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DAVID MINERALS PROSPECT

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### INTRODUCTION

90-H-15

Limited and sporadic development work on some of the mineral occurrences within the present David Minerals property dates back to the turn of the century. This, with other more recent work, should be re-assessed in view of present metal prices and new developments in the general area.

It is the purpose of this brief to summarize known information and to set out a proposal for the further development of the property.

### LOCATION AND ACCESS

The claim group is located about 2 miles northeast of the Aspen Grove store, some 18 miles southeast of Merritt, and immediately east of B. C. Highway No. 5 which connects Kamloops, Merritt and Princeton. Coordinates for the property are Latitude  $49^{\circ}57'N$ , Longitude  $120^{\circ}34' W$ .

Most sections of the claimgroup are readily accessible from a complex of old logging roads which connect to Highway No. 5.

### FACILITIES AND CLIMATE

Road and rail facilities are located at Merritt. Merritt, with a population in the order of 6,000, provides normal supply outlets and an adequate labor-equipment pool. It is approximately 4 hours driving time

from Vancouver and possesses a private dirt air strip in excess of 3,000 feet long.

Hydroelectric power is available from the B. C. Hydro line serving the Brenda Mine and the Okanagan District. The line is located some 10 miles northeast of the property.

Water will be a consideration in the event production is indicated, but small lakes and sloughs are adequate for exploratory work.

The property is located in a plateau-like region at an average elevation of 3,700 feet with local relief approximately 300 feet. Precipitation at this altitude exceeds that in the semi-arid valley bottoms, but year round operation is feasible with little inconvenience for most types of development work. Snow cover persists from November through March, attaining an approximate depth of two feet in wooded sections.

PROPERTY

Title to 51 contiguous mineral claims  
located in the "Aspen Grove Area"

is held by David Minerals Ltd. Details concerning these full-sized and fractional claims are as follows:

1. By Bill of Sale from Gardner Smith Eldridge, 1919 Ocean Boulevard, Long Beach, California, U.S.A.

<u>Claim Name</u>	<u>Record Date</u>	<u>Record Number</u>
Halo #1	July 28, 1955	1363

<u>Claim Name</u>	<u>Record Date</u>	<u>Record Number</u>
Halo #2	July 28, 1955	1364
Halo #3	July 28, 1955	1365
Halo #4	July 28, 1955	1366
Halo #5	July 28, 1955	1367
Halo #6	July 28, 1955	1368
Broatch #1	November 21, 1963	21670
Broatch #2	November 21, 1963	21671
Broatch #3	September 22, 1955	1469
Broatch #4	September 22, 1955	1470
Chalco #1	September 22, 1955	1475
Chalco #2	September 22, 1955	1476
Chalco #3	September 22, 1955	1477

2. By Bill of Sale from Hans Haveroen, 3629 Cambridge Street, Vancouver, British Columbia.

<u>Claim Name</u>	<u>Record Date</u>	<u>Record Number</u>
Top #1	June 10, 1963	20910
Top #2	June 10, 1963	20911
Lou #11	September 27, 1963	21497
Lou #12	September 27, 1963	21498
Lou #13	September 27, 1963	21499
Lou #14	September 27, 1963	21500
Halo Fractional	July 28, 1961	14898
Halo #2 Fraction	July 12, 1963	21067
Magnus #1	July 20, 1965	24813
Magnus #2	July 20, 1965	24814
Magnus #3	July 20, 1965	24815
Magnus #4	July 20, 1965	24816
Magnus #5	July 20, 1965	24817
Magnus #6	July 20, 1965	24818
Ram A-1	July 20, 1965	24819
Ram #1	July 20, 1965	24820

<u>Claim Name</u>	<u>Record Date</u>	<u>Record Number</u>
Ram #2	July 20, 1965	24821
Ram #3	July 20, 1965	24822
Ram #4	July 20, 1965	24823
Ram #5	July 20, 1965	24824
Ram #6	July 20, 1965	24825
Ram #1 Fraction	September 23, 1966	32577

3. By Bill of Sale from David Chong, 450, 890 West Pender Street, Vancouver, British Columbia.

<u>Claim Name</u>	<u>Record Date</u>	<u>Record Number</u>
Touch # 1	April 12, 1966	29446
Touch # 2	April 12, 1966	29447
Touch # 3	April 12, 1966	29448
Touch # 4	April 12, 1966	29449
Touch # 5	April 12, 1966	29450
Touch # 6	April 12, 1966	29451
Touch # 7	April 12, 1966	29452
Touch # 8	April 12, 1966	29453
Touch # 9	April 12, 1966	29454
Touch #10	April 12, 1966	29455
Touch #11	April 12, 1966	29456
Touch #12	April 12, 1966	29457
Touch #13	April 12, 1966	29458
Touch #14	April 12, 1966	29459
Touch #15	April 12, 1966	29460
Touch #16	April 12, 1966	29461

Configuration of the total claim group is depicted in the "Chain and Compass Traverse", attached. The central area within the heavy dotted line has been legally surveyed, details being filed with the Surveyor General for British Columbia.

Particulars having reference to the mineral claims are on file in the

office of the Mining Recorder, Court House, Merritt, British Columbia.

## HISTORY

The Aspen Grove Copper Belt is an area of some ten miles in length by two miles wide which has received considerable, but irregular, attention during the interval from 1898 to the present time.

David Minerals holdings are centrally located within this belt and include those prospects referred to in various issues of the "Annual Report to the Minister of Mines" as the Cincinatti, Big Sioux and Golden Sovereign. In addition, several other groups of old workings are contained within the present parcel of mineral claims, on which recorded information is unknown.

On the Cincinatti claim, an old adit is said to have been driven 400 feet into a low hill from a mineralized exposure located near the bottom of a small gully. Samples taken by the Provincial Minerologist, and his staff, are reported to have returned values in copper from 1.1 to 2.3 per cent. Precious metal content was low. The adit is stated to have been inadequate to demonstrate the extent and nature of the mineral occurrence and an adit started at a lower level did not penetrate to the zone of mineralization. (Reference - Report to Minister of Mines, P. K226, 1916)

The Big Sioux claim is underlain by vari-textured volcanic flows and breccias of the Nicola group volcanic rocks. A number of shallow tren-

ches, shafts and open cuts are said to expose a wide area of erratic mineralization. Copper occurs as chalcocite, chalcopyrite and bornite. Although most of the exposed zones of mineralization are of lower grade, a dump from one shaft averages 11 per cent copper. (Reference - Geological Survey Memoir 243, P. 94, 1947)

At the intersection of two fracture systems on the Golden Sovereign claim, a shaft and some drifting is said to have encountered considerable native copper. (Reference - Report to Minister of Mines, P. C223, 1928)

In 1955, Mr. Hans Haveroen and others located a number of mineral claims which included the present holdings of David Minerals Ltd. During 1956-57-58, Noranda Exploration Ltd., undertook a program of mapping and evaluation on the present claim group as part of a wider program. A series of exploratory core holes was completed in 1959. Title to the mineral claims subsequently reverted to the owners.

In 1965, the property was under option to Friday Mines Ltd. Some 1,600 lineal feet of trenching by bulldozer, together with an approximate 750 foot core hole was completed.

Work recently completed by David Minerals Ltd., (N.P.L.), includes repair and extension of certain access roads, site preparation, and the coring of two drill holes to depths of 374 feet at minus 50 degrees and to 402 feet at minus 80 degrees. This work was undertaken on exposures

of intrusive diorite located on the westerly slope of a prominent hill in Halo #2 Fraction. Its purpose was the testing at depth of copper mineralization exposed in a number of old trenches and adits which are located on this claim and of which no recorded information is known. No other recent work has been undertaken in the immediate vicinity, the older workings having only recently been rediscovered.

**GEOLOGY**  
(Regional)

The area of interest is located in the Kamloops Mining Division, being centrally positioned in the northern portion of Geological Survey of Canada Map No. 888-A. The mineral claims lie between the Summers Creek Fault System to the east, and the Allison Creek Fault System to the west.

G. S. C. Memoir 243, by H. M. A. Rice, suggests that the Allison Creek, or Lake, Fault is an "en echelon" arrangement of closely related faults which involved the Allison granodiorite body, which is in places much crushed and altered. At other outcrops the Upper Triassic Nicola Group rocks have been crushed, leached and silicified along this fault system.

The age of faulting is postulated as having begun in early Jurassic time and continued into early Tertiary time. Folding in Nicola rocks is broken by the Allison fault.

Coast Range intrusions is the term assigned to the many plutonic bodies exposed in the map area. All are thought to be closely related, grada-



tional and of an approximate age. These Lower Cretaceous rocks were influenced by the existing fault systems, being subsequently disturbed by later fault action along zones of weakness.

**GEOLOGY**  
(Local)

The David Minerals Ltd. property near Aspen Grove is largely underlain by vari-textured and colored andesites and tuffs of the Nicola assemblage of volcanic rocks.

At least two bodies of grey granodiorite are intrusive into the Nicola rocks. The larger intrusive lies along the west side of Halo Nos. 1, 3 and 5 mineral claims. The smaller body is located near the east side of Halo Nos. 4 and 6 mineral claims.

The full extent and relationship of these intrusive bodies is not presently known. Both show occasional sulphide mineralization where exposed and have an appreciable magnetite content. Granitized andesite occurs with the granodiorite and the feldspar content of the intrusive is locally altered to yellow-green in color. *ep*

A north-south trending fault system traverses the Halo Nos. 2, 4 and 6 mineral claims, with the smaller grey intrusive and the pink body being astride the indicated fault pattern. An additional fault pattern trending N 60°E cuts the first mentioned fault system at the location of the south-

ern portion of the indicated outcrop of the pink granodiorite intrusive. The same fault marks the northerly outcrop of the larger grey granitic intrusive body some 2,400 feet to the west-southwest of the point of intersection of the fault pattern.

A preliminary photo-geologic study indicates that these fault patterns are readily visible on air photos and that the major fracture patterns have similar trends with discernable evidence indicating their continuance off the claim group.

Outcrops between the two grey granodiorite bodies indicate the presence of a breccia zone adjacent to a minor fault system with major movement parallel to the fault systems first described. Full extent of the brecciated area is not known, but a number of old workings (Big Kidd, Minister of Mines Report, 1901) expose the granitized andesite fragments contained in a mixture of granitized andesite and carbonates, which may also be intrusive. A somewhat similar fragmental rock, more clearly demonstrated as intrusive, was encountered in the holes drilled by David Minerals on Halo No. 2 Fraction.

Approximately one mile to the north of the area containing the above-referenced intrusive bodies, near the northern limit of the claim group, the southern exposure of a plug of pink diorite has been noted. This stock has an indicated dimension in the order of one mile in length by

some 2,500 feet in width. Where examined, the intrusive rock is notably low in quartz content and contains considerable epidote along fracture and joint planes. Some hematite with chalcopyrite was noted. The stock is on, or near, the projected trend of the north-south fault system which traverses the claim group.

Preliminary geologic reconnaissance has been conducted over an approximate one third of the claim group. Possibly one half of the area traversed has been mapped and detailed. Results of this work (after Noranda, 1956 and 1957) are shown in the enclosed Geological Detail drawing prepared for this report.

MINERALIZATION  
AND SHOWINGS (A)

The "Hill Zone" on which David Minerals Ltd. has just completed two core holes of 374 and 402 feet in length, respectively, has an exposed length of some 800 feet with a presently developed width of 150 feet. The mineralized intrusive diorite has not yet been delimited, being open in all directions.

Old adits and trenches demonstrate a vertical range in the order of 100 feet, while D.D. #2/66 proves continuation of mineralization over a vertical range of approximately 450 feet. This hole was collared midway on the slope of the hill at minus 80 degrees, being bottomed at 402 feet in mineralized diorite cemented breccia.

Shallow drilling near the crest of the hill is said to have returned an average assay approximating 1 per cent copper. A character sample taken from the dump of an old adit close to the collar of D. D. #2/66 had similar copper content with some silver and minor gold values. A random chip sample taken over the wall of the adit assayed 0.2 per cent copper and 2 ounces per ton in silver. This sample included material from the intruded volcanics as well as the brecciated and granitized rock exposed at the face of the tunnel.

Visual examination of the core from D. D. Nos. 1/66 and 2/66 show sulphide mineralization to be persistent over the total cored lengths, but with a pyrite content such as to make an estimate of copper content difficult. Selected intervals over the core from D. D. #2/66 are undoubtedly of economic grade, while the total core is probably sub-marginal. Assay returns will be required for evaluation of mineral values from this drilling.

Cursory examination of old workings shows encouraging amounts of copper in all locations examined. Mineralization includes pyrite, chalcopyrite and bornite, with minor amounts of asurite and malachite. The mode of occurrence of the silver is not presently known.

B. At the "Cincinatti" workings, the old 400 foot adit is now caved and inaccessible. Material dug from the dump at the portal of the adit was noted to contain pyrite, chalcopyrite and bornite. Hand specimens from

the dump are well mineralized, but it was not possible to obtain a representative sample for assay.

C. The Big Sioux and Golden Sovereign occurrences were briefly examined. Well mineralized material occurs on the dumps but sampling was not undertaken.

D. Other known mineralized occurrences were not visited because of limited time available.

### CONCLUSIONS

The sum total of all work undertaken to date on the Aspen Grove properties of David Minerals Ltd. has been directed towards exploitation of individual occurrences as opposed to a comprehensive program designed to provide information as to continuity and potential of significant and mineralized structural features. As such, much of the previous work has been inconclusive.

The mineral claims are well located as to access and geological climate. Known fault trends have provided channels for mineralizing solutions presumed to have originated from plutonic masses located along these lines of weakness, and suitability of the host rock for deposition of copper minerals is demonstrated by the presence of the many mineralized occurrences in the Aspen Grove copper belt. It remains for a systematic exploratory program to determine the presence of substantial mineral

concentrations and to determine their economic potential.

Although copper minerals have been sought as the main values, work to date has demonstrated that erratic but substantial values in gold and silver occur with the copper mineralization. The nearby Primer Group has similar precious metal content.

RECOMMENDATIONS AND ESTIMATED COSTS

Prevailing climatic conditions permit year-round activity for most

phases of the works program proposed below for the David Minerals property near Aspen Grove.

<u>A. Initial Phase</u>	<u>Estimated Cost</u>
1. Extend the existing base line to the north and south limits of the property. Establish a grid system over the entire area on 500 foot centers with stations at 100 foot intervals.	\$ 5,000.00
2. Prepare a suitable base map of the claim group for use with the various surveys.	1,500.00
3. Conduct a geochemical survey over selected trends and areas. Plot.	1,800.00
4. Conduct a magnetometer survey over selected trends and areas. Plot.	1,800.00
5. Strip and trench anomalous zones with dozer.	3,000.00
6. Complete geological mapping over the entire claim group.	8,000.00
7. Establish and maintain camp facilities for four man crew for three months.	4,600.00

	<u>Estimated Cost</u>
8. Clean out and sample existing adits and trenches.	\$ 4,000.00
9. Transportation and communication.	2,300.00
10. Supervision and reporting.	3,000.00
11. Office and overhead, contingencies.	6,000.00
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Total estimated cost, initial phase.	<u>\$41,000.00</u>

**B. Second Phase**

1. Evaluate results of all completed work. Report.	\$ 4,000.00
2. Induced Polarization Survey on specific zones.	15,000.00
3. Trenching, pitting, sampling.	5,000.00
4. Drill and core anomalous areas. Estimate initial program of 5,000 feet at \$10.00 per foot.	50,000.00
5. Camp maintenance (3 month period).	4,600.00
6. Transportation and communication.	1,800.00
7. Supervision and reporting.	3,000.00
8. Office and overhead, contingencies.	6,000.00
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Total estimated cost, second phase.	<u>\$89,400.00</u>

It should be noted that many of the various job items may be undertaken concurrently, depending upon availability of equipment and personnel. The total proposal, though extensive, is of a preliminary nature only and

its implementation may well be expanded or curtailed as indicated by results. It is estimated that the work proposal can be completed and evaluated by early summer, 1969.

Further effort would be undertaken contingent upon evaluation of results and a feasibility forecast based on indicated potential.



I DAVID MINERALS PROSPECT - DRAWINGS

Figure 1 Claim Map, Including Legal Survey

Figure 2 Geological Map, David Minerals Prospect