. Baptiste Occurrence	Pog; Fly	Off	Quin	Kirimaat River	
Nanika Option	Glacier Gulch Molybdenum	Peak	Red	Lady Luck	Chris
Old Glory	Grubstake (far)	Red Rose	Ria	Lady Luck # 1,2,3,4	Sus
Ovp (Lake Showing)	Hope	Rob	Sun	Lady Luck #7	
Ox Lake	Jacob	Sal	Thor	Lucky Fortune	104I
Pam	Jan	Shel		Macex	
Pintledanne	King, Queen	Shel 19	94E	Molybdenum Creek	Bcr, Ss
Rd	Lava	Shel 7	Kewess	Phoenix	Cap, Flat
Rea, Tl	Lava	Sultana	Put, Hump	Ray	Horn, Les
Sibola	Lou	Suskwa	Riga #15	Zym	Joy
Surel	Mineral Hill	Victoria	Riga #21		Joyce
Surel Lake	Mineral Hill	Wolf	Spartan	103P	Let, Tak
Troitsa	Mo	7a		Ajax	May
Whit	Morice Mountain		94F	Lucky	Nup
Whit	P.g., B.l.	93N	Fox Pass		Rin
	Poplar	Bal		104A	104J
93F	Pro	Burn		Little Pat	Disco
	Reiseter	Camp	103A		Hu
C	Rock (loljuh)	Chuchi	Hidden Lake	104B	Jim, Duck
C, Z	Sat	Col		Occurrence	Mack
Cap	Star, Klondike	Dorel	103B	Occurrence	Shield
Cap, Tut, T	Tachi	Dorothy	Nick's Showings	Occurrence	
Chu	Van, Wvk	duckling	Yakulanias	Betty	104K
E, O	93M	Flame		Big Showing	Occurrence
Godot	(showing)	Frankie	103C	Bron	Bing
H	(showing)	Hi	Garnet	Ca	Es-j
Ko	Ace	Hogam Mines		Inel	Elaine
L	Atna	Jean	103F	Mud Glacier	Kay (lin)
Nat	Atna	Jw		Ted, Ray	Lc 2
Owl - Nit	Ben	Kw		Unuk	Mc
Tet	Big Thing	Lin	104F		Norm
Wt	Blue Lake	Lsd	Tap, Gay		Norm
93G	Blunt	Rondah		104G	Pat
Burn	Brian, add	Sah; Nik			Red Cap
	Carr	Smoke	103G		Tess
93J	Cumo, Ike	Sooner	Gibson Girl		Thorn
	Daisy	St.	Great West		Tun
Occurrence	Daisy	Top	Marble		
	Dorothy	94C	Wild Goose	Ball Creek	104H
93K	Pog			Bird, Sno	
	French				

CU and MO Occurring

CU As First Commodity, ZN Second

Laverdiere	82E	Christina	93L	Cat 6
Molly, Paye		Cleveland		Incl
104N	Bluebell	Dal No. 1	Cassiar Crown	Ray
	Bluebell	Day	Cassiar Crown	Shan
Atlin Ruffner	Camp Hewitt 3	H.i.	Del, Lou	
Boot	Cyclops	Indian River Copper	Princess	104I
Candy	82L	London		
Hobo		Mckinnon Group	93M	Ant.
Hub	Elk	Movicar		Bcr, Ss
Luck	Iron Mask	Roy	Cap	Jeff
Mi, Fire	Keystone	92H	Phi	Sarb
Pit				
Thor	82M	Occurrence	94D	104P
Tungsten		Ascot		
104O	Goof-sue	Fab	Occurrence	Vines
	Montgomery	Jessie	Asitka River	
Pen	S Group	Luv	103B	114P
	Shushwap Snow	Mag Group		
104P	Standard	Red Star	Raspberry Cove	Occurrence
	Vic	Sf.		Kelsal #24
Contact	92B	Tan	103P	Pam
Eloise		92J		
Joem	Jane		Security	
Mt. Haskin	W.a.e.	Fitzsimmons	103G	
Silver Queen		Margery		
114P	92C	92K	Gibson Girl	
	Anomaly		103H	
Alu	Mal	Big Andy		
Bornite	92E	Big G.	Ecstall	
Simcoe		Linda 14	Hov	
	Mn 1	92L	103I	
	Nomash River			
	Ormond #3 (l. 353)	Blue Ox	Copper Queen	
	Vanhall	Frances	103J	
	92F	Hazel		
		Mor	Occurrence	
	Big G	Nimkish Copper	Etta	
	Bruce 5	Rainier	103P	
	Charles Dickens	92P		
	Jo-jo	Silver	Beverly	
	Lynx (l. 1660)		Fox	
	Mn 2	93E	104A	
	Paramount			
	Sentinel	Lens 56,58	Southern Cross	
	Skarn	Tets	104B	
	92G	93K		
	Occurrence		Betty	
	Britannia	Han, Fir	Bron	
	Cambrian Chieftan	Sonya-hectoria		

ZN As First Commodity, CU Second

CU as First Commodity, MO Occurring

82E	103B	82E	Dore 30	A.m. (1.1585)	Highmont
Van	Hawks Nest	Occurrence	Gail	Axe	Huestis, Dave
92B	103H	Occurrence	Polly	Brenda Mine	Ide
Pallside	Packsack	Occurrence	92E	Copper King	J - A
Lenora And Tyee		B.v.p.k.	Dd	Dd	J.b. Dansey
92E	103P	Bear	Bay	Dote #1	Jac
Brown Jug	I.x.l.	Bs	Esp 3	Dote #15	Jay #101
Shannon	104G	Collex	Esp 6	Empress	Jericho
92H	Devils Elbow	Copper No. 1	Sydney	Gossan, Ra, Bud	Ken
Billican Group	114P	Dan	Vanhall	Hed	Key Mb
Metastaffer	Occurrence	Elk 4	92F	Independence	Keystone
Rainy		Elk 7		Ira, Ir	Kimberly
Sunset		Garnet		Jeff No. 43	Kr And K
92I		Gloucester (1.2809)	Occurrence	Jon	Led 31
Pairview		Golconda	Andy	June	Led 74
Sunshine 1		Iva Lenore (1.1262)	Bee	Lucky Four (1.989)	Les
Polisan Cr.		Joe 5	Cat	Mac	Lornex
92J		Joe 7	Catface	Myrtle	M.e.
Arizona		Libra	Cyprus	Nighthawk	Maggie Mine
92L		Pilot - Uta	Domineer No.22	North Brenda	Maggie Mine
A, B, X		Riverside	Hi	Pip	Mint
Caledonia		Roy	Jumbo	Pip	Nb
Dia		Sid	Little Billy	Pipe	Ok
Haw		Sil	Ll	Rick	Ole
Mo		Star	Lone Cone No. 13	Snow	Ole-pat
Red Rock		Tam O'shanter (1.2405)	Mary	Wel	P & B
93L		Tee	Nic	What	Red Hill
Black Fox		Tic Toc	Ptarmigan	Wip,saw,pick	Rey
Hagas		Top	Pw, Rw, Jb	Woq	Rickhill
Iron King		Windfall	Tex, Bob	92I	Rod
Mamie		Wp - Cati	Tt	(showing)	Sallus
Mayflower		X	Vent	Acb	Spur, Tc
Rainstora		82F	92G	Agate	Tax
94D		Kirkup	Andy	Am, Ide, Ya	Toad
Willow Creek		St. Louis (1.935?)	Bank Of Vancouver	Ann #1	92J
94E		Day	Clover	Aye	Autumn
Vip 30		82L	At	B.x.	Copper Queen
			Group A	Bethlehem Copper - Huestis Zo	Elk
			High Hopes	Bethlehem Copper - Iona Orebo	Griswold
			Kf	Bethlehem Copper - Jersey Ore	London
			London	Bethlehem Copper - White Zone	Nichol
			Lori	Bethsaida	Owl Creek "b" Zone
			Margaret	Bug Irish Gossan	Owl Creek "c" Zone
			Nab	Cop	Ski-gu
			Occurrence	Copperado - Ta1	Sno
			Roy Gp.	Cris	92K
			Sundown	Cu 13	Colossus
			Venus	Curno, S.s.	Condor
			War	Evening Star	Deer
			Zel	Fiddler, F.b.	Lem
			92H	Gaza	O.k.
			Allies	Gb	R. Wapo
			Avallin	Gnat # 2 Fr.	

CU as First Commodity, NO Occurring

Red	X,y,z	Lens 56,58	Ace	Bird	104B
92L	Zen	Min	Ben	Horn	
Bay No. 21	92P	Nk	Blunt	Marrot	Occurrence
Bay No.56	Beaver Dam	Nk (cirque Showing)	Brian, Add	Quin	Betty
Berg	C-soo	Mo	Carr	Red	Bron
Cu	Zc 60	Mt. Baptiste Occurrence	Daisy	Ria	CA
Expo	Ellen	Nanika Option	Dorothy	Sun	Inel
Hcart	F1	Ovp (lake Showing)	French	Thor	Mud Glacier
Hep	Hood	Ox Lake	Haut		Ted, Ray
Island Copper	Mac-stan-skull	Pam	Hol	94E	Unuk
Keogh	Ro	Pintledanne	Hot		
Lois	93A	rd	Jan	Keess	104F
Nimkish Copper		Rea, T1	Jan	put, Huap	
Nimkish Copper		Sibola	King	Riga #21	Tap, Gay
Red Dog	Dj, Golden Zone	Troitsa	King	Spartan	104G
Rh	Wet, Gavin	Whit	Molly		
Road	93B	93F	Mt	103A	
Sauce	Gh	C	Niche	Hidden Lake	Ball Creek
Scorpio	Cap	C, Z	Off		Bird, Sno
Sinker	Gibraltar East	Cap	Shel 19	103B	ook 35
Star	Gm	Cap, Tut, T	Shel 7		Greg
Starr	GR	Chu	Suskva	Nick's Showings	Limpoks
Text	Granite Lake	E, O	Wolf		Limpoke (original)
Tie, Susan	H.d.	Godot	7a	103C	Llk
92N	Ha	H	93M	Garnet	Me, Kog
A And E	Kate	Ko	Bal		Mess Creek
Ben 28	Ma	L	Camp	103F	Mabs
Ben 37	Pollyanna	Nat	Col		Quash Creek
Blue 33-36	Sunset (gibraltar West)	Tet	Dorel	Bev	Run
Bu	93C	Wt	Dorthy	Mico	Spectrum
Ducharne		93K	Duckling		Stikine Copper
Mo	Kf	Jin, Green	Flame	103G	104H
Norfa 18	93D	Ko	Frankie		Chris
Norfa 20	Boom	Radio Gold	Hal	Gibson Girl	Sus
Fum 2	Nuaas	93L	Hi	great West	
Run 66	93E	Allie	Hogaw Mines	Wild Goose	104I
920	Berq	Big Onion	Jean		
Banner	Con	Jacob	Jv	103H	Bcr, Ss
Bjb	CS, Ns	Jan	Kv		Cap, Flat
Bur	Deuce	Lava	Lin	Bute	Horn, Les
Buzzer	Fab	Lou	Lsd	103I	Joy
Copper	Gae	Mo	Rondah		Let, Tak
Eggs	Ida	Poplar	Sah; Nik	Allard	May
Fish Lake	Joe	Pro	St.	Allard	Nup
Mad Master	Kim	Rock (loljuh)	Top	Belvay And Rex	Rin
Ma-canyon	L. & H	Sat	94C	Benex	104J
Ma-westside	Len	Star, Klondike		hal	
Mohawk	Len 45,54	Tachi	Porphyry Creek	Lady Luck # 1,2,3,4	Disco
Pm		93M	94D	Lady Luck #7	Hu
Rowbottom			Barn	Macex	104K
			Bear	Molybdenum Creek	
				Ray	Occurrence
				Zym	

CU as First Commodity, MO Occurring

MO as First Commodity

Bing
 BS-1
 Kay (lin)
 Lc 2
 Mc
 Nora
 Nora
 Red Cap
 Tess
 Thorn
 Tun
 104K
 Laverdiere
 104N
 Boot
 Hobo
 Hub
 Pit
 104O
 Pen
 104P
 Joem
 Mt. Haskin
 114P
 Alu
 Bornite
 Siacoe

82E
 Decano
 Deer
 Elk 2 & 4
 Fan
 Gil
 Jass
 King Edward
 Mo
 Pbe 64
 Pbe 66
 Pbe 68
 Pbe 71 And 73
 Ruby (1.1333)
 Silver King
 Sue
 Wewa
 Yrd
 82F
 Consolidated St. Elmo
 Coxe Mine
 Curlett
 Zel
 Fresnu
 Gertrude
 Giant
 Gold King
 Hattie
 Mammoth
 Meadows
 Molly
 Otter
 Rainy Day (1.1399)
 St. Elmo
 Surprise
 Trish
 82K
 Occurrence
 Annette 27
 Annette 28
 Annette 29
 Annette 30
 Annette 31
 Annette 47
 Annette 55
 Bev 1
 Bev 5
 Cu
 Fern And Evelyn
 Ice 6
 Ice 9

S
 Slide 28
 Victim
 Zen
 82L
 Burn
 Eagle
 Jim
 Kenallan
 Kenallan
 Lh, Gunn
 Mount Vernon
 Nova
 Tick
 82M
 Bar-barriere
 Birmoly
 Foghorn Creek Moly
 H
 Hardpan
 Knox
 Rip
 Robino
 Stirling
 Tim
 Val
 92C
 Pc
 Sr
 92F
 Occurrence
 Occurrence
 Occurrence
 Blue Jay
 Dry Gulch
 Dry Gulch
 Hetty Green
 Mo, Sv, Kerr
 Molly
 Molly J
 Rex
 Tofino Molybdenite
 Velvet #1J
 92G
 Cox
 Expo
 How
 Mo
 Mo
 Perketts Creek
 Stave River Group
 Thistle
 92H
 (showing)
 Ash
 Blubel
 Dominion
 Empress
 Glen
 Ja
 Ja, Sec
 Last Chance (1.574)
 Log
 Lori
 Marn 16
 Mary Jane
 Meg
 Meg
 Meg
 Meg
 Nickel Plate
 Ta
 Why
 92I
 Ajs
 Beresford
 Bethlehem Copper - Spud Lake
 Brite Star
 Dal, fad
 Huestis, Dave
 Hot
 Hsg
 Rose
 Sack
 92J
 Best
 Day 1
 Day 2
 Fall
 Index
 Salal Creek Moly (ee, R)
 Salal Creek Moly (plug, Sal)
 Yalakow, Ridge
 92K

Arrow (1.1381)
 Cortes Island Molybdenite
 Green Sea Bay
 Ottawa-central
 92N
 B.h.a.
 Blue 32
 Vb
 92O
 Top
 92P
 Occurrence
 Ajs
 Aku "b"
 Aku A
 Anticlinax A
 Anticlinax B
 Anticlinax C
 Cl; Ox
 Cs
 Jub, Rex, Ax
 Judy 11
 Judy 4
 Line
 Mad-nod
 Math
 Roe
 Polly Ann
 Sands Creek
 Sl
 Vid 4
 Wl-teepee
 93A
 Boss Mountain-breccia Ore
 Boss Mountain-fracture Ore
 Boss Mountain-southwest Veins
 Hendrix Lake
 Moss Mountain-highgrade Vein
 93C
 Ma
 Tel
 93D
 Russ

MO as First Commodity

93E	Lorne	Showing	Luncheon Creek	Stan	Occurrence
Am	Lot; Lad	Tenas	Lynda, Snc, Help		Canadian Girl
Cob	Mjm		Molybdenite	104G	Dome
Ice	Mo	93N	Nar		Eloise
Jumbo	Poop, End		Nar	Occurrence	Pi, Joan
King	Rob	A,b	Phoenix	Ben	Ray 6
Old Glory	Ron	Blackjack	Tallis Creek	Decker Creek	S.g.e.
Sib	S	Blackjack	White Creek	Flood Glacier	Star
Whit	Stella	Blackjack		Llc Group	Vines Lake
	93L	Burn	103P		
93F		Sooner		104I	
Abe	Occurrence	93O	Ajax		
Bat	Occurrence		Alice	Bartle	
Chelaslie Lake	Occurrence	Fortune's Eye	Bc Molyb. Mine	Joyce	
Enco 11-3 Fr.	Occurrence	Jack	Butte	Owl	
Gel	Barr, Lybdenum		Hoan Creek		104J
Jen - Beaver	Poq; Fly	94C	Jackie-mos2		
Jen 10	Glacier Gulch Molybdenum		Kay	Jim, Duck	
Jen 4	Hope	Occurrence	Lucky	Mack	
Jen 7	King, Queen	Occurrence	Mayflower	Shield	
Linda 10	Lamprey	Grouse	Mogul		
Linda 5	Lava	Slide	Mollie B		104K
Mint	Lucky Ship		Molly B		
Molly 8-enco 2 Fr.	Mineral Hill	94D	Molly B	Occurrence	
Molly 9	Mineral Hill		Mollyaac	Occurrence	
Nithi	Morice Mountain	Davie Creek Showing	Moly	Occurrence	
Owl - Nit	P.g., B.l.	Dortatelle Creek	Moose	Occurrence	
Tan	Serb Creek	Kliyul(miller)creek	Mos2-jackie	Blaine	
	93M	Motase B	Mt. Priestly	Lc1	
93G			Nimble	Nan	
Black Cat	(showing)	94E	Penny Creek	Pat	
Ice	(showing)	Riga #15	R.h.s.		104H
	(showing)		Roundy Creek		
93K	(showing)	103B	Snafu	Occurrence	
Al Fr.	Atna		Tha	Molly, Paye	
Ann	Atna	Yakulanans	Valley		104N
Bat	Big Thing		Wayne		
Bell	Blue Lake	103G		104A	Occurrence
Ben; Pat	Cuao, Ike	Blue Jay	Fitzgerald		Candy
Chess	Daisy	Lor		Hobo 1&3	Hobo 7
Cm	Fog		104B	Luck	
Co	Goathead	103I		Ni, Fire	
Deer	Ice		Occurrence	Norsk	
Elk	Laura Bear	B.x.	Occurrence	Pip	Steamboat Mtn.
Port	Mary	Big Joe	Big Showing	Sun	
Fran	Peak	Bradle Bane			
Grub	Rob	Eureka	104F		
Ice	Sal	H, Kdl		104O	
K.s.	Shel	Hart	Occurrence		
Ken	Showing	Kit	Occurrence	Occurrence	
Kid	Showing	Kitimat River	Balsom	Swan	
Ling Lake	Showing	Kokanee	No Occurrence		
			Nab		
			Sap	104P	

MO as Second Commodity

82B	92C	Dd	Jay #101	Keogh	Wet, Gavin
B.v.p.k.	Allies	Dote #1	Jericho	Lois	93B
Bear	Dore 30	Dote #15	Ken	Niapkish Copper	
Bs	Gail	Express	Key Mb	Red Dog	
Collex	Polly	Forks	Kr And K	Sh	Gh
Copper No. 1		Gossan, Ra, Bud	Led 74	Road	Gibraltar East
Dan	92E	Hed	Les	Sauce	Ga
Elk 4		Ira, Ir	Lornex	Scorpio	Gr
Elk 7	Bay	Jeff No. 43	M.e.	Star	Granite Lake
Garnet	Esp 3	Jon	Maggie Mine	Starr	H.d.
Golconda	Esp 6	June	Maggie Mine	Tent	Ha
Iva Lenore (1.1262)	Sydney	Lucky Four (1.989)	Martel	Tie, Susan	Kate
Joe 5		Mac	Mint		Mm
Joe 7	92F	Myrtle	Nb	92N	Pollyanna
Libra		Nighthawk	Ole	A And E	Sunset (gibraltar West)
Pilot - Uta	Andy	North Brenda	Ole-pat	Ben 28	
Riverside	Bee	Pip	P & B	Ben 37	93C
Roy	Catface	Pip	Rey	Blue 33-36	Kf
Sid	Cyprus	Pipe	Rickhill	Bu	
Sil	Domineer No.22	Rick	Rod	Ducharne	93D
Stan	Hi	Snow	Sallus	Mo	Boom
Tam O'shanter (1.2405)	Jumbo	Wel	Spur, Tc	Norfa 18	Numas
Tee	Ll	What	Tam	Norfa 20	
Tic Toc	Mary	Whip,saw,pick	Toad	Rum 2	93E
Top	Nic	Wog		Rua 66	
Windfall	Ptarmigan	92I	92J		Berg
Wp - Cati	Pw, Rw, Jb	(showing)	Autumn	92O	Con
X	Tex, .8ob	lcb	Copper Queen	Banner	CS, Ns
82F	Tt	Agate	Elk	Bjb	Pab
Kirkup	Vent	Am, Ide, Vm	Lubra	Bur	Gam
Molly	92G	Ann #1	Nichol	Copper	Ida
Mountain View		Aye	Owl Creek "b" Zone	Eggs	Joe
Novelty	Andy	B.x.	Owl Creek "c" Zone	Mad Master	Kim
Sapple's Molybdenite	Clover	Bethlehem Copper - Huestis Zo	Ski-ga	Mw-canyon	L & H
St. Louis (1.935?)	Group A	Bethlehem Copper - Iona Orebo	Sno	Mw-vestside	Len
82K	High Hopes	Bethlehem Copper - Jersey Ore	92K	Mohawk	Len 45,54
Bee	Kf	Bethlehem Copper - White Zone	Condor	Pm	Min
	Lori	Bethsaida	Deer	Rowbottom	Mk
	Margaret	Bug Irish Gossan	Lea	X,y,z	Mk (cirque Showing)
	Nab	Cop	O.k.	Zen	Mo
	Occurrence	Copperado - Tm1	R. Wapo	92P	Mt. Baptiste Occurrence
	Roy Gp.	Cris	Red	Beaver Dam	Nanika Option
	Sundown	Cu 13	92L	C-sco	Ovp (lake Showing)
	Venus	Curao, S.s.	Bay No. 21	Ellen	Ox Lake
	War	Fiddler, F.b.	Bay No.56	Pi	Pam
	Zel	Gaza	Berg	Hood	Pintledanne
82L	92H	Gb	Cu	Mac-stan-skull	Rd
At		Gnat # 2 Fr.	Expo	Ro	Rea, Tl
Bard	A.m. (1.1585)	Highmont	Hear	93A	Sibola
Bear	Axe	Huestis, Dave	Hep	Dj, Golden Zone	Surel
Bisson Lake	Brenda Mine	Ide	Island Copper		Troitsa
Sabre	Copper King	J - A			Whit
92B	Dd	J.b. Dansey			93F
Kinkam		Jac			
Sirius					

C
C, Z
Cap
Cap, Tut, T
Chu
E, O
Godot
H
Ko
L
Nat
Tet
Wt
93G
Burn
93K
Jim, Green
Ko
Radio Gold
93L
Allie
Big Onion
Jacob
Jan
Lou
Mo
Poplar
Pro
Rock (loljuh)
Sat
Star, Klondike
Tachi
93H
Ace
Ben
Blunt
Brian, Add
Carr
Daisy
Dorothy
French
Haut
Hol
Hor
Jan
Jan
King
King

Molly
Mt
Niche
Off
Shel 19
Shel 7
Suskwa
Wolf
7a
93K
Bal
Caap
Chuchi
Col
Dorel
Dorothy
Duckling
Flane
Frankie
Hal
Hi
Hogam Mines
Jean
Jv
Kv
Lin
Lsd
Rondah
San; Nik
St.
Top
94C
Porphyry Creek
94D
Jarn
Bear
Bird
Horn
Quin
Red
Rin
Sun
Thor
94E
Kewess
Put, Hump
Riga #21
Spartan

103B
Nick's Showings
103C
Garnet
103P
Bev
Mino
103G
Great West
103H
Bute
103I
Allard
Allard
Benex
Hal
Lady Luck # 1,2,3,4
Lady Luck #7
Macek
Molybdenum Creek
Ray
104B
Occurrence
Ca
Mud Glacier
Ted, Ray
Unuk
104G
Ball Creek
Bird, Sno
Dok 35
Greg
Limpoke
Limpoke (original)
Me, Kog
Wabs
Quasa Creek
Run
Spectrum
Stikine Copper

104H
Sus
104I
Cap, Flat
Horn, Les
Joy
Let, Tak
May
Mup
Rin
104J
Disco
Hu
104K
Occurrence
Bing
BS-j
Kay (lin)
Mc
Norm
Norm
Red Cap
Tess
Thorn
Tun
104M
Laverdiere
104N
Boot
Hobo
Hub
Pit
Whi
104O
Pen
114P
Alu
Bornite

822
Deer
Eik 2 & 4
Fan
Gill
Jass
King Edward
Mo
Pbe 68
Ruby (1.1333)
Silver King
Wewa
Yrd
82P
Consolidated St. Elmo
Coxey Mine
Gertrude
Hattie
Mammoth
Molly
Rainy Day (1.1399)
St. Elmo
Suprise
82K
S
82L
Jim
Kenallan
Kenallan
Mount Vernon
82M
Bar-barriere
Robino
92C
Pc
92P
Occurrence
Occurrence
Blue Jay
Betty Green
Rex
Velvet #13

92G
How
Mo
Stave River Group
Taistle
92H
Ash
Ja
Last Chance (1.574)
Log
Marn 16
Meq
Ta
Why
92I
Ajs
Bethlehem Copper - Spu
Mot
Sack
92J
Best
Day 1
Day 2
Fall
Salal Creek Moly (ee,
Salal Creek Moly (plug)
92N
B.h.a.
92O
Top
92P
Ajs
Jub, Rex, Ax
Judy 11
Judy 4
Line
Mad-nod
Math
Sands Creek
W1-tsepee
93C

MO as First Commodity, CU Occurring

Ma	Burn Sooner	Candy Luck Ni, Fire
93D	94D	104P
Russ	Dortavella Creek Kliyu(miller)creek Motase B	Eloise
93E	94E	
Ice King Old Glory Whit	Riga #15	
93F	103B	
Owl - Nit	Yakulanas	
93K	103I	
Lorne Mo	H, Kdl Kit Kitimat River Phoenix	
93L	103P	
Occurrence Barr, Lybdenum Pog; Fly Glacier Gulch Molybdenum Hope King, Queen Lava Mineral Hill Mineral Hill Morice Mountain P.g., B.l.	Ajax Lucky	
93M	104B	
(showing) (showing) Atna Atna Big Thang Blue Lake Cumo, Ik Daisy Fog Ice Laura Bear Mary Peak Rob Sal Shel	Occurrence Occurrence Big Showing	
93N	104I	
	Joyce	
	104J	
	Jim, Duck Mack Shield	
	104K	
	Elaine Pat	
	104M	
	Molly, Faye	
	104N	

PB as First Commodity

82E	Alma Mater Alma (1.1039) Amandy (1.2795) Au Camp Hewitt B Dictator E International (1.2873) Lanzion Manitou (1.1753) Okanagan Potosi, Location 6 Roderick Dhu (1.598) Scandie Silver Spot, Location 12 Silver Spot, Location 13 Silver Spot, Location 9 Spotted Horse (1.887)	Comfort Conductor Copper King Corinth Cotnoir-fors Craw Curley, Noonday Daisy Bell Daisy Group Dan Howe Delaware Gp. Democrat Dictator Dixie Humber, Minnesota Dominion Double B Douglas Bud Early Bird Early Bird Ed Eden & Crescent Elkhorn Flin
82F	Occurrence Adams Alice Alice Mine Amazon American Boy Annex Ayesha B And R Banker Bell Belle Aire Beringeria Big Ben Birdie L. Black Bear (1.10783) Black Diamond & Little Phil Blackburn, Wallace Blue Bell Bluebird Boadicea Boss Fr. Buckeye California, Clipper Canadian Carbonet #2 Cariboo Carnation Chambers, Shady Chicago Chicago Cinderella Colonial	82P Fourth Of July Fourth Of July, Texas Freddie Lee Glengarry Gold Basin Gold Cure Gold-galena, Eagle Bank Hartney Hb Hector & Danira Highland Highlander Hilltop Sitka Hilo #3 Hilo #4 Hilo 4 Hinkley Home Rule Hotshot Howard Index Iron Cap Ivanhoe, Elgin Jack Pot Jackpot Jackpot Main Jewel Keno Kid

King	Silver Band	Jim # 6	J.C.	Occurrence	Tan 24
Kok	Silver Boy	Jim #4	Kootenay Belle	Acacia	
Kok	Silver Cup(1.6507)	Jim, Cat	Maq	Agate	92F
Kootenay Chief	Silver Glance	Jolly-molly	Maggie May	Art	
Kootenay Florence	Silver Reef	Joy	Mike	Big Ben #2	Bear 7
Lakeshore Gp.	Silver Ridge	Kent	Mineral King	Chidgrin	
Laurier	Silverite	Leah	Motherlode	Cottonbelt	92G
Leader	Silversmith	M.j.p.	Nellie Group	Donnamore	
Les-ann	Slocan King	Motherlode	Ohio	Elmoor	Standard
Liberty	Slocan Sovereign	Paradise (1. 4341)	Paradise (1. 4341)	Elva-sonja	
Maestro	Snow King	Pedro	Puzzle Group	Elk	92H
Majestic, Unexpected	Speculator	Reno	Pre	Fortuna #1	
Manitoba	Spokane & Trinket	Rio Tinto	Rose Group	Fortuna #2	Occurrence
Marion	Star	Rio (1.2093)	Scout	It (t Zone)	Ly, Ford, Snow, Dora
Martin	Stenwinder	Society Girl	Shelly Carolle	It (t Zone)	Dwl,star,bob
Mc	Storm King	Stoney	Silver Chief	Kelly's	Prince
Mc	Sullivan	Sullivan	Silver Giant Mine	Keystone	Top
Mohawk	Sullivan Mine	Tit For Tat	Slocan Boy	Kinbasket	92I
Mountain Chief	Sun	82K		Kunigunde	
Mountain Scenery, Mountain Ch	Sunshine	Occurrence		Kuno	Ches
Nameless	Sutcliffe	Amato Ruby	82K	Last Chance	Coronation
Nevada	Talmor	Barclay	St.elmo	Lead King	Ding Gp.
New Jerusalem	Tam O'Shanter	Beverly Mine	St.joe	Little Slide	L. 5124
Nicolet	Tiger	Big Showing	Sure Thing	Mafalda	Old Corona # 1
Noah	Tommy And Colleen Group	Black Bear	Tamarak	Mogillyray Group	Old Evelyn
Noble Five	Trade Dollar	Black Prince	Texas(1.4889)	Miller's Prospect	Raven
Noble 3	Tungsten	Blackburn	Triby Group	Red Top	Shuffy North
Noranda	Two Star	Blue Bell	Vera	Shamrock	
	Union	Blue Jay	Vera Group	Silver Shield	92J
82F	United	Bluebird	Vas 21	Speedwell	
	United Verde	Broadview	voyageur		Occurrence
	Vigilant	California	Whistler Fr.		Gray Rock
North Star Mine		Canadian	White Quail		Silver Bell
Northern Belle	82F	Connore	Yellowjacket		Wonder
Number One		Contact			
Omega	Vulcan	Daffodil Group			92K
Oregon, Jan	Vulture	Davie Group			
Otto	Wakefield	Doc	82L		Hag
Palmita	Wakefield	Dublin Queen	Annis (main Showing)		
Panorama #1	Warhorse	Duncan	Annis 5		92P
Panorama #3	Warren	Easy M	Annis 5,11		
Para	Whitehope	Ek	Annis 8		Allies
Pontiac	Wilcox	Ellsmere	Chaput		Empire-bluebird
Py, P	Wintrop	Perry No.2(1.3668)	Helen, S.b.		Fr
Queen Bess	Wonderful	Fog	Helen, S.b.		Queen Bess
Rainbow		Glenside	Metal Crast		
Read, Tenderfoot	82G	Glooscap	Mosquito King		93A
Red Bird		Great Northern	Shuswap		
Rome & Valley	Arena, Reno	Great Western Group	Shukie		Gorrie - Cornish Ledges
Royal Crown	B.and V.	Gringo			Gorrie - Plateau D'or
Ruth-hope	Big Chief	Hecla	82M		Hl, Zl
Salmo Consolidated	Black Bear & Mabel	Homestake Group	Occurrence		Joy
Sapphire, Minneapolis	Campsall	Imperial And Empire	Occurrence		Sf
Sarah Gp.	Pors Property	Index			Shaw
Shadow	Helq	International			Sil
Shady Fr.	Jim # 16				
Shenango					

PB as First Commodity

Vic	Rainbow	94G	Monday Group	104N
93B	Silver Queen	Be Plateau	No Name	Dundee
Ab, XL, Ano	Winninyik Hill	Cay	Silver Bell	Petty
Cousin Jack	93M	Faith	Silver King And Eagle	Surprise
93D	Black Prince	Kei	Sunbeam	104O
Occurrence	Higgins	Lynda	Three Mile	104O
Smitley River	Lone Star	Rd, Dev, June	Wimy Ridge	Occurrence
93E	Mag	Rust	Washington	Berg
Occurrence	93N	94K	104A	Sandy
Occurrence	Occurrence	Bob & Oscar	Barite Gold Mines	104P
Captain	Occurrence	Ctv 14	Docia	Occurrence
Chikamin Gp.	Occurrence	Ctv 7	Galena Farm	Carlick
Smerald	Occurrence	Dog	Goldie	Mt. Haskin
Lead Empire	Asp	94L	Independence	Rose
P.c.	Biddy	West Gp.	Kansas	Vale
Three Bears 1-8	Lost Creek	103H	LLS	114P
93H	Osi	Occurrence	Lucky Jim	Humbird 31
Cosalite	Pb, Ag Occurrence	103I	Mammoth	Mansfield Mountain
Moonlight	Sheila	Dardanelle	Montreal	Tarr
Nelson Creek	Vernon	Hercules	Mountain Boy	
93J	Wit	Kendall Creek	Old Chum	
Occurrence	94B	Lead King	Old Chum	
Samson	Brin	Patmore	Palmy	
93K	Poco North	Providence	Portland, Ibex	
Gamble	Poco South	Zymoetz	Victoria	
Tezzeron Lake	Robb Lake	103J	104B	
Trembleur Lake	94C	Occurrence	Border	
93L	Occurrence	103O	Boulder Creek	
Occurrence	Occurrence	Big Mike Group	Cantu	
Occurrence	Burn	Howard	Craig River	
Occurrence	Childhood Dream	103P	Extenuate	
Occurrence	Gwynn	Ajax	Indian Mine	
Occurrence	Molly	Black Bear	International	
Occurrence	Mount Lay	Blue Ribbon	Mineral Basin	
Occurrence	Rain	Casey	Montana Fractions	
Occurrence	Regent	Chicago	Payroll	
Occurrence	Swannell	Cook And Dobsons Claim	Riverside	
Occurrence	Tutizzi Lake	Copper Creek	Silver Basin	
Ascot	Weber	Dollar Bill	Silver Coin	
Cup,delta?	94E	George E	104I	
Debenture	Attycelley	Little Wonder	A-1	
Neepawa	Gord 18		104K	
	Gord 9		Occurrence	
	Har		Occurrence	
	Saunders		Inklin	
	Thutade 4		King Salmon Creek	
	Thutade 5		King Salmon Mtn.	
			Prospect	
			Yellow Bluff	

82E	Rocco Plata	Canada Belle	Lakeview	Richmond-eureka	Nord
Occurrence	Sailor	Catherine	Last Chance	Riverside	Park Group
Occurrence	Sally	Celtic Queen	Leadville	Rose Marie	Railway Mine Group
Occurrence		Center Star	Let Her Go Gallagher	Shaerock	Skylark
Occurrence	82E	Christina, Vergil	Lily B	Silver Bear	St. Eugene Mine
Occurrence		Clyde	Little Tim	Silver Bell	St. Iresa
Banner (L. 1199)	Sand	Comstock	Liz B	Silver Bell	
Bathfield Silver Lode	Silver Spot, Location 11	Comstock	Loachd	Silver Coin	82J
Beaver	Smith	Comstock (L. 1814)	Lucky Boy	Silver Dollar	
Bounty	Standard Fr.	Comstock, Virginia	Lucky Boy (L. 9188)	Silver Hill	Lucien
Bounty	Sunnyside (L. 2879) (m.l. 401)	Cork-province	Madison	Silver Hoard	
Burnt Basin (L. 1136)	Tiger	Coronation	Maamoth	Silver 1	82K
Buster	Torres	Crow-fledgling	Melody	Silver 6	
Caledonia	Union (L. 1022s)	Crown	Mercury	Sixteen To One	Abbot
Camp Hewitt 12	W.s.	Cub, Molly	Mercury	Skyline	Ace
Camp Hewitt 2	Waterloo	Dalhousie	Metallie	Slocan Prince	Adr
Cascade (L. 5000)	Waterloo	Dayton	Mill Point	Smuggler	Alma
Castor Fr.	Waterloo No. 3	Dewey	Minnie Ha Ha	Snowstorm	Alpha
Combination (L. 1458)	Wellington	Dorothy	Nolly Gibson	Standard	Alpha Group
Commonwealth (L. 1029)		Dunise	Nontezuma	Star	Amato Ruby, J.g.
Crown Point	82F	Ehor	Mountain Con	Storm King	Amato Ruby, J.g. Duncan # 3 Z
Director #5	Ajax	Echo, Graphic	Mystery	Sumit	American
Duncan	Alamo	Emily Edith	Nature Boy	Sunset	Antoine
Eva Bell	Alfred		Neepawa, Royal	Sunset	Argenta
Fanny Joe (L. 729s)	Alice	82F	No. One	Surprise No. 2	Atlas
Fur 1 & 2	Alice S.	Empire	Noonday	Tamarack	B.C. And Tilbury
Fur 8	Almeda	Enterprise	Nor	Tamarak, Laurier	Badshot
Gold Hill	Alpha	Evans	82F	Union	Bald Eagle
Halifax (L. 3042)	Alpha, Magog	Evening, Jennie		Utica	Banner
Highland Belle Mine	Altoona	Fergus	North Wind	V-day, Victory	Bannockburn
Honestake Fr.	Anna	Firebrand	Northern Light	Van Roi	Beaver
Hop	Apex	Fisher Maiden	Oakland		Bennison Group
Imperial	Argenta	Galena Para	Old Timer	82F	Best
Iron Horse	Arlington	General Grant	Olive A	Victor	Best
Jimmy	Aspen	Golden Eagle	Ontario #2	Victoria	Beulah And Honestake
Jo Dandy	Aurea	Goodenough	Ore Hill	Victoria	Big Five
Kelly	Baltimore	Granite King	Oro	Violat	Black Diamond
Killarney	Barefoot	Great Dane	Ottawa	W.d.	Black Diamond
King Mine	Belt	Great Western	Oxide	Welcome & Enterprise	Black Diamond
Kittie (L. 1748)	Bismark	Greenhorn	Pete Creek	Welcome & Enterprise	Black Prince
Kokomo Fr.	Black Fox	Grey Copper	Pico	Westmont, Eastmont	Black Warrior
Lakevale	Black Rock North	Hamilton	Piedmont	Wair Good Hope	Bonton
Lakeview	Black Rock South	Hampson	Porcupine	Zilior (L. 1051)	Caledonia
Lightning Peak, Location 19	Blackcock	Happy Medium	R.e. Lee		Canadian Boy
Lightning Peak, Location 20	Blackmore	Harris	Radio		Canadian Girl
May	Bob	Helen	Radio	82G	Carbonate Hill
Moqui (L. 2857)	Bob, Iron Mask	Hudson Bay	Radio		Charleston
Montana (L. 2640)	Bondholder	Hubolt	Red Eagle	Aurora	Copper Queen
Morning	Boomerang	Idaho	Red Rock	Black Hills	Craig
Mother Lode (L. 1508)	Bosun	Jennie Lind	Redress	Burt	Crescent
Nikki	Broster	Jersey	Reeves Macdonald Mine, Point	Camrian	Crown King
Nodaway	Buck Fr.	Johnsby	Reeves Macdonald Prospect	Guidon Gp.	Crown Point
Pass	Buffalo	Kalispell	Reeves Macdonald, O'Donell	Jessie	Cuba
Rambler Fr.	California	Kid 3	Reeves-macdonald Mine	Kootenay King	Dardanelles
Rattler (L. 1265)	Calumet And Hecla	Krao	Revenue	Kootenay-selkirk	Dary Group
			Richmond	Lead	Death On The Trail, Little T

PB as Second Commodity

Delphine	Lost Cup	Senorita	Blackjack Group	Ruth	92E
Doherty	Lucky Boy	Shakespeare	Blue Hawk	Silver King	
Dominion	Lucky Boy(1.5423)	Shamrock	Brent	Silver Mineral	Occurrence
Duncan Mine	Mabel Group	Shannon	Bright Star	Smuggler(1.5387)	Rafael Point
Duncan No.1 Zone	Mabel R	Sharon	Copper Cup	Snow	
Emerald Hill	Maq; Bruce	Silver Basin	Dawn	Tinkirk	92F
Ethel Group	Maggie May	Silver Bell	Faith	To	
Eureka	Magnet	Silver Belt	Golden West, Deer	Tom	Occurrence
Evelyn	Maamoth	Silver Cup	Goodenough	Twin Mountain	Bear 6,8
Excise	Maple, Silver King	Silver Key	Helen, S.B.	Vic 8, 21	Corona
Fidelity	Maverick	Silver Plate	Iron Pot		Cream 1,3
Francis Jewell	May Bee	Silver Queen And Silver King	King	82N	Ferguson(1.1587)
Free Coinage	Metlakhtla	Silver Tray	Kingfisher		Golden Eagle(1.198)
Prisco	Metropolitan	Silver Spray	Lost Treasure		M.t.
	Millie Mack	Sitting Bull(1.4097)	May		NutCracker
82K	Mohbs	Soho	McPhail		Starlight
	Mohican	Southern Cross	Mitchell & Cochrane Gp.	Agnes	Suprise
	Mollie Mac	Spider	Mount Ida	Annie	
Galena(1.593)		Spyglass	Mount Vernon	Bluebell	92G
Gertrude	82K	St. Anthony	Ok	Covercapae	
Glengary	Monitor	St. Patrick	Onyx	Crystal And Wonderful	
Gold Bug	Moonshine L.1881	St. Keverne(1.2642)	Payroll	Dunvegan	92G
Great Western(1.548)	Morning		Peerless	Elizabeth(1.2785)	Dandy
Grotto	Morning Star	82K	Rich	Frenchman Creek	Hawk Creek
H.y.m.	Moscow	St. Lewis	Royal	Haw Creek	Lynn Creek Zinc
Hart	Mountain Boy	Star	Silver King	Herringback	
Hercules	Nertie L	Steele	Silver King	Ixl	82H
Hi-lo	Nil Desperandum	Sunset	Silver Star	Jumbo	Occurrence
Hidden Treasure	Northern Bell*	Superior	Sugar Loaf	King Solomon	Occurrence
Horn Group	Ocean(1.1723)	Surprise	Sunset	Laurier	Agie
Hot Punch(1.5100)	Old Gold	Surprise		Nugget	Amanda
Hunter And Trapper	Outlet, Outcrop	Swede Group		Sanguar	Arany
Trene	Parrshoro	Syenite Bluff	82M	Scotia (1.2784)	Blue Stone
Iron Cap(1.5347)	Paymaster	Tacumseh	Occurrence	Seward	Bluebell(1.132)
Isle	Payne(1.499)	Thunderbird Mines	A And E	Silver Glance	Cindy
Issac	Peoria	Towser	Ok	Waterloo	Cousin Jack
Ixl Group	Poorman	True Fissure (1.1097)	East Lehai		Dry Creek
Jersey	Ptarmigan	Vimy Ridge	Foghorn	83D	El Paso Gp.
Jo-Jo	Rad	Vns 1	Glaz	Bend(Canyon Zone)	Elkhorn
Jumbo	Rambler	Vns 2	Gopher	Blue Ice(east Zone)	Eureka(1.1210)
Jumbo Group	Rambler	Vns 23	Hail	Grizzley	Five Fissures
Kat	Raven	Wagner Group	Harper	War Colt #1	Heatite
Kitsap	Red	Washington	Iron Cap, Ok	Yellowhead	Tim
Kootenay Belle	Red Ledge	Wellington	Joe, Art		Indiana
Kootenay Chief	Redmac	White Cat	June	92B	Laverna, Cap
Kootenay Queen	Relief	Whitewater	King Fissure	Robertson	Little Lottie(1.1190)
Lakeside, Awato Ruby	Revenue	Wigwam	King Tut	Scotch Group	Mob
Lancaster	Ritchie Group	Winona(1.10061)	Leenac-boomac	Tot, Rna	Morning
Laura J. And Ward	Royal Group	Yornoc	Mastadon	Westhloo (1.54q)	Morning Star(1.131)
Lavina Group	Ruffled Grouse	Yuill	Mastadon North		Morning Star(1.131)
Lead Queen	Ruth-vermont		Mc	92C	North Star
Lead Star	Sal A	82L	Mike, Marge		Queen Bess
Lexington	Sal B	Admiral	Minnesota Girl	Flora??	Rainbow
Lincoln	Sal C	Big Ledge	Naomi	Koros	Renfrew Gp.
Linson View	Sandy		North Star(North Showing)	Pogo	Rio Grande
Lisa, A			Pine	Tag 16	Silver Hill
Little Robert					Southern
					Summit

92I	Ec 60	Bonanza	Three Star	Baveley	103G
Occurrence	Gold Hill	Moosehorn Gp.	Torrent	Elizabeth	Wild Goose
Bernice	Lewieux Creek		Vancouver (Lone Star)	Ferguson Gp.	
Geo	Mann Creek	93K	Victory	Gordon	103H
Goldplate	Sonja		Whitewater	Greg	
Leadville	93A	Anderson (1.2490)	Yukon	Ingenika Gp.	
Lytton Gold Prospect		Boling (venture)	2ap, Big Pour	Onward	Decaire
Mad Arab	Al	Golden Glory	Zobnic	Orion	103I
Royal Star	Al	Lorne		Swan	
Shufly Central	Boulder Ledge	Mona	93M		
Star	Gorria - Crystal	Silver Fox (1.4097)		94D	Occurrence
	Hibernian	Silver Glance	(showing)		Occurrence
92J	Holmes Ledge		Ace	Bap	A - Claim
	Homestake	93L	American Boy	Bish	Beaver
Astra	Jane (douglas Vein)	Occurrence	Atna?	Carruthers Creek	Bernaline
King	Jane (west Vein)	Occurrence	Babine	Copper, Magnum	Calandar Group
Li-li-kel	Jim	Occurrence	Barber Bill	Goodridge	Caledonia
Patrick	Lipsey Vein	Apex 9	Bergsten Basin		Pidder
Silver Queen	Midas Vein	Carroll	Brian Boru	94Z	galena
Summit	Number One, Number Two	Cascade	Brunswick		gold Dome
Veritas	Pittman	Chapin	Comet	Bower Creek	Grey Copper
92K	Providence	Chisholm	Erie	Castle Mtn.	Hidden Group
	Saddle	Coronado	Great Ohio	Firesteel	Hughie
Linda	Sunshine	Cronin Mine	Group D	Fred	La Libertad
Mt. Diadem		Deer Claims	Lead King	Lou 1-16	M And M
White	93D	Diamond Belle	M.g.	Pine	Mag
	Nifty	Dora	Orbi	Pit	Thutade 34,5
92L	Thunder	Dorothy	Pole Star	Stone	
		Duthie Mines	Rio	Thutade 34,5	
Avan	93E	Empire	Silver Bell	94F	Ptarmigan
Ray No.49		Evelyn	Silver Cup		Quartz Silver
Bon	Dad's Special	Evegreen	Silver Pick	Stag	Rega
Brooks	Glacier	G.k.	Slocan		Scotia
H.p.h.	Grandview	Glacier Gulch (south Side)	Slocan	94G	Seven Sisters
Hab	Jow	Granisle Mine	Sunrise		Shenandoah
Hph Bluff	Lead Empire	Hidden Treasure	Suprise	Boot	Silver Mitts
Hph 2	Monarch, Silvertip	Home	Tetra	Egg, Foo	St. elmo
Hph 3	Nickel Plate	Hyland Basin		Lad	St. paul
Larson	Rainy, Gold Coin	Iron Vault	93N	Ric	Sunlight
North Shore	Stanley	Jessie	Occurrence	Tri	United St.croix
Rossland	Sunset, Cariboo	King Tut	Black Hawk		White Bear
South Shore	Tahtsa Range Occurrence	Kit	Bvd 32	94K	Windfall
South Shore		Lorraine (victoria)	Discovery Bar		
Tony	93F	Mag	Omineca Queen	Occurrence	103O
Tuscarora	Hidden	Mammoth	Wag	D.p	Occurrence
		Matuss		Hope 3	Alaskan
92O	93G	Reisster	94B	94L	103P
		Reisiter Creek			
Grab	Pioneer	Rico Aspen	Dev	Denetiah Creek	Occurrence
		Sil-van Mine	Nabe		Aberdeen
92P	93H	Sil-van Mine (duthie)	RON	94M	Anna-wack
		Silver King	W.L.		B & C
Ballantyne Mine?	Acme	Silver Lake	Wind	Occurrence	B. j.
		Silver Pick		Moose	Barite
		Snoeshoe	94C		Bayview

ZS as Second Commodity

Bellevue
Ben Bolt
Billy Barton
Black Hills
Bunker Hill
Canyon
Climax
Columbia
Dolly Varden Mine
Dominion
Double Ed
Dunwell
Elkhorn
Excelsior & Eagle
Glacier Creek
Gold Leaf
Gray Goose
Highland
Hunter Group
Ida
Independent
Ingraham's Claims
Jackie-mos2
Jumbo
Keystone
Lakeview
Last Chance
Le Roy
Little Joe
Lone Maid
Lone Star
Marmot Engrs.
Melvin
Mimico
Mobile
Moose
North Fork Basin
North Star
Observer
Paymaster
Prince George
R.h.s.
Riverside
Rush-portland
Seabee
Silver Bar
Silver Bell
Silver Chord
Silver Horde
Silver King

103P
Silver Star
Silver Star
St.rose

Theda Sara, Bebe Daniels
Tha
Tiger
Torbrit
Union
United Empire
Utopia
Verona Basin
Victory
Wolf
Yankee Boy

104A
American Girl
Anaconda
Aztec
Bear Pass Mining Syndicate
Betty
Bornite
Grey Copper
Jutland
Lucky Date
Maybe
Mayou
Mc
Monitor
Morning
Ore Mountain Mining
Red Cliff Extension
Ruby Silver
Silver Cliff
Surprise
Terminus

104B
Alaska Premier
Black Bear
Boundary
Buena Vista
Cripple Creek
Don
Fish Creek (upper)
Florence
Forty Nine
glacier Group
Gold Run
In
Johannie Mtn.
Kim
Last Chance
Laura
Mineral Hill Mines Ltd.
Hunro
Outland Silver Bar

Pins
Portland
St. Eugene
Terminus
Treaty Creek
Troy
Union

104G
Jackson
Lady Jane
Lucky Strike
Nuttitude Lake
Stikine Copper-lucky Strike
Su (split Creek)

104H
Chris

104I
Herb #3
Johnny 2
Mat
Niz
Winco
Winco

104J
Ho

104K
Occurrence
Eriksen-ashby
Janet-Vega
Lc 2
Pat
Waterfall
Zohini

104M
Occurrence
Occurrence
Brownie
Gold Cup
Silver Queen

104N
Atlin Ruffner
Imperial

Lakeview
Sunrise
White Star

104O
Gem
Holiday-ransom
Pcp
Silver Tip

104P
Atan
Contact
Graham
Graham(east Zone)
Haskins Mtn.
Iron Cap
Joem
Kirk
Luna
McDane Belle
Mt. Haskin
Ray 2
Rich
Silver Queen
Tibor

114P
Occurrence
Adams
Hibernian
Humbird 3
Humbird 33
Humbird 9
Lawrence
Lunar
Victoria

ZN as First Commodity

82E
Occurrence
Camp Hewitt 12
Director #5
Morning
Van

82F
Occurrence
Occurrence
Altoona
Black Fox
Black Jack
Caviar
Celtic Queen
Cliff
Cork-province
Palhousie
Daniel
Devey
Dundee
Elm
Galena Farm
Jackpot East
Johnsby
Last Chance
Lucky Boy(1.9188)
Mammoth
Melody
Oxide
Fete Creek
Piedmont
Red Rock
Reeves Macdonald Mine, Point
Reeves Macdonald Prospect
Reeves Macdonald, O'donell
Reeves-macdonald Mine
Shanrock
Silver Bell
Silver Dollar
Standard
Truman
U.S.

82G
Skylark

82K
Amato Ruby, J.g.
Amato Ruby, J.g. Duncan # 3 Z
Baltimore
Boherty

Duncan Mine
Duncan No. 1 Zone
Galena(1.593)
Lakeside, Amato Ruby
Lucky Jim
Netlakahtla
Sal A
Sal B
Sal C
Steele
Wigwag

82L
Big Ledge
Blackjack Group
Dawn
Fred
Golden West, Deer
King
Kingfisher
Ok
Rich
Silver King
Victory

82M
A And E
Bel
Bet
Melody
Ck
King Fissure
Mastadon
Mastadon North
Rose Gp.
Saul
To

82N
Zinc Creek

83D
Bend(canyon Zone)

92B
Fallside
Lenora And Tye

92E
Occurrence
Brown Jug

ZN as First Commodity

K 15	92N	Nabe
Shannon	Van	Ron
Silverado		Wind
92P	93A	W1 & Zrr
		94C
P.d.	Pittman	Occurrence
92G	93D	Elizabeth
		Greg
Occurrence	Nifty	94D
Lynn Creek Zinc	Thunder	
Princess Royal	93E	Willow Creek
92H		
	Dad's Special	94E
Occurrence	Monarch, Silvertip	
Sillican Group	Sunset, Cariboo	Thutade 34,5
Five Fissures	Surel	Vip 30
Metastaffer	93F	94F
Pat		
Rainy	Occurrence	Spa (stag)
Silvertip	Tetachuck Lake	Stag
Sunrise	93K	94G
Sunset		
92I	Kathleen Jane	Bertha
		Boot
Fairview	93L	Egg, Foo
Sunshine 1		Lad
Tolman Cr.	Black Fox	Ric
92J	Glacier Gulch (north Side)	94K
	Hagas	
Arizona	Hidden Treasure	Cty 10
Olympic	Iron King	Cty 5
92K	Josie	D,p
	Mamie	Hope 3
Red Mountain	Mayflower	103B
White	New Discovery	
	Rainstora	Hawks Nest
92L	Solo	
	93H	103H
A, B, X	Jack Of Hearts	Decaire
Alpha #4		Packsack
Caledonia	93N	103I
Dia	Occurrence	Goat
Dorlon	B.v.d. 33??	Lou 1-16
Hav	94B	Scotia
Mo		
On	Dev	103P
Rain	Linda	
Red Rock		
Tuscarora		

ZN as Second Commodity

Alamoza	82E	Elkhorn
Billy Mac		Fairy
Cape Nome	Occurrence	Glengarry
Highland	Au	Gold-galena, Eagle Bank
I.x.l.	Bluebell	Rb
Kent	Bluebell	Hewitt
Lone Star	Camp Hewitt 3	Highlander
Silver Bar	Camp Hewitt 8	Hilo #3
Silver Bell	Cyclops	Hilo 10
Silver Chord	Dictator	Hilo 4
Standard	E	Hotshot
Sunrise	International (L.2873)	Hummingbird
104A	Laurion	Jack Pot
	Lumpy	Jackpot
Aztec	Manitou (L.1753)	Jackpot Main
Morning	Midway Mine	Jewel
	Okanagan	Kid
104G	Pay Day	Kok
	Scandle	Kok
Devils Elbow	Silver Spot, Location 13	Kootenay Chief
Pereshin Mtn	Silver Spot, Location 9	Kootenay Florence
104I		Lakeshore Gp.
	82F	Leader
Niz	Occurrence	Lily Hay
	A-u.	Mabou, Ohio
104K	Alice	82F
	Amazon	Maestro
Occurrence	Annex	Manitoba
Janet-vega	Ayeshá	Mc
	Banker	Mountain Chief
104M	Belle Aire	Mountain Scenery, Mountain Ch
	Beringeria	Myrtle (alma).
Occurrence	Big Horn	Nameless
	Blue Bell	Neosho
104O	Bna	Nevada
	Buckeye	New Jerusalem
Nancy	Buster	Nicolet
Pcp	California	Noah
104P	Canadian Belle	Noble 3
	Cariboo	Noranda
	Chicago	North Star Mine
Haskins Mtn.	Colonial	Northern Belle
	Comfort	Number One
114P	Cotnoir-fors	Olsen
	Craw	Otto
Occurrence	Daisy Bell	Palmita
Occurrence	Daisy Group	Perrier
C & E	Dan Howe	Pontiac
Kim	Dictator	Py, P
	Dominion	Red Bird
	Double B	Salmo Consolidated
	Douglas	Shadow
	Dumas	Shenango
	Early Bird	Silver Band
	Eden & Crescent	

2N as Second Commodity

Silver Glance	Mag	Mosquito King	Jo-jo	Gray Rock	P.c.
Silver Reef	Mike	Red Top	Lynx (1.1660)	Margery	Tets
Silver Ridge	Mineral King	S Group	Mn 2	Peerless	
Silverite	Mohawk	Shushwap Snow	Paramount	Wonder	93H
Smeralda	Motherlode	Silver Shield	Sentinel		Nelson Creek
Snow King	Ohio	Speedwell	Skarn	92K	
Spokane & Trinket	Paradise (1. 4341)	Standard		Big Andy	93J
Star	Puzzle Group	Vic	92G	Big G.	
Sullivan	Rio Tinto	White Rock (1.4023)	Occurrence	Hap	Occurrence
Sullivan Mine	Rose Group		Britannia	Linda 14	Saason
Sutcliffe	Silver Giant Mine	82N	Cambrian Chieftan		
Talmor	Tamarak		Christina	92L	93K
Tam O'Shanter	Texas (1.4889)	Allco	Cleveland		Han, Pir
Tiger	Vms 21	Crown Point	Dal No. 1	B, C, E	Sonya-hectoria
Tommy And Colleen Group	Voyageur	Donald	Day	Soden	Tazzaron Lake
Tungsten		Kicking Horse	H.i.	Frances	
Vulcan	82L	Lanark	Indian River Copper	Hazel	93L
Wakefield		Monarch	London	Macquinna	Occurrence
Whitehope	Annis (ain Showing)	Sapphire	Mckinnon Group	Minerva Fraction	Occurrence
Winthrop	Annis 5	Shining Beauty Creek	Movicar	Nor	Occurrence
Yahkee Girl	Annis 5,11	Silverslope Creek	Roy	Niapkish Copper	Occurrence
	Annis 8	Snowflake	92H	North Star (1.1716)	Occurrence
	Chaput	Tangler	Occurrence	Peerless	Occurrence
82G	Eik	Woolsey	Ascot	Rainier	Occurrence
	Iron Mask		Big Ben		Occurrence
Arena, Reno	Keystone	83D	Fab	Empire-bluebird	Ascot
Black Bear & Mabel	Metal Crest	Bend (north Road Zone)	Gold Hill	Queen Bess	Cassiar Crown
Pors Property	Mosquito King	Blue Ice (west Zone)	Jessie	Silver	Cassiar Crown
Helg	Saokie		Luv		Copper Queen
Jolly-molly			Ly, Ford, Snow, Dora	93A	Cup, delta?
Kent	82M		Mag Group	Gorrie - Plateau D'or	DeBenture
M.J.p.			Mission	H1, 21	Dol, Lou
Pre	Occurrence		Patsy No.1	Joy	Keepawa
Society Girl	Occurrence		Patsy No.2	Sf	Princess
Stoney	Acacia		Red Star	Shaw	Rainbow
Sullivan	Agate		Sf	Vic	Silver Queen
	Big Ben #2		Sunnyside	93C	Silver Queen
82K	Chidgrin		Tan	Occurrence	Winninyik Hill
Amato Ruby	Cottonbelt		Top		
Barclay	Donnamore			92I	Black Prince
Beatrice	Elmoor		Ches	93E	Cap
Big Showing	Elva-sonja		Coronation	Occurrence	Higgins
Black Prince	Ex, Elk		Old Corona # 1	Occurrence	Killarney
Blue Jay	Goof-sue		Shuffly North	Captain	Mag
Bluebird	It (t Zone)			Chikamin Gp.	Phi
Broadview	It (e, F, G, M Zones)		92J	Harloworth	93N
Contact	Kelly's		Crown	Lead Empire	
Davie Group	Keystone		Pitzsimmons	Lens 56,58	Biddy
Dublin Queen	Kinbasket				Old
Duncan	Kinbasket				
Easy M	Lead King				
Fern And Evelyn	Little Slide				
Pog	Mogillvray Group				
Glengarnock	Millar's Prospect				
Gringo	Montgomery				
Kootenay Belle					

ZN as Second Commodity

Sheila Vernon Wit	Raspberry Cove	Little Wonder	Inklin	82E	Noranda
94B	103P	Hohawk	1040	Au	North Star Mine
Brin	Security	Monday Group	Occurrence	Dictator	Number One
Poco North	103G	Montana	104P	Director #5	Palmita
Poco South	Gibson Girl	Silver Bell	Occurrence	Morning	Pate Creek
Robb Lake	103H	Silver King And Eagle	Carllick	Okanagan	Piedmont
94C	103I	Sunbeam	Mt. Haskin	Scandia	Pontiac
Burn	Occurrence	Wily Ridge	Rose	Silver Spot, Location 9	Red Rock
Childhood Dream	Banker	Washington	Vale	82F	Reeves Macdonald Mine, Point
Molly	ECstall	Emperor	Vines	Altoona	Reeves Macdonald Prospect
Rain	How	Galena Para	114P	Amazon	Reeves Macdonald, O'donnell
Swannell	103J	Goat	Occurrence	Ayesha	Reeves-macdonald Mine
Weber	103K	Independence	Humbird 31	Banker	Shadow
94D	Annie Laurie	L12H	Kelsal #24	Belle Aire	82F
Occurrence	Big Oliver	Mammoth	Tarr	Beringeria	Shawrock
Asitka River	Copper Queen	Montreal		Black Fox	Silver Band
94E	Dardanelle	Mountain Boy		Blue Bell	Silver Dollar
Attycelley	Hercules	Old Chum		Buckeye	Silver Glance
Gord 18	Kendall Creek	Falsey		Celtic Queen	Silver Reef
Har	Lead King	Fortland, Ibez		Colonial	Silver Ridge
Thutade 4	Patmore	Southern Cross		Comfort	Silverite
Thutade 5	Providence	St. elmo		Cork-province	Spokane & Trinket
94G	Zona May	104B		Daisy Bell	Standard
Cay	Zymoetz	Betty		Daisy Group	Star
Kei	103L	Border		Dewey	Sullivan
Lynja	Occurrence	Boulder Creek		Dictator	Sullivan Mine
Rb, Dev, June	Occurrence	Bron		Douglas	Tam O'shanter
Rust	Etta	Cat 6		Dundee	Tiger
94K	103O	Extenuate		Parly Bird	Wakefield
Ctv 7	Big Mike Group	Hobo		Eden & Crescent	Whitehope
Dog	Howard	Indian Mine		Elkhorn	Wintrop
94L	Acadia	Inel		Galena Farm	82G
West Gp.	Ajax	International		Glengarry	Hb
102I	Ajax	Iskut Silver		Highlander	Skylark
Ori	Beverly	Mineral Basin		Hilo 4	Society Girl
103B	Black Bear	Montana Fractions		Jack Pot	Sullivan
	Blue Ribbon	Payroll		Jewel	82K
	Casey	Ray		Johnsby	Black Prince
	Chicago	Shan		Kootenay Chief	Bluebird
	Cook And Dobsons Claim	Silver Basin		Kootenay Florence	Broadview
	Dollar Bill	Silver Coin		Lakeshore Gp.	Dublin Queen
	Fox	104I		Leader	Pog
	George E	Ant		Mammoth	Galena (1.593)
		Bcr, Ss		Manitoba	Mike
		Jeff		Mountain Chief	Mineral King
		Serb		Mountain Scenery, Mountain Ch	Paradise (1.4341)
		104K		Nameless	Puzzle Group
				Nevada	Silver Giant Mine
				New Jerusalem	Voyageur
				Nicolet	Wigwan
				Noah	
				Noble 3	

PB and ZN as First and Second Commodity, AG Present

82L
 Annis (main Showing)
 Annis 5
 Annis 5,11
 Annis 8
 Chaput
 Dawn
 Golden West, Deer
 Mosquito King

82M
 A And E
 Agate
 Chidgrin
 Cottonbelt
 Donnamore
 Elmoor
 Elva-sonja
 Ex, Elk
 It (t Zone)
 It (e, F, G, M Zones)
 King Fissure
 Kinibasket
 Lead King
 Little Slide
 McGillvray Group
 Red Top
 Speedwell
 To

82N
 Allco
 Crown Point
 Donald
 Kicking Horse
 Lanark
 Monarch
 Sapphire
 Tangler
 Woolsey

83D
 Bend(north Road Zone)

92G
 Lynn Creek Zinc

92H
 Occurrence
 Five Fissures

92I
 Ches
 Coronation

92J
 Gray Rock

92K
 White

92P
 Queen Bass

93A
 Pittman
 Vic

93D
 Nifty
 Thunder

93E
 Occurrence
 Occurrence
 Captain
 Chikamin Gp.
 Emerald
 Lead Empire
 Monarch, Silvertip
 P.C.
 Sunset, Cariboo

93J
 Samson

93L
 Occurrence
 Occurrence
 Occurrence
 Occurrence
 Occurrence
 Occurrence
 Cup,delta?
 Debenture
 Hidden Treasure

Neepawa
 Rainbow
 Silver Queen

93M
 Black Prince
 Higgins

93N
 Biddy
 Osi
 Sheila
 Vernon
 Wit

94C
 Burn
 Molly
 Rain
 Swannell
 Weber

94E
 Thutade 34,5

94F
 Stag

94G
 Cay

94L
 West Gp.

103I
 Dardanelle
 Hercules
 Kendall Creek
 Lead King
 Patmore
 Providence
 Zyaostz

103J
 Occurrence

103P
 Occurrence

PB and ZN as First and Second Commodity, AG not Present

82E
 Occurrence
 Camp Hewitt 12
 Camp Hewitt 8
 E
 International(1.2873)
 Laurion
 Manitou(1.1753)
 Silver Spot, Location 13

82F
 Occurrence
 Alice
 Annex
 Cariboo
 Chicago
 Cotnoir-fors
 Craw
 Dalhousie
 Dan Howe
 Dominion
 Double B
 Gold-galena, Eagle Bank
 Hilo #3
 Hilo 10
 Hotshot
 Jackpot
 Jackpot Main
 Kid
 Kok
 Kok
 Lucky Boy(1.9188)
 Maestro
 Mc
 Melody
 Northern Belle
 Otto
 Oxide
 Py, P
 Red Bird
 Salmo Consolidated
 Shenango
 Snow King
 Sutcliffe
 Talmor
 Tommy And Colleen Group
 Tungsten
 Vulcan

82G
 Arena, Reno
 Black Bear & Mabel
 Fors Property

Helg
 Jolly-molly
 Kent
 M.J.P.
 Pre
 Stoney

82K
 Amato Ruby
 Amato Ruby, J.G.
 Amato Ruby, J.G. Duncan # 3 Z
 Barclay
 Big Showing
 Blue Jay
 Contact
 Davie Group
 Doherty
 Duncan
 Duncan Mine
 Duncan No.1 Zone
 Easy M
 Gringo
 Kootenay Belle
 Lakeside, Amato Ruby
 Mag
 Metlakahtla
 Motherlode
 Ohio
 Rio Tinto
 Rose Group
 Sal A
 Sal B
 Sal C
 Steele
 Tamarak
 Texas(1.4889)
 Vms 21

82L
 Big Ledge
 Blackjack Group
 King
 Kingfisher
 Metal Crest
 Ok
 Rich
 Silver King
 Smokie

PB and ZN as First and Second Commodity, AG not Present

Acacia	Empire-bluebird	94E	Washington	82E	Granite King
Big Ben #2					Great Dane
CK	93A	Attycelley	104A	Occurrence	Great Western
Kelly's		Gord 18		Ackworth	Greenhorn
Keystone	Gorrie - Plateau D'or	Har	Independence	Bathfield Silver Lode	Grey Copper
Kinbasket	H1, Z1	Thutade 4	Mammoth	Beaver	Hamilton
Mastadon	Joy	Thutade 5	Morning	Big Hill	Hamilton, Bachelor, V&M
Mastadon North	Sf			Black Diamond-standard	Hampton
Millar's Prospect	Shaw	94G	104B	Bounty	Happy Medium
Silver Shield				Bounty	Harris
	93E	Boot	Border	Buster	Helen
82N		Egg, Foo	Boulder Creek	Cascade(1.5000)	Hewitt
Shining Beauty Creek	Dad's Special	Xei	Exteruate	Castor Fr.	Highland Light, Victor
Silverslope Creek		Lad	Mineral Basin	Combination(1.1458)	Homestake
Snowflake	93H	Lynda	Montana Fractions	Commonwealth(1.1029)	Hudson Bay
		Rb, Dev, Juna	Payroll	Crown Point	Humbolt
83D	Nelson Creek	Ric	Silver Basin	Duncan	Hunter V
		Rust		Empire	Idaho
Bend(canyon Zone)	93J		104I	Eva Bell	Iva Fern
	Occurrence	94K	Niz	Fanny Joe(1.729s)	Jennie Bell
92C				Fontenoy	Jennie Lind
Tam 24	93K	Ctv 7	104K	Fremont	Jersey
		D,P		Goats, Mons	Joan Duplex
92E	Tezzeron Lake	Dog	Occurrence	Gold Drop	Junbo
		Hope 3		Golden Zone	Kalispell
Occurrence	93L		104M	Gypo	Kid 3
		103N		Halifax(1.3042)	King Jack, Howard Fr.
92F	Occurrence	Occurrence	Occurrence	Highland Belle Mine	Kootanay
	Ascot	Decaire		Highland Chief	
Bear 7	Winninyik Hill		104O	Homestake Fr.	
		103I		Horn Silver Mine	Krao
92H	93M		Occurrence	Imperial	Lakeview
		Lou 1-16		Jimmy	Last Chance
Ly, Ford, Snow, Dora	Mag	Scotia	104P	Jo Dandy	Leadville
				Kelly	Let Her Go Gallagher
92X	93N	103O	Occurrence	Killarney	Lily B
				Kittle(1.1748)	Lily May
Old Corona # 1	Occurrence	Big Mike Group	Rose	Koh-i-noor	Little Tim
Shuffly North		Howard	Vale	Kokomo Fr.	Liz B
	94B		114P	Lakevale	Lost Cabin
92J		103P		Lakeview	Lost Cabin
	Brin		Humbird 31	Last Chance(1.753)	Lou Dillon
Wonder	Dev	Ajax		Lightning Peak, Location 19	Lucky Boy
	Nabe	Blue Ribbon		Lightning Peak, Location 20	Mabou, Ohio
92K	Poco North	Casey		Lumpy	Madison
	Poco South	Chicago		May	May Flower
Hap	Robb Lake	Cook And Dobsons Claim		Midway Mine	Meadow View
	Ron	Lone Star		Moqui(1.2857)	Mercury
92L	Wind	Monday Group		Nodaway	Mercury
		Silver Bar		Olalla	Metallic
Tuscarora	94C	Silver Bell		Old # 9	Meteor
		Silver Bell		Pay Day	Mile Point
92P	Childhood Dream	Silver Chord		Providence(1.618)	Minnie Ha Ha
	Elizabeth	Sunbeam		Queen Mary	Molly Gibson
	Greg	Vimy Ridge		Rambler Fr.	Montana
				Rampalo, Location 16	Montezuma

AG as First Commodity

Bondholder	Rattler(1.1265)	Motherlode Gp.	Smeralda	Alpine	Free Coinage
Boomerang	Riverside(1.1031)	Mountain Con.	Smuggler	American	Frisco
Bosun	Rocco Plata	Mowitch	Snowstorm	Antoine	Gertrude
Broster		Mugwump	Soldier Boy	Argenta	Glengary
Buck Fr.		Myrtle (alma)	Star	Atlas	Gold Bug
Buffalo	Sally	Nature Boy	Stora King	B.C. And Tilbury	Great Western(1.548)
Buster	Silver Queen	Neosho	Sunmit	Badshot	Grizzly
Cable	Silver Spot, Location 11	Keepawa, Royal	Sunset	Bald Eagle	Grotto
California	Silver Spot, Location 8	No. One	Sunset	Banner	H.Y.M.
Calumet And Hecla	Silver Star	Nome	Surprise No. 2	Jannockburn	Hart
Canada Belle	Skylark(1.763)	Noonday	Tamarack	Beatrice	Hercules
Carloou	Smith	Nor	Tamrak, Laurier	Beaver	Ni-lo
Champion	Standard Fr.	North Wind	Union	Bannison Group	Hidden Treasure
Christina, Vergil	Sunnyside(1.2879) (#.1.401)	Northern Light	Utica	Best	Hillside
Club	Tiger	Oakland	V-day, Victory	Best	Horne Group
Colorado, Slocan Rule	W.S.	Olive A	Van Roi	Beulah And Homestake	Hot Punch(1.5100)
Commodore	Washington And Idaho	Olsen	Victor	Big Five	Hunter And Trapper
Comstock	Waterloo	Ontario #2	Victoria	Black Diamond	Irene
Comstock	Waterloo No.3	Oro	Victoria	Black Diamond	Iron Cap(1.5347)
Comstock(1.1814)	Wellington	Ottawa	Violoet	Black Diamond	Isle
Comstock, Virginia	White Knight	Paul Boy	Virginia	Black Eagle	Issac
Coronation		Peggy	Westmont, Eastmont	Black Grouse	Ixl
Country Girl	82F	Porcupine	Wolf Lake	Black Prince	Ixl Group
Crow-fledgling		Port Hope		Black Warrior	Jewel
Crown	A.u.	Radio	82G	Bonton	Jo-Jo
	Ajax	Radio		Butte Group	Junbo
	Alamo	Reco	Aurora	Caledonia	Junbo Group
Crown Point	Alexander	Red Eagle	Belleville	Calumet And Hecla	Kat
Crusader	Alice	Redress	Brenda	Canadian Boy	Kitsap
Cub, Molly	Alice S.	Republic #2	Burt	Canadian Girl	Kootenay Belle
Cultus Creek	Alameda	Revenue	Cambrian	Capello & Wilmer (1.4527 Etc.	Kootenay Chief
Curlew	Alpha		Guidon Gp.	Chance	Kootenay Queen
Dayton	Alpha, Magog	Richmond	Kootenay King	Charleston	Lancaster
Dorothy	Anna	Richmond-eureka	Lead	Chieftan	Lardeau-goldsmith
Double Standard	Anne	Riverside	Nord	Copper Chief(1.4584)	Laura J. And Ward
Dumas	Apex	Roanoke	Park Group	Copper Queen	Lavina Group
Ebor	Argenta	Rose Marie	Railway Mine Group	Craig	Lead Queen
Echo, Graphic	Arlington	Royal	St.eugene Mine	Crescent	Lead Star
Elsie	Armstrong	Ruby	St.tresa	Crown Point	Lexington
Emily Edith	Aspen	Sarah 2nd	Trilay Gp.	Cuba	Lincoln
Empire	Aurea	Sharon	82J	Dardanelles	Linson View
Enterprise	Baltimore	Silver Bear	Lucien	Dary Group	Lisa, A
Evening Star #8	Barefoot	Silver Bell	82K	Death On The Trail, Little To	Little Robert
Evening, Jennie	Barnett	Silver Bell	Occurrence	Delphine	Lost Cup
Exchange	Beaver Creek Mines	Silver Coin	A	Dominion	Lucky Boy
Fairmont	Belt	Silver Hill	Abbot	Eclipse	Lucky Boy(1.5423)
Fairy	Birdseya	Silver Hoard	Abrahamson Group	Emerald Hill	M.T. Fraction(1.10110)
Fergus	Bismark	Silver Nugget	4dr	Ethel Group	Habel Group
Firebrand	Black Bear	Silver 1	Ajax	Eureka	Habel R
Fisher Maiden	Black Eagle	Silver 6	Alpha	Evelyn	Hag; Bruce
General Grant	Black Rock North	Silverine	Alpha Group	Excise	Haggie May
Georgia	Black Rock South	Sixteen To One		Fe, Hil	Magnet
Get There Eli	Blackmore	Skyjack And Ranger		Fidelity	Mammoth
Glue Pot	Blue Rain	Skyline		Francis Jewell	Maple, Silver King
Goat Mtn.	Bna	Slocan Prince			
Good-nough	Bob, Iron Mask				

AG as First Commodity

Maverick	Silver Basin	Bright Star	Fe, Hil	Tofino Nickel	Empire
May Bee	Silver Bell	Faith	Frenchman Creek		Li-li-kel
Mcallister	Silver Belt	Helen, S.b.	George	92G	Patrick
Metropolitan	Silver Cup	May	Hawk Creek		Peerless
Millie Mack	Silver Glance	Mission Hill	Herringback	Crofton	Rock, Roy
Miner Boy	Silver Key	Mitchell & Cochrane Gp.	Ixl	Katanga	Silver Queen
Mobbs	Silver King	Mount Ida	Jumbo		
Mohawk	Silver Plate	Mount Vernon	King Solomon	92H	92K
Mohican	Silver Queen And Silver King	Octagon	Klondyke		
Mollie Mac	Silver Spray	Onyx	Laurier	Occurrence	Copper Bowl
Nolly Hughes(1.2106)	Silver Tray	Payroll	Sanguar	Occurrence	Dawn
Monitor	Sir Wilfred	Peerless	Scotia (1.2784)	Occurrence	Enid(1.233)
Monitor(1.1916)	Sitting Bull(1.4097)	Rita	Seward	Occurrence	Linda 3
Moonshine L.1881	Soho	Royal	Silver Glance	Adco Silver	Mt. Diadem
Morning	Southern Cross	Silver Bell(1.4329)	Waterloo	Agie	Stemwinder
Morning Star	Spider	Silver Creek	Waverley	Amanda	
Morning Star	Spyglass	Silver King		Bluebell(1.132)	92L
Moscow	St. Anthony	Silver Star	83D	Elkhorn	
Mountain Boy	St. Patrick	Skookum		Eureka(1.1210)	Avan
Nettie L	St. Keverne(1.2642)	Sunset	Blue Ice(east Zone)	Eureka-victoria	Bowerman
Nil Desperandum	St. Lewis		Blue Ice(west Zone)	Ile	H.p.h.
Noble Five	Star	82M	Grizzley	Indiana	Hph Bluff
Northern Belle	Sunset	Bearsden	War Colt #1	Invermay	Hph 2
Ocean(1.1723)	Sunset	Cariboo	Wells	Jumbo(1.187)	Hph 3
Old Gold	Superior	East Lehm	Yellowhead	Laverne, Cap	North Shore
Outlet, Outcrop	Surprise	Foghorn		Lucky Pair #4 Fr.	Privateer (1.1040)
Panama	Surprise	Glen	92B	Mazie	South Shore
Parrsboro	Syenite Bluff	June	Robertson	Morning Star(1.131)	South Shore
Paymaster	Tatler Group	King Tut	Water Power	Morning Star(1.131)	South Shore
Payne(1.499)	Tatler Group P3	Leemac-boomac		Newt	92N
Peoria	Tatler, Phoenix Gp. M4-m5	Mike, Marge	92C	North Star	
Poorman	Tecumseh	Minnesota Girl	Alfrida (1.777)	Queen Bess	
Pretty Girl	Thunderbird Mines	Mosquito King	Dickson	Queen Mine	Feeney
Pretty Girl	Tin City	North Star(north Showing)	Edith	Rainbow	Homathko Gold Mines Ltd.
Ptarmigan	Towser	Silver King	92E	Rio Grande	92O
Rad	Triune	Silver Mineral	Ubell	Silver Chief	
Rambler	Trojan	Smuggler(1.5387)	92F	Silver Hill	Warren Charlie
Rambler	True Fissure (1.1097)	Summit		Southern	
Raven	Vias Ridge	Tinkirk		Summit	
Red	Vms 1	Tom		Top	92P
Red Ledge	Vms 2	Twin Mountain		Toronto	
Redmac	Vms 23	vic 8, 21		Totem Pole	Ballantyne Mine?
Relief	Wagner Group	White Rock(1.4023)			Bull Moose
Revenue	Washington	82N		92I	Lemieux Creek
Ritchie Group	Wellington	Agnes			Moon
Royal Group	White Cat	Annie			Sonja
Ruffled Grouse	Whitewater	Bluebell			
Ruth-vermont	Winona(1.10061)	Couverapee			93A
Sandy	Yornoc	Crystal And Wonderful			
Senorita	Yuill	Dunvegan			Al
Shakespeare	82L	Edinburgh(1.2867)			Al
Shamrock	Admiral	Elizabeth(1.2785)			Black Bear
Shannon	Bonnie Brae	Ellen D			Holmes Ledge
Sharon	Bonnie Brae				Mariner
					Nb
					Peacock

AG as First Commodity

Providence	93L	Zobnic	Bish	1030	North Fork Basin
93B	Occurrence	93M	Carruthers Creek	Alaskan	North Star
3i	Occurrence	(showing)	F.C., H.M.	103P	O.k. Fraction
93C	Occurrence	(showing)	Goodridge	103P	Paymaster
Occurrence	Occurrence	Acc	Motase		Regal
93E	Occurrence	American Boy	Shell (croy)		Rex
Bellecini	Carroll	Atna?	94E	Aberdeen	Riverside
Dolly D	Cascade	Babine	Bell	Acadia	
Glacier	Cassiar Crown	Barber Bill	Firesteel	Anna-mack	103P
Gold Crown	Chishola	Brunswick	Pit	B & C	Royal
Golden Chest	Copper Queen	Comet	94K	B.j.	Ruby
Grandview	Cornu Copia	Drone	Occurrence	Barite	Rush-portland
Harloworth	Coronado	Erie	103G	Bayview	Second Thought
Joliment	Cronin Mine	Posa	Marble	Bellevue	Silver Bar
Jow	Diamond Belle	Group D	103H	Ben Bolt	Silver Basin
Lead Empire	Dom	Hecla (bluebird)	103I	Billy Barton	Silver Bell
Nickel Plate	Dom	Killarney	Occurrence	Black Diamond	Silver Bow
Old Timer	Dorothy	Lead King	103I	Black Hills	Silver Bow
Oriental	Duthie Mines	M.g.	Marble	Bunker Hill	Silver Horde
Rainy, Gold Coin	Empire	Pole Star	103H	Canyon	Silver King
Stanley	Evelyn	Rio	Hunter	Caribou Fraction	Silver Leaf
Tahtsa Range Occurrence	Evergreen	Showing	103I	Climax	Silver Star
Westview	Glacier Gulch (south Side)	Silver Bell	Occurrence	Coast Silver	Silver Star
93F	Golden Eagle	Silver Cup	Bergaline	Columbia	Silvertip
Hidden	Grubstake (far)	Silver Pick	Bullion	Columbia	Speculator No.2
93G	Home	Slocan	Caledonia	Dunwell	St. elois
Duck	Hyland Basin	Slocan	Golden Penny	Esperanza	Starlight
Pioneer	Iron Vault	Sultana	Halliday	Excelsior & Eagle	Starlight
93H	Ivanhoe	Sunrise	Hope Silver	Glacier Creek	Surprise
Alladdin	Jack Rabbit	Suprise	Legal Tender	Glacier, Left Over	Surprise
Bonanza	Jessie	Tetra	Mag	Gray Goose	Theda Bara, Bebe Daniels
Dominion	Joe 85, and 87	93N	Mayou	Henderson	Tiger
Moosehorn Gp.	King Tut	Berthold	Noble	Highland	Torbrit
93K	Kit	Black Hawk	Oakwood	Hunter Group	Union
Anderson (1.2490)	Lorraine (victoria)	Blackburn	Quartz Silver	Ida	United Empire
Boling (venture)	Mammoth	Bvd 32	Rega	Independent	Utopia
Golden Glory	Matuss	Discovery Bar	Seven Sisters	Ingraham's Claims	Verona Basin
Lorne	Peacock	Mag	Sunlight	J & W	Victory
Mona	Reiseter	94C	Zona May	Junbo	Wolf
Silver Fox (1.4097)	Rico Aspen	Occurrence	103J	Keystone	Wolf
Silver Glance	Sil-van Mine	Beveley	Bell Mtn.	Kit	Yankee Boy
Silver Island	Sil-van Mine (duthie)	Perguson Gp.	Drumharvey	Kitsol	
	Silver King	Gordon	Eagle	Lakeview	104A
	Silver Lake	Jupiter	Englestone	Last Chance	American Girl
	Silver Queen	Nel	Mascot	Le Roy	Anaconda
	Snoeshos	Onward	Morning Star	Little Joe	Bear Pass Mining Syndicate
	Three Star	Orion	Moose	Lone Maid	Betty
	Topley Richfield	Swan	Musketeer	Medallion	Big Casino
	Torrent	94D		Melvin	Daly And Sullivan
	Van, Wyk			Mimico	Emperor
	Vancouver (lone Star)			Mobile	Goat
	Victory			Mohawk	Grey Copper
	Yukon			Montana	Jutland
	Zap, Big Four			Moose	Lois; Edith

AG as First Commodity

Lucky Date	104K
Mayflower	
Mayou	Eriksen-ashby
Nc	Potlatch-banker
Ore Mountain Mining	waterfall
Radio (cuprua)	Zohini
Ruby Silver	
Silver Cliff	104H
St. eleo	
Superior Mines Ltd.	Occurrence
Surprise	Ben-ay-chree
Terminus	Brownie
Virginia K	Silver Queen
104B	104N
Boundary	Atlin Ruffner
Buena Vista	Ht. Leonard
Fish Creek (upper)	Pelton Group
Forty Nine	Ru
Glacier Group	
Gold Cliff Premier	104O
Hollywood	
In	Ges
Iskut Silver	Holliday-ransom
Johnson	Key
Jon	Luck
Last Chance	Silver Tip
Laura	
Mineral Hill Mines Ltd.	104P
Munro	
Outland Silver Bar	Occurrence
Silver Hill	Contact
Silver Leaf	Graham
St. Eugene	Graham(east Zone)
Terminus	Iron Cap
Treaty Creek	Luna
Troy	McDane Belle
Unicorn	Ray 2
Union	Rich
104G	Silver Queen
	Tibor
Jackson	114P
Lady Jane	
Nutlode Lake	Occurrence
104I	Adass
	Canadian Vardee
Erna	Humbird 3
Herb #3	Humbird 33
Johnny 2	Lawrence
Norma	Victoria
Winco	
Winco	

AU (Lode) as First Commodity

82E	
Occurrence	
Occurrence	
Albion No. 2(1.12489)	
Alpha	
Apex	
Arlington(1.2596)	
Athelsran	
Au	
Australian	
Baldy, Rice	
Bank Of England	
Barnato(1.2848)	
Berlin(1.11157)	
Bev. Lloyd, Den	
Hooverang	
Es	
Buckhorn(1.1107)	
Buffalo(1.920)	
Buller(1.3242)	
Burnt Basin(1.1136)	
Butcher Boy	
Caledonia(1.1756)	
Cannon Ball(1.1036)	
Cariboo-aelia	
Carmi	
Colby # 16 2	
Crescent	
Dane Sp.	
Datun	
Dividend-lakeview	
Divine	
Dusty Mac	
Dynamo	
E.p.u.	
Elkhorn Fr.(1.297s)	
Elkhorn Mine	
Ellsworth	
Enterprise	
Enterprise Sp.	
Ethiopia(1.932)	
Eureka	
Eureka(1.1145)	
Fairview	
Gateway	
Golconda Fr.(1.2149)	
Gold Bug(1.895)	
Gold Drop(1.1415)	
Gold Hill	
Gold Valley	
Golden	
Golden Crown(1.600)	
Gord. Ken, Mark	
Greenwood	
Guilt Edge	

Guts	
Hackla(1.2847)	
Hedley Monarch	
82E	
Helen	
Hill	
Hummingbird(1.1369)	
Inland Empire(1.3880)	
Ivy	
J	
Jewel(1.850)	
John Bull(1.2051)	
Jones Placer	
King(1.177s)	
Lake	
Lakeside(1.1023)	
Little Duncan	
Lookout And Mountain View	
Lounark	
Mac Siccac	
Mac Siccac	
Maple Leaf	
Marguerite(1.836)	
Marshall(1.2388)	
Mckinley(1.140s)	
Messenger(1.121s)	
Minne-ha-ha	
Molly Gibson	
Mono(1.2205)	
Morning Star	
Morning Star(1.2570)	
Mother Lode(1.1508)	
Niagra(1.1356)	
Nipper	
No. 7(1.623)	
North Star(1.1165)	
O.k.(1.573s)	
Orofino	
Panorama	
Prize No. 2(1.120s)	
Rambler(1.2861)	
Rathullen	
Reno	
Rosemont	
Sailor	
Silver Dollar(1.2842)	
Skipper	
Saugyler	
St. John	
St. Lawrence(1.1255)	
Standard	
Star Of Hope	
Steawinder	
Sunset	

Tin Horn	
Torres	
Tripoli(1.1613s)	
Tuesday	
Twin Lakes	
Tyee	
Victoria-old England	
82E	
Fog Horn	
Freddy	
War Eagle	
Waterloo	
White Bear	
82F	
Alpine	
Anderson	
Annie	
Arizona	
Arlington	
Athabaska	
Baltic	
Bayonne	
Beau	
Big Horn	
Bill Mecky	
Black Stone	
Blackcock	
Bluebird	
Bluestar	
Bluestone	
Bonanza	
Bunker Hill	
California	
California	
Canadian Belle	
Canadian King	
Cariboo	
Catherine	
Cayote	
Center Star	
Centre Star	
Chapleau	
Christine	
Clubine	
Clyde	
Columbia	
Columbia	
Cottonwood	
Daune	
Daylight	
Dick	
Donnybrook	
Dumas	
Echo Sp.	
Elk	
Euphrates	
Eureka	
Excelsior	
Fawn	
Fern	
Fog Horn	
Freddy	
Gold Belt	
Gold Cup	
Gold Cup	
Gold Hill	
Gold Hill	
Gold King	
Gold Ledge	
Gold Queen	
Gold Viking	
Golden Age	
Golden Belle	
Golden Chariot	
Golden Drip	
Golden Eagle	
Golden Hill	
Golden West	
Goldstream, Bearpaw	
Good Hope	
Good-hope	
Gopher	
Granite-poorman	
Great Eastern	
Great Western	
Harriet	
Hattie	
Hattie Brown	
Heather	
Hollinger	
Homestake	
Homestake	
Hummingbird	
Inez	
Irene	
Iron Mask	
Ixl	
J.c.c.	
Joint	
Joker	
Josie	
Jumbo	
Keystone	
Kilo	
Kootenay	
Kootenay Belle	
L.h.	

AU (Lode) as First Commodity

Iron Cap	April	Gold Coin	Rabbit	Francis	Holland
Jervis Island	Ashloo	Gold Coin	Red Mountain	Glacier	Jewel
John Bull	Barkoola	Gold Cord	Rodche	Gold Bug	Kay
Joker	Blue Lead	Gold Hill	Rodick	Gold Gossan	Kelvin
Laurendale	Bulliondale	Gold Mountain	Rollo	Guichon	Lorne
Leora	Copper Group	Gold Queen	Rush-of-the-bull Fr.	Hilltop	Lucky Strike
M.t.	Dandy	Good Hope #1	S And N	Homestake	Ninto Gold Mines Ltd.
Maple Leaf	Irish Molly	Granite Sheelite	Silver Daisy	Hykaway	Nix
Marble Bay	King Midas	Greenwood	Silver King	Iron Cap(1.875)	Native Son
Marjory	Providence	Hall's Group	Silver Moon	Jamieson Creek	Northern Light
Matter	Raccoon Is.	Hedley Tailings	Slesse Creek	Jenny Long	Paymaster
Morning	Ray Creek	Hematite	Snowstorm	Joshua	Pilot
Moysha	Red Jacket	Hillsbar	Speculator	June	Pioneer
Murphy-johnson	Richfield	Home X	Spokane	Kingwilliam	Pioneer Extension
Musketeer	Buskin Gold	Hope Group	St. Patrick	Lytton Gold Prospect	Priarose
Noble	Skookum	Idaho	St.lawrence (1.258)	Manchester	Ranger
Northern Crown	St. Paul	Ideal Gold	Star	Martel	Reliance
Nutracker	Venetian	International(1.932)	Steamboat Mtn. Gp.	Mary Reynolds	Royal
Q.k.	Viking	Iota	Sunnyside	Planet	Senator
Olympic		Iron Duke	Superior	Pole Star	Short O'bacon
92P	92H	John Bull	T Group	Ramage	Shulap
	Occurrence	July	U.s. Rambler	Riverside	Spokane
	Occurrence	King Gp.	Utah	Royal Inland	Standard
	Occurrence		Victoria	Royal Star	Success
	Occurrence	92H	Virginia	Scottie Creek	Summit
	Occurrence	Kingston	Ward	Serpentine & Summit	Sumit
	Occurrence	Lost Horse Gp.	Whirlwind	Silver King	Truax
	Ace Gp.	Lucky Strike		Sunny Boy	Tuscarora
	Anna	Mabel	92H	Thelma Group	Veritas
	Arcan	Majestic	Yellowjacket	Tranquille River	Warman
	Au	Maple Leaf		Tubal Cain	Waterloo
	Aufeas	Marcotte Gp.	92I	Vernon	Wayside Mine
	Aurn	Marian	Occurrence	Victor	White And Bell
	B.b.	Marsellaize	A Group	92J	Why Not
	Big Ben	Marvel	Ace	Alma	Winchester Cosmopolitan
	Blackjack	Mascot Fr.	Alameda	Ample	92K
	Blue Chip	Master Ace	Alexander	B & F	Alexandria
	Brett	Mission	Allies	Benboe	All Up
	Camp	Montana	Ashcroft	Blackbird	Amethyst
	Clover Leaf	Montrose	Av	Blue Jack	Blue Bells
	Defiance	Morning	Azela	Brett Group	Channe Is.
	Diane	Murphy(1.27)	Bear Cat	Butte-1xl	Commonwealth(1.277)
	Don	Nevada(1.79)	Beatrice	California	Constitution
	Duffey	Newton Creek	Big Slide	Comstock	Cuba Silver
	Dundee	Nickel Plate	Clairdon	Congress	Dorothea Morton
	El Paso Gp.	Old Glory	Constant	Coronation	Galena
	Ell	Pacific Mines	Cornwall Group	Countless	Geller
	Emancipation	Patsy No.1	Corona Group	Dan Tucker	Hope Gp.
	Emigrant	Patsy No.2	Cris Creek	Dauntless	Loughborough
	Faith	Pierce Mtn. Gp.	Deadman River	Forty Thieves	Lucky Jim
	Florence	Pipestem	Diamond S	Gladys, Hita	Maynet
	French Mine	Pittsburg	Don Group	Gloria Kitty	Martle And Hayden
	Ga	Providence	Emulator	Golden Gate	Ophir
	Ga	Queen	Enterprise	Gull	Red Cap
Occurrence	Gea				
Occurrence					

AU (Lode) as First Commodity

Shamrock	Tagore	Betty	Hixon Creek	Oakla	Kwanika Creek
Shamrock	Van Isle	Bon, Park, Round Top	K	Stewart Lake	Lust Dust
Sonora	Venture	Boulder Ledge		Van Decar Creek	Mosquito Creek
Spider	White Quartz	Bridger And Johnston	93H		Motherlode
Sunbeam	White Star (1.1031)	Canadian		93L	Silver-Kenny Creek
Tribby	Zeb	Cariboo-hudson	Occurrence		Tom Creek
Union Gp.	92N	Cariboo-nordine	Occurrence	Occurrence	Valleau Creek
White Hope		Corban	Occurrence	Dome Mountain	Vital Creek
White Pine		F.A.wells	Occurrence	Glacier Gulch (gold-bismuth)	
	Occurrence	Gisco	Occurrence	Gold	93O
92L	Occurrence	Glenecho	Occurrence	Gold Brick	
	Arjo	Gold Recoveries Ltd.	Occurrence	Rio Grande	Bill Cust's Bar
Alice Lake	Blackthorn Mtn.	Gorrie - Crystal	Occurrence	S.K.	Tudyay Lake
B Group	Blue Bell	Gorrie - Imperial	Occurrence	Sk(babine Gold)	
Bobmac	Langara	Hebson	Occurrence		94B
Boden	Langara	Hibernian	Occurrence	93M	
Churchill	Morris Mine	Howestake	Occurrence	Babine	Branham Plat
Churchill	Mountain Boss	Jane (douglas Vein)	Acme	Babine River	Gold Bar
Cordova	Orwill	Jane (west Vein)	Aurum	Fortune Hill	Pete Toys Bar
Eclipse		Jim	Buz	Iel	
Ehatset	92O	Lipsey Vein	Canusa	Iel	94C
Extension		Midas Vein	Cariboo Gold Quartz	Iel	
Extension #4	Astonisher	Monte Cristo	Chisholm	Macdonald	Occurrence
Extention # 4	Chishola	Moose	Dragon Mountain Gold Quartz	O.k.	Croydon
Farris	Elizabeth	Mount Burdett	Foster Ledge	Placer Gold Showing	Elizabeth
Fill	Giant Vein	Number One, Number Two	Free Lance	Placer Gold Showing	Granite Basin
Golden Gate	Hi Do	Saddle	Hard Cash	Placer Gold Showing	Ma Ha Creek
Golden Horn	Massena Group	Spitfire	Independence	Placer Gold Showing	Halquinn
Golden Peak (1.1035)	No. 1 Vein	Sterling	Kitchener	Placer Gold Showing	Hope
Goldfield	No. 2 Vein	Sunshine	Mosquito Creek	Placer Gold Showing	Ingenika Gp.
Goldspring	Red Bird Vein	Sylvain	Myrtle	Placer Gold Showing	Ingenika River
Ixl	Robson	Sylvain	Perkins	Silver Standard	Jia May Creek
Ixl	Taylor-windfall	Talbot	Pml 7263	Silvertau	Omineca River
King	Vick	Timber Line	Prosperine	True Pissure	Pluto
King Midas	W	Wendle Claims- Bralco Gp.	Rainbow	Victoria	Polaris
King Midas	92P	Wendle Claims- North Showing	Richfield Cariboo Gold Mines		Red Dyke
King Midas		Zone	Standard Location	93N	Ruby
Lone Star (1.1052)	Fortuna	93E	Tipperary	Occurrence	Ruby
Lucky Strike	Gold Hill		Warspite	Occurrence	Stranger
M Group	Hawilton Creek	Core	Westport	Occurrence	Thane
Macquinna	Hidden Creek	Sar Lake		Occurrence	Vega Cr.
Monitor	Mahood Lake	Harrison	93I	Occurrence	
North Fork	Plato	Lam		Occurrence	94D
North Star (1.1716)	Savona Gold Mine	Riverside Gp.	Dawn	Occurrence	Occurrence
Omega	Sweet Home	Shirley		Occurrence	Banjo
Pandora	Telluric	Smith, Nash	93J	Occurrence	Bruce
Paystreak	Vid 27	Surel Lake		Occurrence	Pl-independence
Peerless	Vidette Mine	Whitesail Outlet	Occurrence	Occurrence	Gerle Gold
Peerless	Windpass # 1	Whitesail Range	Occurrence	Black Jack Gulch	Ginger B
Prident			Syndicate	Don Group	Goldway
Prosperity (1.1801)	93A	93G		Erickson	Ingenika River
Quatsino King	Occurrence	Occurrence	93K	Fairview	King George
Riay (1.1765)	Antler Mountain	Bellholm		Farrell	McConnell Creek
Roper	Bertha	Cayeene #2	Occurrence	Free Gold	Quyzvhr (ba-kat)
Scrutor Gold			Miyou	Kelly Creek	Solo
Silta				Kildare Gulch	

AU (Lode) as First Commodity

94E	Beaver	Cascade Falls	Alaska Premier	104J	1040
Chappells	Big Oliver	Copper Cliff	Big Missouri	Keystone	Paqi
103A	Black Bull	Copper King	Black Bear		Ram
Hebrew	Black Wolf	Dynaamiter	Butte	104K	104P
Pacific Ria	Brentford	Elkhorn	Daly		
103B	Canadian Swede	Fraser	Daly Alaska (lower)	Canyon & Bear	Cornucopia
Ellen	Coastock	Gloria	Daly-alaska (upper)	Highland Boy	Dennis Creek Placers
103C	Eagles Nest	Gold Leaf	Florence	Lucky Strike	George
Occurrence	Fiddler	Gold Reef	Globe	Maidas	Gold Hill
Occurrence	Gold Cap	Goldors	Gold Run	Manville	Homestake
Blue Mule	Hawk	Golskeish	Gracey	Martha And Sinclair	Homestake
Early Bird	Hawk Bear	Granby Point	Halport	Mohawk	Hopefull
	Helen	High Grade	Hercules	Polaris-taku	Hunter
	July	Homestake	High Ore	Potlatch	Jennie
	Margarite	Homestake Group	Lion	Silver Bird	Klondike Fr.
	Martin	Hornor	Mackay, Cam	Silver Queen	Mac
	Motherlode	Iron	Pioneer	Tulsequah Chief	Nora
	Scenic	L & L	Portland		Red Rock
	September	Laddie	Premier Extension	104M	Rocky Ridge
	Silver Bow	Lucky Strike	Rainbow	Occurrence	Rosalia Creek Placer
103F	Society Girl	Marnot Engrs.	Salmon	Bald Peak	Snow Creek Gold Mine
Babe	Terrace	Marnot Metals	Silbak	Bighorn	Turnoil
	True Blue	Mastadon	Silbak Premier	Callaghan	Vollaug
103G	Usk Group	Morning Star	Silbak Premier Mines	Canyon Creek	114P
	Victor	Nelson	Silbak Premier Mines	Engineer	Occurrence
Banker	103J	Patricia	Silbak Premier Mines	Gleaner	Occurrence
Bull Swamp		Phoenix	Titan	Gold cup	Occurrence
Cusheva	Cape Fife	Portland Canal	Union	Gridiron	Occurrence
Gold Bug	Eyde Pass Mine	Prosperity And Porter Idaho	Unuk Jumbo	Happy Sullivan	Occurrence
Helper Lake Property	RK	Rambler	Virginia	Jessie	Occurrence
Oeanda	Surf Point Mine	Rosalea	Woodbine	Kirkland	Occurrence
Southeaster	Wren	Ruth & Francis	Yellowstone	Red Rupert	Occurrence
103H	1030	Saddle	104G	Rupert	Gold Cord
Occurrence		Silverado	August	Sweepstake	Tat 1-4
Banker	Bc Group	Whiskey Creek	Barrington River	White Moose	
Cordilla Group	Bc Verde	Wilby	Bau Creek	White Moose	
Cordillera	Bishop	Windsor	Bucks Bar		
Malcolm	Eama Gordon	Wire Gold	Kona	104N	
Millbank Group	Fish Cr. (lower)	104A	Kona	Occurrence	
Stewart	Georgia River Gold	Dalhousie, Rock Of Ages	Lucky Strike	Occurrence	
Surf Inlet	Last Shot	Gold Bar No.1	Mountain Goat	Anaconda	
Wells Claias	Lucky Boy Ext.	Independence	Stikine Copper-lucky Strike	Beavis Mine	
103I	Mountain View	Little Wonder	Tsikhini Creek	Cornerstone	
Occurrence	Pedro Georgia (im)	Monitor	104H	Golden View	
Occurrence	Six Mile	Moonlight	P.m.l. 723	Imperial	
Occurrence	103P	Moonlight	104I	Lakeview	
Occurrence		Red Bluff	Bullion Creek	Pictou	
Occurrence	Occurrence	Roosevelt (grizzly)	Faulkner Creek	Red Jacket	
Occurrence	Albany	Royal Irish Group		Relief	
Occurrence	Beaver Ext.	Spißer		Rock Of Ages Claim	
Alice Group	Bi-metallic	Treaty Creek		Sunbeam	
Beanstock Group	Black Bear	104B		White Star	
Bear	Bullion Delnote			Yellow Jacket	

AU (Lode) as Second Commodity

82E	Skylark(1.763)	Jumbo	Dutchy	92F	Sunrise
Ackworth	Snowshoe	King Jack, Howard Fr.	Eclipse	Big Boy	Toronto
Aetna	Standard(1.1463)	Kootenay	Pe, Hill	Cat	92I
Ah There	82E	Lost Cabin	Ixl	Copper King	Afton
Alma Mater	Steawinder, Montezuma	Lost Cabin	Jewel	Cornell	Ajax(1.4710)
Amandy(1.2795)	Sun	Lou Dillon	Molly Hughes(1.2106)	Cream 10	B, C
Argo	Top	Jay Flower	Monitor(1.1916)	Cream 6,8	Chance
Averill	Victoria	Meteor	Morning Star	Good Hope(1.394)	Copper King
B.c.(1.882)	Volcano(1.1476)	Motherlode Gp.	Noble Five	Grizzly	D.a.
Bald Eagle	War Eagle	Mowitch	Sir Wilfred	Herb	Devey
Barbara	Washington And Idaho	Mugwump	Triune	Juneau(1.69)	Fiddler
Bay	Winner	Northern Light	82L	Little Billy	Ford
Bf, Hb	Winnipeg(1.599)	Option	Copper King	Nary M'quilton	Gloria #1
Big Copper	Yellow Jacket	Option	Copper Nugget	Old Bill Gp.	Grey Mask
Black Bear(1.2597s)	Yellow Jacket	Paul Boy	Dck	P.d.	Iron Mask
Blue Jay	Yellow Jacket	Peggy	Klondyke	P.d.g.	Joker
City Of Paris(1.622)	82F	Port Hope	Mission Hill	Raven	Kimberly
Copper Queen	Abe Lincoln	Republic #2	Silver Bell(1.4329)	Royal Arch	Larsen
Curlew	Alexander	Roanoke	Skookum	Sherwood	Lorna
Elmore(1.972)	Azze	Rockland	Three Tramps	St. Joseph(1.50)	Nickie Fr.
Emma(1.591)	Barnett	82F	Vimy	Venus	Monte Carlo(1.4716)
Empire	Beaver Creek Mines	Roma & Valley	92M	92G	Moon
Pife(1.1185s)	Birdseye	Royal	Bearrsden	Occurrence	No. 7 Claim
Fremont	Black Bear	Royal Canadian	82N	Occurrence	Noonday(1.2563)
Gen(1.697)	Caribou	Ruby	Ellen D	Occurrence	O.k.
Gloucester(1.2809)	Central	Sarah 2nd	Pe, Hill	Orphan Boy	Old Alameda # 16
Goats, Mons	Champion	Silvermine	George	Pavilion Gold	Orphan Boy
Gold Drop	City Of Spokane	Skylark And Ranger	Klondyke	Peacock Group	Pavilion Gold
Gold Drop	Commodore	Soldier Boy	Silver Bow	Pyrite	Roger's
Golden Zone	Country Girl	Sunmit	Waverlay	Rogers	Sugar Loaf Hill
Great Hopes(1.602)	Crown Point	Victoria	92B	Utopia	Utopia
Gray Eagle	Crusader	Virginia	Eagle	Wheal Tamar	
Greyhound	Curlew	Wilcox	Finlay		
Gypo	Double Standard	Wolf Lake	92C		
Horn Silver Mine	Evening Star	82G	Alfrida (1.777)		
Iron Cap	Evening Star #8	Belleville	Dickson		
Knob Hill	Exchange	Brenda	Gladys		
Koh-i-noor	Fairmont	Grey Copper	Marble Cove		
Lexington(1.645)	Fresno	Trilby Gp.	Peterson		
Little Bertha(1.959)	Georgia	Yankee Girl	Sunloch		
M.s.	Get There Eli	82K	92E		
Monarch	Goat Mtn.	Abrahamson Group	K 18		
Mother Lode(1.704)	Gold King	Ajax	Ubell		
Oialla	Hamilton, Bachelor, V&M	Alpine			
Old Ironsides	Homestake	Alps-alturas			
Oro Denoro(1.692)	Homestake	Butte Group			
Pathfinder(1.782)	Homestake	Capello & Wilner (1.4527 Etc.			
Phoenix Mine	Howard	Chance			
Providence(1.618)	Hunter V	Chieftan			
Queen Mary	Iron Horse				
R. Bell	Iva Fern				
Rampalo, Location 16	Jennie Bell				
Ravida	Joan Duplex				
Red Rock					
Riverside(1.1031)					

AU (Lode) as Second Commodity

Gold Thread	Mariner	Daley West	Hunter	Outsider Group	Zulue Lake
Hook	Mariner	Highland Boy	Ken		
Monte Cristo	Mb	Rocher Deboule	Ox	103P	104I
Ol	Peacock	Three Hills	Payroll		
Princess	Pine 5		Western Copper	Occurrence	A-1
Rebecca	Pine 9	93N	Whale Channel	Bonanza	Dalvenie
Senator		Berthold		Carpenter's Claims	
Solyman	93B	Blackburn	103I	Coast Silver	104J
Stemwinder		Jeno		Fox	
Wfp	Bj, Jp, Barb	Lorraine-lorrex	A-b	Glacier, Left Over	Pat
White Swan		Nina	Autumn	Hidden Creek	
Wyho	93C		Banner Homestake	Homestake	104K
	Occurrence	94C	Belway And Rex	Kinskuch	
92L		Betty	Continental	Haple Bay Gp. (could Be Bay)	Potlatch-banker
Blue Bird	93D	Jupiter	Copper King	Prince John	
Climax		Sarah	Cordillera	Red Reef	104M
Dorlon	Cure Copper	Veqa	Croesus	Rex	
Extension	93E		Diadem	Silver Bow	Ben-my-chree
Lucky Jim		94D	Diorite	Speculator No.2	
Mispikish Copper	Bellecini	Croy (shell)	Emma	Tip Top	104N
Princess	Golden Chest	Day	Four Aces	Vanguard	
Privateer (1.1040)	Joliment	F.C., H.M.	Frisco		104A
Welcome Home	Old Timer	Pac And Can	Globe	Daly And Sullivan	
Yankee Girl	Ron 10	Roy	Groto	Little Pat	
Yreka	Westview	Shell (croy)	I.x.l.	Lois; Edith	104O
92M	93H	Soup	Independence	Mayflower	Christmas Creek
Feeney	Alladdin	94E	Keanza, Valhalla	Radio (cuprum)	Christmas Creek
Hom	Cosalite	Bell	Keystone, Lucy O'neil	Red Cliff	
Homathko Gold Mines Ltd.	Dominion	Som	Lucky Luke	Tyee	114P
92O	Moonlight	94F	Madden	Victoria	Occurrence
Buzzer	93J	Wedge	Montana	Virginia K	Occurrence
Empress		103A	Nugget		
Fish Lake	Canadian Tungsten	103B	Portland	104B	
Fish Lake (east)	93K	103C	Silver Basin	Occurrence	
Motherlode	Bay	103D	Silver Horde	Cantu	
Warren Charlie	93L	103E	Single Hurst	Gold Cliff Premier	
92P		Wireless	Toulon	Hyder Skookum	
Bull Moose	Cassiar Crown	103G	Virginia	Riverside	
Lakeview	Dominion	Occurrence	wells	Scottie	
Moon	Glacier Gulch (north Side)	103H		Silver Leaf	
93A	Golden Eagle	Occurrence	Bell Mtn.	Unicorn	
Al	Heather	103I	Drumharvey		104P
Black Bear	Josie	Occurrence	Eagle	Edson	
Bren	Mohock	103J	Mascot	Tap, Gay	
Cariboo Thompson	Solo	Occurrence	Morning Star		104G
Cunningham And Cutler	Topley Richfield	Occurrence	Promise	Glenora And King	
Joy	93M	Golden Crown Group	Sedbird		104H
			Wright Gp.		
			103O		
			Mj And J1 Montrose		

AU (Lode) as Third or Lesser Commodity

82E	Black Fox	Number One	Skylark	82L	92C
Aldie	Bna	Olsen	St.eugene Mine	Bonnie Brae	Delphi
Au	Bosun	Ontario #2		Bonnie Brae	Edith
B.v.p.k.	Buster	Ottawa	82J	Brent	Flora
Banner(1.1199)	Cable	Palmita	Lucien	Chaput	
Bat	Canadian	Pontiac		Goodenough	92E
Beaver	Carnation	Porcupine		Keystone	
Blue Hawk	Colonial	Queen Bess	82K	Mosquito King	Brown Jug
Bluebell	Comstock	Queen Victoria		Mount Vernon	Indian Chief
Castor Fr.	Comstock(1.1814)	Rainbow	Alpha Group	Mount Vernon	Nowash River
Crystal Copper	Corinth	Red Rock	Beatrice	Payroll	Ormond #3(1.353)
Dictator	Cork-province	Revenue	Bennison Group	Rita	Star Of The West
Fan	Cultus Creek	Richmond-sureka	Beverly Mine	Silver Star	
G.h.	Curley, Noonday	Ruth-hope	Big Five		92F
Golconda	Daisy Group	Shamrock	Blackburn		
Homestake	Dayton	Silver Bear	Broadview	82M	Saramba
Homestake Fr.	Deer Park	Silver Bell	Caledonia	A And E	Big G
Imperial	Dewey	Silver Cup(1.6507)	Copper Cliff	Donnamore	Domineer No.22
Iron Horse	Dundee	Silver Dollar	Craig	Glen	Foremost Copper #3
Iva Lenore (1.1262)	Elkhorn	Silver Glance	Crecent	Homestake	Kallapa
Jo Dandy	Enterprise	Silver King	Delos	King Midas	Lynx(1.1660)
King Edward	Eureka	Silver Reef	Eureka	King Tut	Midway
Kingfisher	Fisher Maiden	Silver Ridge	Fidelity	Kuno	Paramount
Lumpy	Flint	Silverite	Gold Bug	Last Chance	Paul
Midway Mine	Fourth Of July	Silversmith	Hart	Mcgillvray Group	Prescott
Morning	Fourth Of July, Texas	Skyline	Imperial And Empire	Minnesota Girl	Seattle(1.700)
Morrison	Freddie Lee	Slocan Sovereign	Ixl Group	Mosquito King	Suprise
Mountain Chief(1.2393)	Galena Farm	Standard	Jumbo Group	Naomi	Yellow Kid
Okanagan	Gold Basin	Sullivan	Lancaster	North Star(south Showing)	
Pass	Grey Copper	Sunset	Lead Star	Silver King	92G
Pay Day	Hamilton	Sunshine	Millie Mack	Sitting Bull	
Rambler Fr.	Hattie	Surprise No. 2	Hobbs	Tom	Bor
Rocco Plata	Hb	Trade Dollar	Mollie Mac	Twin Mountain	Britannia
Roderick Dhu(1.598)	Hewitt	Two Star	Monitor		Cambrian Chieftan
Sailor Boy(1.1093)	Hundingar & Sunkadora	Union	Nettle L	82N	Copper Duke
Sally	Idaho	Utica	Outlet, Outcrop	Crown Point	Cox
Silver King	Iron Colt	Van Roi	Paystone Gp.	Dunvegan	Max
Silver Spot, Location 9	Ivanhoe, Elgin	Victor	Pooran	Jusbo	Standard
Stan	Kootenay Florence	Wahorse	Ptarigan	Seward	
Tam O'shanter (1.2405)	Leader	Whitehope	Puzzle Group	Tangler	92H
Union(1.1022s)	Lily B	Wintrop	Rambler		
Wellington	Mammoth	Wonderful	Ritchie Group	83D	Argentite
	Mammoth		Ruth-vermont	Blue Ice(east Zone)	Big Dutchman Gp.
82F	Mcpeak	82G	Sandy	Blue Ice(south-east Zone)	Big Sioux Gp.
A.u.	Meadow View	Occurrence	Scout	Blue Ice(west Zone)	Billican Group
Adams	Metallic	Big Bonanza	Senorita	Grizzley	Cousin Jack
Alamo	Molly Gibson	Big Chief	Silver Cup	War Colt #1	Day And Night
Alice Mine		Copper Belt	Splder		Diamond
American Boy	82F	Empire	Surprise	92B	Five Pissures
Apex	Monarch	Great Western	Tamarak	Copper Canyon	Golden Sovereign (1.15)
Arlington	Mountain Con	Hornet	Thunderbird Mines	Ralph (1.77)	Goldrop
Aspen	Nevada	Khadive Gp.	Towser	Victoria	Jessie
Baltimore	Noble Five	Kootenay King	True Fissure (1.1097)		Lucky Four(1.989)
Bell	Noonday	Lead	Vera		Nadlene
	North Wind	Nord	White Quail		

AU (Lode) as Third or Lesser Commodity

Morning Star(1.131)	Peerless	93D	Carroll	American Boy	Tasu
Morning Star(1.131)	Silver Bell		Cascade	Armagosa	
Rainbow	Silver Queen	Thunder	Cassiar Crown	Babine	103H
Red Star			Colorado	Black Prince	
Renfrew Gp.	92K	93E	Copper Queen	Blue Lake	How
Rio Grande		Occurrence	Cornu Copia	Brian Boru	Packsack
Silver Chief	Big Andy	Occurrence	Cronin Mine	Brunswick	
Silvertip	Colossus	Captain	Cup,delta?	Cap	103I
Skagit Giant	Copper Road	Emerald	Debenture	Comet	
Snow	Douglas Pine	Glacier	Duchess	Copper Basin	Occurrence
St. George	Hummingbird	Monarch, Silvertip	Duthie Mines	Driftwood	A - Clair
Sunmit	Linda	Nickel Plate	Empire	Golden Wonder(1.3322)	Annie Laurie
Sunset	Linda 3	Rainy, Gold Coin	Evelyn	Great Ohio	Beaver
92I	Mayflower	Stanley	Evening	Hecla(bluebird)	Bernaline
Aberdeen	Red Mountain	Sunset, Cariboo	Glacier Gulch (south Side)	Higgins	Black Bear
Bethlehem Copper - Snowstorm	Santana	Surel	Granisle Mine	Killarney	Bullion
Blue Jay, Bee		Tahtsa Range Occurrence	Hankin	Loudel	Caledonia
Canopus Group	92L		Hb, Aj	Newman	Dardanelle
Cliff	Bonanza Mine	93F	Hyland Basin	Red Rose	Galena
Copperado	Boyes, # 18 3	Hidden	Idaho	Rio	Gold Dose
Copperhead, Python	June	Tetachuck Lake	Iron King	Silver Bell	Grey Copper
Coronation	Major	Wee McGregor	Jack Rabbit	Silver Cup	Hercules
Fargo	Nootka		Jessie	Sultana	Hope Silver
Glossy	Old Sport	93G	King Tut	Suprise	Hughie
Goldplate		Pioneer	King, Jackpot	93N	Hunter
Guernsey-jersey Group	92M	Sinkut Mt.	Last Chance	Asp	Imperial Group
Last Chance	Ict	Thunder	Lava	Rondah	La Libertad
Last Chance	Lost Fiddle		Manie	Slide	Lead King
Leadville		93H	Mausoth	M And K	M And M
Maxine	92O	Bonanza	Matuss	M And M	Mag
Moly	Copper Mountain	93I	Mayflower	94C	Mayou
Mot	Mohawk	Copper Gulch	Neepawa	Chief Thomas	Northwest
Msg	Phair	93K	Rainbow	Porphyry Creek	Phoenix
Ok	Spokane	Gamble	Rico Aspen	94D	Poor Boy Group
Sallus	92P	Radio Gold	Santa Maria	Goodridge	Ptarigan
Star	Ballantyne Mine?	93L	Sil-van Mine	Kaza Copper Ltd.	Quartz Silver
92J	Lemieux Creek	Occurrence	Sil-van Mine (duthie)	Kli	Seven Sisters
Arizona	Red	Occurrence	Silver King	Marnot	Shenandoah
Astra	Sonja	Success	Silver Lake	Omineca Fault	Silver Mitts
Boulder		War Eagle	Silver Queen	94E	St.elmo
Copper Queen	93A		Snoeshoe	Firesteel	St.paul
Eagle	Occurrence	Occurrence	Starr	Spartan	United St.croix
Gem	Dj, Golden Zone	Occurrence	Strathcona		Windfall
Gold King	Gorrie - Cornish Ledges	Occurrence	Success	94E	Zona May
Grey Rock	Pittmaa	Occurrence	Vancouver (lone Star)	103B	
Griswold	Silver Boss	Occurrence	War Eagle	Lily	103J
King		Occurrence	93L	Lucky Seven	Occurrence
Li-li-kel	93B	Occurrence	Whitewater	103C	103P
Margery	Cousin Jack	Occurrence	Yukon		Acadia
Hoffat		Occurrence	Zap, Big Four		Black Bear
Olympic		Occurrence	93M		Black Hills
Patrick		Cariboo Ptarigan, Car, C.p.			Climax

AU (Lode) as Third or Lesser Commodity

AU as First Commodity, AG Present

Excelsior & Eagle	Hobo	82E	Lookout And Mountain View	Center Star	Mabel
George E	Indian Mine		Loumark	Centre Star	Harrison, Maryland
Glacier Creek	Inel	Occurrence	Nak Siccar	Chapleau	Mary
Golden Crest	Iskut Silver	Alpha		Christine	Max And Jennie
Hunter Group	Mineral Hill Mines Ltd.	Arlington (1.2596)		Clubine	May Blossom
Jackie-mos2	Silver Basin	Athelsran		Columbia	Mayflower
Keystone	Silver Coin	au		Daune	Midnight
Lakeview		Baldy, Rice	Maple leaf	Daylight	Midnight
Le Roy	104G	Bank Of England	Marguerite (1.836)	Dick	Miracle
Little Joe		Barnato (1.2848)	Marshall (1.2388)	Dumas	Moran
Little Wonder		Berlin (1.1157)	McKinlay (1.140s)	Echo Gp.	Morning Star
Mollie B	Devils Elbow	Bev, Lloyd, Den	Molly Ginson	Elk	Mota
Molly B	LK	Boomerang	Mono (1.2265)	Euphrates	Motherlode
Monday Group	Stikine Copper	BS	Nagra (1.1356)	Excelsior	Myrtle
Moosa		Buffalo (1.920)	Nipper	Fann	Navada
Prince George	104I	Buller (1.3242)	NO. 7 (1.623)	Fern	New Gordon Mining Co.
R.h.s.	Winco	Butcher Boy	North Star (1.1165)	Freddy	New Victor
Redwing		Caledonia (1.1756)	Panorama	Gold Belt	New York Central
Silver King	104J	Cannon Ball (1.1036)	Prize No. 2 (1.120s)	Gold Cup	Nickel Plate
Surprise		Cariboo-amelia	Kathaulien	Gold Cup	Nugget
Thada Bara, Bebe Daniels	Pinto	Carwi	Reno	Gold Hill	OK
Union		Colby # 16 2	Rosemont	Gold Hill	Ore Hill
Vezona Basin	104K	Crescent	Silver Dollar (1.2842)	Gold King	Oro Fino
Wolf		Dane Gp.	Skipper	Gold Ledge	Parrier
Wolf	Janet-vega	Datum	St. John	Golden Age	Porto Rico
	Thorn	Dividend-lakeview	St. Lawrence (1.1255)	Golden Eagle	Queen
104A	104N	Divine	Standard	Golden Hill	Reliance
		Dusty Mac	Sunset	Goldstream, Bearpaw	Reno
Aztec		Dyzano	Tin Horn	Good Hope	Rice
Barite Gold Mines	Atlin Ruffner	Z.p.u.	Tories	Good-hope	Rose
Bear Pass Mining Syndicate	Dundee	Elkhorn Fr. (1.297s)	Tripoli (1.1613s)	Gopher	Scranton
Bornite		Elkhorn mine	Tuesday	Granite-poorman	Second Chance
Emperor	104P	Ellsworth	Tye	Great Eastern	Second Relief
George Copper		Enterprise Gp.	Victoria-old England	Harriet	Shiloh
Goat	Graham	Ethiopia (1.932)	War Eagle	Hollinger	Silver Crest
Kansas	Haskins Mtn.	Eureka	White Bear	Homestake	Silver Dollar
Lith	Wildcat	Eureka (1.1145)	82F	Hummingbird	Silver King
Lucky Frenchman	114P	Gateway	Alpine	Inez	Silver Ranch
Maybe		Goldconda Fr. (1.2149)	Anderson	Irene	Silver Tip
Mc	Alu	Gold Bug (1.895)	Annie		Southern Belle
Montreal	Canadian Verdee	Gold Drop (1.1415)	Arizona		Spitzee
Old Chuz	Lunar	Golden	Arlington		Spokane
Ore Mountain Mining	Maid Of Erin	Golden Crown (1.600)	Athabaska	Ixl	Spotted Horse
Palmy	Mansfield Mountain	Gold, Ken, Mark	Baltic	J.C.	
Portland, Ibez	Mildred	Guilt Edge	Bayonne	Joker	
Rufus Argenta Mines	Sincoe	Guts	Bear	Josie	
Silver cliff		Hackia (1.2847)	Bear	Junbo	Star & Alma N
Todd		Helen	Bil Hecky	Keystone	Starlight
104B		Hummingbird (1.1369)	Blackcock	Kilo	Sterling
		Inland Empire (1.3880)	Bluebird	Kootenay Belle	Sumit
Boulder Creek		Jewel (1.850)	Bluestar	L.h.	Summit Bell
Bron		King (1.177s)	Bunker Hill	Lakeview	Tamarac
Cat 6		Lake	California	Le Roi	Udville
Fish Creek (upper)		Lakeside (1.1023)	Canadian Belle	Little Daisy	Ural
Granduc Mine		Little Duncan	Canadian King	Lone Silver	Vaiparaiso
			Catherine	Lucky Strike	Vancouver

AU as First Commodity, AG Present

Kay	Riwy (1.1765)	Hixson Creek	Croydon	Society Girl	Silverado
Lorne	Silta		Elizabeth	Ferrace	Whiskey Creek
Lucky Strike	Tagore	93H	Granite Basin		Windsor
Minto Gold Mines Ltd.	Van Isle		Hope	103J	Wire Gold
Northern Light	Venture	Acme	Ruby		
Pioneer	White Star (1.1031)	Aurum	Ruby	Eyde Pass Mine	104A
Ranger		Buz		RK	
Shulap	92N	Cariboo Gold Quartz	94D	Surf Point Mine	Dalhousie, Rock Of Ages
Spokane		Chisholm	Occurrence		Independence
Summit	Argo	Free Lance	Bruce	103O	Little Wonder
Summit	Blackthorn Mtn.	Hard Cash	King Georga	8c Verda	Meziadin
Warman	Lanqira	Independence	quyzvwx (oa-ker)	Bishop	Moonlight
White And Bell	Morris Mine	Kitchener	Solo	Emma Gordon	Roosevelt (grizzly)
	Mountain Boss	Mosquito Creek		Fish Cr. (lower)	Spider
	Orwill	Nyctile	94E	Georgia River Gold	Treaty Creek
92K		Tipperary	Chappelle	Last Shot	
Alexandria	92O	Waspita		Lucky Boy Ext.	104B
All Up		Westport		Mountain View	
Amethyst	Chisholm		103A	Pedro Georgia (im)	Big Missouri
Commonwealth(1.277)	Hi Do	93I	Hebrew	Six Mile	Butte
Constitution	Massena Group		103G		Daly
Dorothy Morton	No. 1 Vein	Done Mountain		103P	Daly Alaska (lower)
Galea	Red Bird Vein	Gold	Cunshewa	Albany	Daly-alaska (upper)
Hope Gp.	Robson	Gold Brick	Helper Lake Property	Bi-metallic	Florence
Loughborough	Taylor-windfall	Sto Grande	Sourasaster	Black Bear	Globe
Lucky Jim	Vick	S.K.		Bullion Delnote	Gracey
Ophir	92P	Sk(Dabine Gold)	103H	Cascade Falls	Halport
Red Cap				Copper Cliff	Hercules
Shawrock	Fortuna	93H	Stewart	Copper King	Lion
Spider	Gold Hill		Surf Inlet	Dynamiter	Mackay, Cam
Trilby	Hamilton Creek	Sabine	Wells Claims	Elkhorn	Pioneer
Union Gp.	Hidden Creek	Fortune Hill		Fraser	Portland
White Hope	Mahood Lake	Macdonald	103I	Gloria	Premier Extension
	Savona Gold Mine	O.K.		Gold Leaf	Rainbow
92L	Vid 27	Silver Standard	Bear	Gold Reef	Salmon
Alice Lake	Vidette Mine	Silverton	Beaver	Goldore	Salmon Gold
Churchill	Windpass # 1	True Pissure	Black Bull	Golskeish	Sib
Churchill		Victoria	Black Wolf	Granby Point	Silbak
Cordova	93A		Canadian Swede	High Grade	Silbak Premier
Ehatset		Occurrence	Comstock	Homestake	Silbak Premier Mines
Farris	Bon, Park, Round Top	Occurrence	Eagles Nest	Homestake Group	Silbak Premier Mines
Golden Gate	Cariboo-hudson	Occurrence	Fiddier	Hornor	Titan
Golden Horn	Corban	Occurrence	Gold Cap	Iron	Union
Golden Peak (1.1035)	Gisco	Occurrence	Hawk	L & L	Woodbine
Goldfield		Occurrence	Hawk Bear	Laddie	Yellowstone
Goldspring	93E	Occurrence	Helen	Marmot Metals	104G
Ixl	Ear Lake	Occurrence	July	Mastadon	
King Midas	Harrison	Don Group	Margarite	Morning Star	Kona
Lone Star (1.1052)	Lab	Erickson	Martin	Phoenix	Kona
M Group	Smith, Nash	Fairview	Motherlode	Portland Canal	Lucky Strike
North Fork		Farrell	Scenic	Prosperity And Porter Idaho	Mountain Goat
Paystreak	93G	Lust Dust	September	Rosalea	
Peerless		Motherlode	Silver Bow	Ruth & Francis	104K
Prident	Cayenne #2	94C		Saddle	
Prosperity (1.1801)					

AU as First Commodity, AG Present

Highland Boy
 Lucky Strike
 Maidas
 Manville
 Mohawk
 Polaris
 Polaris-taku
 Potlatch
 Tulsequan Chief

104H

Bald Peak
 Big Horn
 Callaghan
 Engineer
 Gold Cup
 Gridiron
 Happy Sullivan
 Jessie
 Rupert
 White Moose

104N

Occurrence
 Cornerstone
 Lakeview
 Pictou

104C

Pagi

104P

Cornucopia
 Gold Hill
 Jennie
 Red Rock
 Rocky Ridge
 Snow Creek Gold Mine
 Turmoil
 Vollaug

114P

Occurrence
 Occurrence
 Occurrence
 Occurrence
 Occurrence
 Occurrence

AU as First Commodity, AG not Present

82Z

Occurrence
 Albion No. 2 (1.12489)
 Apex
 Australian
 Buckhorn (1.1107)
 Burnt Basin (1.1136)
 Fairview
 Gold Hill
 Gold Valley
 Greenwood
 Hedley Monarch
 Hill
 Ivy
 J
 John Bull (1.2051)
 Jones Placer
 Mak Siccar
 Messenger (1.121s)
 dinne-ha-na
 Morning Star
 Morning Star (1.2570)
 Mother Lode (1.1508)
 O.K. (1.573s)
 Orofino
 Rambler (1.2861)
 Rock Creek Placer
 Sailor
 Smuggler
 Star Of Hope
 Steamroller
 Twin Lakes
 Waterloo

82F

Big Horn
 Black Stone
 Bluestone
 Bonanza
 California
 Cariboo
 Cayote
 Clyde
 Columbia
 Cottonwood
 Donnybrook
 Eureka
 Fox Horn
 Gold Queen
 Gold Viking
 Golden Belle
 Golden Chariot
 Golden Drip
 Golden West

Great Western
 Hattie
 Hattie Brown
 Heather
 Homestake
 Iron Mask
 Jolt
 Kootenay
 Maid Of Erin
 Monte Cristo
 Mountain View
 Norway
 Novelty
 Old Timer
 Perry Creek
 Phoenix
 Red Elephant
 Royal Canadian
 Yashill

82L

Annex
 Bachelor
 Blue Hawk
 Blue Jay
 Cartwright
 Densy
 Falcon
 Gold Mtn.
 Grand Times
 I.o.u.
 I-x-l.
 Iron Pot
 Kly
 Last Chance
 Lost Treasure
 McPhail
 Milligan
 Morning Glory
 Polar Star
 Ruby Gold
 Sugar Loaf
 Zion (homestake)

82N

Carbonate Hill
 Caribou Ace
 Cholla Group
 Columbia
 Crown King
 Del Rey
 Glengarnock
 Harvey Group
 Highland Surprise
 Howe Run Lode
 Kingston Group
 Lade
 Nelson
 North Star
 Phoenix
 Red Elephant
 Royal Canadian
 Yashill

82G

Occurrence
 Boulder Creek Placer
 Commerce 3
 Commerce 3-4
 Commerce 8
 Dougherty
 Expander Mines and Petroleum
 Fisher Cr. Placer
 Lisson Creek Placer
 Little Sullivan
 Maus Cr. Placer
 Monile
 Moyie River
 Perry
 Fundata Mines Ltd.
 Wildhorse Golds Ltd.

82K

Alice
 Anaconda
 Bruce
 Brunswick

Carbonate Hill
 Caribou Ace
 Cholla Group
 Columbia
 Crown King
 Del Rey
 Glengarnock
 Harvey Group
 Highland Surprise
 Howe Run Lode
 Kingston Group
 Lade
 Nelson
 North Star
 Phoenix
 Red Elephant
 Royal Canadian
 Yashill

82N

Bryan
 Diamond E
 Nugget
 Quartz Creek Placer

92B

Bentley
 Floodwood Creek
 Goldstream Bridge
 Kennedy Flat
 Martin's Gulch
 Queen Bee (1.100g)
 Victory
 Wolfe Creek Placers

92C

Occurrence
 Occurrence
 Enterprise
 Faith & Doris
 Flo
 Kinsley
 Meade Creek Placers
 Rajet
 Sombrio Placers

92E

Occurrence
 Beach Gp.
 High Boy
 Mohawk
 Vivian

92F

Bessie B
 Brown
 Casino
 Cinnamon Bear (1.294)
 Corona
 Dawn
 Duke Of York
 Faith Lake
 Ferguson (1.1587)
 Free Gold
 McCulloch Creek Placer
 Morrison
 Roseberry
 Stannack
 West Columbia Placer
 Wt

92G

Maple Leaf

AG as First Commodity, AG not Present

Murphy-johnson	Marvel	Forty Thieves	Macquinna	Homestake	Beaver Pass Placer
Nutcracker	Montana	Gloria Kitty	Monitor	Jane (douglas Vein)	Canusa
Olympic	Montrose	Golden Gate	North Star (1.1716)	Jane (west Vein)	Davis Creek Placer
Oyster River Placer Mining	Morning	Grull	Omega	Jim	Dragon Mountain Gold Quartz
Potasa	N & B Salvage	Hearick Mines Ltd.	Pandora	Kitchener	Eight Mile
Red Rover	Nevada(1.79)	Holland	Peerless	Larson Cr.	Foster Ledge
Rose Marie	Newton Creek	Kelvin	Quatsino King	Lipsey Vein	Perkins
Seattle	Old Glory	Mix	Roper	Midas Vein	Pml 6433
Star Of The West	Patsy No.2	Native Son	Scrutor Gold	Monte Cristo	Pml 6708
Starlight	Pittsburg	Paymaster	White Quartz	Noose	Pml 6886
T-bird, Lily	Roche	Pilot	Zeb	Mount Burdett	Pml 7000
Victoria	roddick	Pioneer Extension	92N	Number One, Number Two	Pml 7263
Wanderer	Rusa-of-the-bull Pt.	Primrose	Occurrence	Saddle	Prosperine
Wreck Bay	Silver Moon	Reliance	Occurrence	Spitfire	Rainbow
92G	Slesse Creek	Royal	Blue Bell	Sterling	Richfield Cariboo Gold Mines
April	Speculator	Senator	Langara	Sunshine	Standard Location
Barkoola	Spokane	Short O'bacon	92O	Sylvain	Summit Creek Placer
Blue Lead	St. Patrick	Standard	Astonisher	Sylvain	Van Winkie
Pml 811	Star	Success	Elizabeth	Talbot	
Raccoon Is.	Steamboat Mtn. Gp.	Truax	Giant Vein	Timber Line	93I
Richfield	Utah	Tuscarora	No. 2 Vein	Wendie Claims- Bralco Gp.	Dawn
Ruskin Gold	Ward	Veritas	#	Wendie Claims- North Showing	
St. Paul	Yellowjacket	Waterloo	92P	Zone	93J
92H	92I	Wayside Mine	Eakin (3 Mile) Cr. Placer	93E	Occurrence
Occurrence	Occurrence	Why Not	Louis Cr. Placer	Core	Occurrence
Occurrence	Allies	Winchester Cosmopolitan	Plato	Riverside Gp.	Occurrence
Occurrence	Ashcroft	92K	Sweet Home	Shirley	McLeod Lake
Occurrence	Av	Blue Bells	Telluric	Surel Lake	Syndicate
Occurrence	Beatrice	Channe Is.	93A	Whitesail Outlet	93K
Occurrence	Clairdon	Cuba Silver	Occurrence	Whitesail Range	Occurrence
Occurrence	Criss Creek	Geiler	Antler Mountain	93G	Occurrence
Occurrence	Deadman River	Magnet	Bertha	Bellhol	Hiyou
Au	Hykaway	Martle And Hayden	Betty	Cottonwood	Oakla
Big Ben	Jamieson Creek	Shamrock	dianco Placer	Hannador Gold Ltd.	Stewart Lake
Brett	June	Sonora	Boulder Ledge	K	Van Decar Creek
Camp	Lytton Gold Prospect	Sunbeam	Bridger And Johnston	Toopville	93L
Defiance	Lytton Placer	White Pine	Canadian	93H	Occurrence
Diane	Manchester	92L	Cariboo-nordine	Occurrence	Glacier Gulch (gold-bismuth)
Ella	Martel	Amos Creek	P.s.wells	Occurrence	93M
Emigrant	Royal Inland	B Group	Gaver Gold Mines Ltd.	Occurrence	Babine River
Florence	Royal Star	Bobmac	Glenecho	Occurrence	Iel
Gd	Scottie Creek	Boden	Gold Recoveries Ltd.	Occurrence	Iel
Gem	Serpentine & Summit	Eclipse	Golden Horn Placer	Occurrence	Placer Gold Showing
Gem	Tranquille River	Extension	Gorrie - Crystal	Occurrence	Placer Gold Showing
Gold Coin	92J	Extension #4	Groan Creek Placer	Occurrence	Placer Gold Showing
Gold Cbpd	Alma	Extention # 4	Heoson	Occurrence	Placer Gold Showing
Gold Queen	Asple	Extention # 4	Hibernian	Occurrence	Placer Gold Showing
hedley Tailings	B & F	Extention # 4			
Home X	Butte-ixl	Extention # 4			
King Gp.	California	Extention # 4			
Lucky Strike	Comstock	Extention # 4			
Majestic	Dan Tucker	Extention # 4			
Maple Leaf		Extention # 4			
Marcotte Gp.		Extention # 4			

AU as First Commodity, AG not Present

93N	Banjo Fl-independence Garle Gold Ginger B Goldway Ingenika River McConnell Creek	Occurrence Occurrence Occurrence Alice Creek Black Jack Gulch Free Gold Germansen River Germansen River Harrison Creek Kelly Creek Mildare Gulch Kvanika Creek Lost Creek (placer) Hanson River Mosquito Creek Quartz Creek Silver-kenny Creek Slate Creek Tom Creek Twenty Mile Creek Twin Creek Valleau Creek Vital Creek	Occurrence Occurrence Alice Group Beanstock Group Big Oliver Brentford Dry Hill True Blue Usk Group Victor	Tsikhini Creek 104H P.m.l. 723 104I Alice Creek Bullion Creek Faulkner Creek Goldpan Creek Wheaton Creek 104J Dease Creek Defot Cr. Keystone Tahltan River Thibert Creek 104K Canyon & Bear Martha And Sinclair Silver Bird Silver Queen 104M Occurrence Canyon Creek Gleaner Graham Creek Placer Kirkland Red Rupert Sweepstake White Moose 104N Occurrence Anaconda Beavis Mine Birch Creek Boulder Creek Bull Creek Cartell Creek Consolation Creek Cracker Creek Davenport Creek Dixie Creek Feather Creek Fox Cr. Golden View	Horse Creek Imperial Jasper Creek Lincoln Creek Mckee Creek O'donnell River Otter Cr. Pine Creek Red Jacket Relief Rock Of Ages Claim Ruby Creek Slate Creek Spruce Creek Sunbeam Volcanic Creek White Star Willow Creek Wright Creek Yellow Jacket 1040 Ram 104P Dennis Creek Placers George Homestake Hopefull Hunter Klondike Pr. Mac McDane Creek Placer Nora Rosella Creek Placer Walker Creek Placer 114P Blizzard Placer Gold Cord Squaw Creek Placer Tat 1-4
93O	Bill Cust's Bar Nation River Bar Philip And Wheel Creeks Rainbow Cr. Tudyay Lake	Occurrence Occurrence Blue Mule Early Bird	103J Cape Fife Wren 103O Sc Group 103P Occurrence Beaver Ext. Lucky Strike Marmot Engrs. Nelson Patricia Rambler Wilby Willoughby Creek		
94B	Babe Blue Jacket Creek	103P Babe Blue Jacket Creek	104A Gold Bar No.1 Monitor Red Bluff Royal Irish Group		
94C	Branham Flat Gold Bar Pete Toys Bar	103G Banker Bull Swamp Gold Bug Oeanda	104B Alaska Premier Black Bear Gold Run High Ore Sulphurets Creek Unuk Jumbo Virginia		
94D	Occurrence Ha Ha Creek Halquinn Ingenika Gp. Ingenika River Jim May Creek Omneca River Pluto Polaris Red Dyke Stranger Thane Yeqa Cr.	103H Occurrence Banker Cordilla Group Cordillera Malcola Millbank Group	104C August Barrington River Bau Creek Bucks Bar Stikine Copper-lucky strike		
94E	McClair Creek Toodoggone River	103A Pacific Rim 103B Ellen Shuttle Island Placer Ticksey 103C Occurrence Occurrence Blue Mule Early Bird			

HG as First Commodity

82G Occurrence
Occurrence
Frankie 93K
92C Occurrence
Balsoral Centennial
Cin
92I Dad
Dickinson Mtn.
Geo
Brousseau K-belle-m
Charbonneau Merc, Cin
Cinnabar Prospect East Of Cop Pinchi Lake Mine
Columbia Toad
Copper Creek 93N
Copper Creek North Occurrence
Criss Creek Amy
Davis, S & T Bowleg
Hansen Bralorne Bb
Hardie Hill Bron
Hardie Mtn. Dan
Hurdy Houston (north)
Jane Kwanika
Last Chance Lil Group
North Pine Mariposite Creek
Sabiston Property Pam
Sharp Pine
Tunkwa Pole
92J Snell Gp.
Golden Eagle Sunrise (indato Lake Showing)
Marion Takatoot Lake
Paul Takla Mercury
Red Eagle Tchentlo Lake
92K Victory Gp.
Timothy 94C
92O Occurrence
Apex # 5 Occurrence
Bar C Occurrence
Cinnabar King Occurrence
Gb
Lorntzen
Manitou
Mugwump, Honda, Windfall
Phillips
Relay Creek Mercury
Silverquick Mine
Tungsten Queen
93J

HG as Second Commodity

92C
Sombrio Placers
93N
Germansen River
Germansen River
Kelly Creek
Kwanika Creek
Vital Creek

103F

Babe

HG as Third or Lesser Commodity

92C
Enterprise
92F
Hm
92O
Astonisher
94C
Thane
Vega

AB As First Commodity

82E Germansen River
Occurrence 104B
Boomerang Eagle Crag
82K 104G
Asbestos Mount Hickman
Asbestos
Tom 104I
82L Occurrence
Lone Star Occurrence
Occurrence
82M Asb 4
B
Eye
Occurrence Half Moon Lake
Monarch J
82N Jay
Kutcho Cr.
Illecillewaet Serpentine Creek
wheaton Creek
92H 104J
Wahleach Creek Occurrence
92I Dease Lake
Blue Dudidontu River
Green NW
Raft
Tuya
92J 104K
Cadvallader Mountain Occurrence
Mount Penrose Occurrence
92P Occurrence
Venus 8,9 Occurrence
Venus-back Ace
93G Magnet
Occurrence 104N
Occurrence
Occurrence Chikoida Mtn.
Sinkut Mnt. Cop
93K Focus Mtn.
Heli
O'keefe Mtn.
Pub
Occurrence
Mount Sydney Williams Asb. 104O
93N

AB As First Commodity

Atsutla Range
104P
Occurrence
Cassiar Asbestos Mine
Moon
Zus Mtn.
114P
Nadahini Mtn.

AB As Third or Lesser Commodity

82L
Chromé-vanadium Gp.
92H
Copper King
104I
Gb

NI as First Commodity

82E
Old Nick
82F
Occurrence
82K
Sb
82L
Zett
82M
Avola
92C
Sudbury Pacific
92H
Clayton
Diamond
Mammoth
Ni
Ni
Ni
Ni, Al, Ox
Nik
Ole
Pride Of Emory(1.793)
Swede
Victor
92I
Keefers
92P
Clinton-nickel
93A
Pontiac
Sovereign
93B
Ni Group

NI as Second Commodity

Williams
93G
Ray
93N
Ah Hoo Creek
103B
Johnson Nickel
103P
Haywire
104B
E & L
104I
Occurrence
Flat
Flat
Garnierite
Lux
104J
Al
Opal Lake Nickel
104K
Occurrence
Occurrence
104N
Ni
104P
Blue River Nickel
Nickel Creek
82E
Bubar
Bullion
Capco
Cobo
Mastadon(1.2384s)
Riff
82F
Blue Rain
Empire State
Tigar 1
Topaz
82G
War Eagle
82K
Jk, Mico
New Zone Copper
82L
Fly Hill
82M
Bex
92F
Nm
Lone Cone No. 13
92G
April
92H
Adco Silver
Bea
Hilton No. 1 And 2
Hilton No. 1 And 2
Ni
92L
Sinker
93G

Sinkut Mt.
93J
Nick
104I
Cobalt, Turn Pyrrhotite
Gb
104M
Anyox-granby?
104P
Al

CO as any Commodity

SB as First Commodity

SB as Second Commodity

AS As First Commodity

82F
Great Dane
82G
War Eagle
82M
Gabro
92C
Cottonwood
Tally
92F
Alexandria Mine
92H
Clover Leaf
Mascot Fr.
Nickel Plate
92I
Keefers
92J
Gem
92L
Dry Hill (1.1548)
Baqie (1.1154)
Lois
Sinker
93K
Tsitsutl Mountain Tin
93M
Rocher Deboule
Victoria
94C
Croydon Cr.
94E

Bower Creek
Garnet
94F
Stag
94K
Pink
103P
Haywire
104B
Granduc Mine

82K
Alps-alturas
92F
Silver Bell
92I
Clarke Prospect
92J
Occurrence
Golden
Grey Rock
Pathfinder
Rock
Stibnite
Wide West
92N
Ict
92O
Buster
Colt
93K
Bay
Mt. Nielsp
103F
Courte
Gospel
103G
Bella, Marino
104K
Occurrence
Occurrence
Anty
Banker Group
Council
Surveyor
104M

Lakefront
Oppenhoff
104O
Tan

92B
Victory - Westbank
92I
Criss Creek
Tunkwa
92J
Congress
Minto Gold Mines Ltd.
Reliance
Rock, Roy
Truax
92L
Climax
92O
Astonisher
Gb
Hill
Mugwump, Honda, Windfall
Relay Creek Mercury
Tungsten King
Tungsten Queen
93K
Stewart Lake
93N
Amy
103G
Cushewa
104K
Silver Bird
Silver Queen

92B
Occurrence
92F
Good Hope
Grizzly
92J
Native Son
93A
Bren
103B
Alder Island

AS as Second Commodity

82F
Robert E. Lee
82L
Blue Jay
92N
Home X
93N
Bowleg
Kwanika
94C
Pluto

AS As Third or Lesser Commodity	AS As Third or Lesser Commodity	SN as First Commodity	SN as Third or Lesser Commodity	WO as First Commodity
82F	Slocan Sunrise	82F	82F	82E
Bluebird		Pimaco, Cas	Hellroaring Creek	Occurrence
California	93N	Rose Pass	Humbolt	Pa
Maid Of Erin	Lust Dust	93K	Storm King	82F
New Jerusalem	94D	Tsitsutl Mountain Tin	Storm King	
Valparaiso			Topaz	
82L	Goodridge	104N	82K	Dodger
Falcon	103I	Silver Diamond	Tin City	Invincible
Monashee	Martin			Molly
82M	1030	SN as Second Commodity	82N	P.s.
Donnamore	Georgia River Gold		Klondyke	Pico
Mcgillivray Group	Pedro Georgia (im)		Snowflake	Sapple's Molybdenite
92H	103P	103H	Woolsey	Stewart
Aufeas	Dynamiter	Kiidala		Victory Tungsten
Mascot Fr.	Golskeish	104N	93M	82G
Nickel Plate	Whiskey Creek	Bub	Golden Wonder(1.3322)	Cedar
Snowstorm	104A	1040	Highland Boy	82K
92I	L18h	Ash Mountain	103P	Bee
Copperado	1048	Ash Mtn.	Morning Star	Sec
92L	Bron	Blue Light		82L
Churchill	Granduc Mine		104N	Dck
Lucky Jim	Portland		Boulder Creek	82M
Peerless	104I		104P	Boulder
92N	Dalvenie		Low Grade	82N
Feeney	104K			Ac
Mountain Boss	Polaris-taku			Ex
Orwill				Ex 26
92P				Ex 92
Lakeview				Ice
93H				92B
American Boy				Victory - Westbank
Barber Bill				92I
Cap				MOON
Daley West				92J
Erie				Bristol
Golden Wonder(1.3322)				Chalco 12
Great Ohio				Chalco 5
Silver Cup				GIN
Silver Pick				Lubra

WO as First Commodity

WO as Second Commodity

UR as First Commodity

UR as Second Commodity

920	104A	82F	103P	82E	82E
Tungsten King	Little Pat	Otter	Mollie B	Donen	Fan
Tungsten Queen		Piraco, Cas	Molly B	Fuki	
93A	104I	82G	Moly	Sand	82K
Cariboo Thompson	Ewe		104N	Sd #7 And #8	Ice 9
Cunningham And Cutler	Rye	Campsall		Sd 18 And 20	
Homestake	Wolf	82K	Boulder Creek	Sd 37	82L
Taylor Tungsten	104N		Candy	Sd 41	
93E	Occurrence	Cu	104O	82K	Spar
Deer Horn	Black Diamond	82M	Occurrence	Sta-tite	92J
	Bub			82L	Index
93G	North	Rio	104P	Sh	93F
	Thor			Val	
Burn	Tungsten	92B	Dome		Abe
	Whi	Victory	Pi, Joan		
93H	Whi 357			82N	93H
Claims Of Dowsett	104O	92H		Bullion	
Hardscrabble	Occurrence	Occurrence		G Zone	Northern Coal Mines Ltd.
	Ash Mountain			Rexspar	
93J	Ash Mtn.	92I		83D	UR as Third or Lesser Commodity
Canadian Tungsten	Blue Light	Last Chance		Verity	
		Led 31		92I	82P
93L		92P		Copperado- A6	Cariboo
Whitewater		Anticlimax A		Orlean	
				Rosyd	92H
93M		93A		93N	A.a.(1.1585)
Red Rose		Cariboo-hudson		Saoko	92I
				94N	Copperado
93N		93E		Wishing Well	92J
Chuchi		Gg		104N	Gen
Glo And Troy		93L		Fisher	92K
Tait Tungsten		Glacier Gulch Molybdenum		Husselbee	Radium
				Purple Rose	93M
94P		93M			Highland Boy
Pox Pass		Armagosa			Red Rose
		Blue Lake			Victoria
103I		Loudel			93N
Annie Laurie		103I			Lonnie
Joon		Phoenix			
White Bear					
103P					
Louise; Dot					