

GEOLOGICAL EXAMINATION

OF MINERAL SHOWINGS

DUKE CLAIMS #2, 4, 5 & 6

GREENWOOD MINING DIVISION

823/1W

Lat.: 49°08'N; Long.: 118°31'W

OWNER: BIG DUKE EXPLORATION

OPERATOR: BIG DUKE EXPLORATION

CONSULTANT: J. RICHARDSON, P.Eng.

AUTHOR: J. RICHARDSON

PERIOD OF WORK: 21-22 Aug.; 1-4 Sept./83

DATE SUBMITTED: 7 Sept./83

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

11,522

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- (3) Itemized Cost Statement
- (4) Author's Qualifications

GEOLOGICAL REPORT - DUKE MINERAL CLAIMS #2, 4, 5 and 6GREENWOOD MINING DIVISIONINTRODUCTION

A contiguous group of eight 2-Post claims (4N-S x 2E-W) were staked 22 August, 1982 and recorded 7 September, 1982. A north-south base line, 1700 m. in length, was established by a chain and compass survey and clearly marked at intervals of 50 m. throughout its length. Pace and compass traverses were made from several of these marked 50 m. points for various distances in order to locate and identify outcrops and vaguely reported mineral showings. A total of five samples was taken from pits and trenches and sent to CHEMEX LABS to be assayed for gold and silver. The location and extent of the mineral showings are indicated in Fig. 2 at a scale of 1:2,000.

LOCATION AND ACCESS

As shown in the Index Map (Fig. 1) and in the Inset in Fig. 2, the claims are situated on the west slope of Granby River valley some 16 km. north of Grand Forks and lie between Brown and Pass Creeks. Access is by paved road for 14 km. along the west side of Granby River to Brown Creek road, then for 2 km. on a 4WD trail to the south end of the claims. The trail meanders northerly through the claims to the vicinity of the shaft near the No. 1 Post of Duke #1 claim. The No. 2 Post of Duke #3 and #4 were tied in by a pace and compass survey from the junction of Brown Creek road with the Granby River road. Other Posts were located from the base line running north from the vicinity of the above-mentioned Post.

PHYSIOGRAPHY

The claims straddle the divide at an elevation of 1,050 m. between Brown and Pass Creeks. The south end of the property, a short distance north of Brown Creek, is at an elevation of 750 m. In the higher portions of the property, the surface is marked by large elongated north-easterly trending ridges of rock outcrop. Elsewhere the property is covered by surficial glacial deposits which do not appear to be thick except at the north end on the Pass Creek slope.

PROPERTY AND HISTORY

The property comprises eight 2-Post claims, Duke #1 to #8, (4 claims N-S x 2 claims E-W) which were staked on 22 August, 1982 and recorded on 7 September, 1982. Currently, the property adjoins to the south and east of Kenergy Resource Corp. claims which were staked subsequent to the Duke claims. The property is owned by Duke Mines, a B.C. incorporated company, who are also the operators. Although evidence of a moderate amount of development work was found, no record of this work, which was probably done during the boom period of the early 1900's, was found in B.C. Dept. of Mines Annual Reports because no former names of the property could be identified.

Sulfide mineralization, comprising 10% or more disseminated pyrrhotite with minor amounts of pyrite and occasional specks of chalcopyrite, was found in six occurrences over a length of about 450 m. They are shown in Fig. 2 at a scale of 1:2,000.

## GEOLOGY

Three days of pace and compass traversing by the author and one day prospecting by L. Rossi showed that the claims are underlain by a southerly salient of a large Coryell pluton that lies astride Granby River north of Grand Forks. The portion of this intrusive in the claim area is generally a uniform, medium-textured, grey colored, unaltered syenite of Paleocene or Oligocene age (Little, G.S.C. Maps 6-1957 and 15-1961). The only other type of rocks observed in the claims are a few narrow younger rhyolite and andesite porphyry dikes. Although G.S.C. Map 6-1957 indicates that the southern part of the Duke claims may be underlain by volcanic and/or sedimentary rocks of the Anarchist Group, no layered rocks were found anywhere on the several traverses.

During the course of the traversing and prospecting, six mineral showings were found over a strike length of about 450 m. All but one of the showings were developed by shallow shafts and/or trenches, evidently several decades ago. The showings were examined in some detail and four of them were sampled. For the most part the showings are in lower lying ground with only small areas of outcrop. Furthermore, most of the outcrops have been covered by the shaft dumps. Inasmuch as the shafts are now inaccessible, sampling comprised grab samples from the dump material. Outcrops of the Coryell syenite, if any, for some distances in the vicinity of the showings were examined to determine the geological setting of the deposits. A geological plan of the showings and vicinity, along with sample sites, is shown in Fig. 2 at a scale of 1:2,000.

Showing No. 1: This showing comprises a cribbed shaft of unknown depth as it is filled with water to 2 m. below surface. It was sunk in a rusty weathering outcrop of Coryell syenite mineralized with up to 20% pyrrhotite with occasional knots of pure pyrite up to 5 cm. in diameter and a few blebs of chalcopyrite. There are about 800 - 1,000 tons of rock in the dump, essentially all of which is mineralized to some extent. Sample No. 1 was taken of dump material with greater than the average amount of mineralization in order to get a "best value" reading of the possible gold and/or silver values in the sulfides.

The rusty weathering outcrop is partially exposed over a strike length of 9 m. at N.40 degrees E and a width of 3 m. A distinctive barren, brown-weathering rhyolite porphyry dike about 3 m. wide parallels the strike of the mineralization on the southeast. Although this dike is barren, similar dike rock was observed in the dumps of three of the other showings. It was noted that the mineralization here and elsewhere occurs in an albitized zone of the Coryell syenite. Much of the disseminated sulfides appears to have replaced the mafic minerals of the syenite.

Showing No. 2: This showing is located 85 m. at 305 degrees from No. 1 showing. It comprises a larger "J" shaped trench which is now caved except for a small exposure in the foot of the "J". Mineralization here is in albitized syenite similar to that in No. 1 showing but with much less sulfides. No sample was taken in this trench.

Showing No. 3: Again, little of the showing is exposed as the original outcrop is largely covered with dump rock from the shaft. The latter is about 10 m. deep to the water line and the dump comprises several hundred tons of rock, less

than one-half of which is estimated to be mineralized. The only exposed mineralization in place is on the inaccessible north wall of the shaft. As seen in the dump rock, the mineralization is similar to that in the previously described showings. A one meter wide andesite porphyry dike parallels the mineralization on the northwest. Also, the brown-weathering rhyolite porphyry dike observed in No. 1 showing is plentiful in the dump material. Sample No. 2 was taken from the dump.

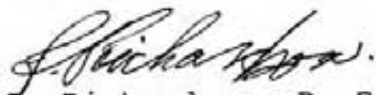
Showing No. 4: This showing is 35 m. northeast of Showing NO. 3. It consists of a shallow (small dump) water-filled shaft in rusty weathering Coryell syenite. The latter contains 5% to 10% disseminated pyrrhotite in a zone 15 m. long striking 330 degrees. Only about 25% of the dump rock is mineralized. No samples were taken here.

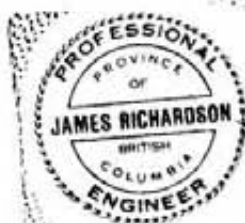
Showing No. 5: It comprises a rock trench of considerably later vintage than the other workings. The trench is 7 m. long x one meter deep driven in very rusty-weathering syenite. Here, the sulfide mineralization is not of the typical disseminated type but is present in 5 cm. stringers and ball-like masses of pyrrhotite. Some malachite stain was also noted. Sample No. 3 was taken here.

Showing No. 6: This is in another old shaft, 3 m. deep, in typical Coryell syenite. Mineralization here is different from that in all of the previously described showings as it consists of small, irregular quartz stringers and silicified syenite with bunches of pyrrhotite and pyrite. Two samples, No. 4 and No. 5, containing from 3% to 5% sulfides were taken of the dump material.

## CONCLUSIONS

- (1) The claims are apparently underlain entirely by Coryell syenite which is barren of mineralization except for the few occurrences mentioned in the foregoing.
- (2) The known showings appear to be small, isolated segregations of various amounts of pyrrhotite in unaltered syenite. No structure was observed in their vicinity that might affect their continuity. Although Showings No. 3, 4 and 5 are aligned in a northeasterly direction over a distance of 170 m., this may be only a fortuitous situation as no structural evidence could be found for this alignment. However, pyrrhotite is of sufficient amount in some of the showings that their continuity could be checked with a magnetometer. This should be done, along with more prospecting, if the assay results show significant gold and/or silver values.
- (3) Although the possibility that the showings are of minor size and frequency and thus of little economic interest, the relatively large amount of development work done many decades ago could suggest that there were encouraging precious metal values at depth.

  
J. Richardson, P. Eng.  
September 6, 1983



### Attachments:

- (1) Fig. 1 - Index Map - 1:125,000
- (2) Fig. 2 - Geological Plan of Showings, 1:2,000
- (3) Itemized Cost Statement
- (4) Author's Qualifications



References:

- (1) G.S.C. Map 6-1957 and Map 15-1961
- (2) B.C.D.M. Annual Reports
- (3) B.C.D.M. Mineral Claim Map 82E/1W
- (4) G.S.C. Memoir 56 - Franklin Mining Camp

ITEMIZED COST STATEMENT

Consulting Fees:

Field Work (1 - 3 Sept) 3 days @ \$400/day .....\$1,200.  
Travelling Time (31 Aug and 4 Sept) - 2 days @  
\$300/day.....600.  
Line Cutting (1700 m) (22 - 23 Aug) - 2 men.....280.  
Prospecting and 4W.D. Truck Rental - 1 day (L. Rossi)..120.  
Food Costs: B.R. & J.R. 22 - 23 Aug. - 4 man-days  
@ \$12.50/day.....50.  
J.R. 31 Aug. - 4 Sept. - 5 man-days  
\$ \$12.50/day.....62.  
Accommodation (B.R./day and J.R./4 days) 4 x \$28.50....114.  
Transportation: Vanc. to and from Grand Forks + four trips  
Grand Forks to and from property 855 mi @ 30¢/mile...254.

TOTAL EXPENDITURES..\$2,680.

*J. Richardson*



STATEMENT OF QUALIFICATIONS

I, James Richardson graduated in Geology from the University of Toronto in 1940. I worked for Cominco Ltd. from 1940 to 1980 as a Mine and Exploration Geologist and held various senior technical and administrative positions including District Exploration Manager, Chief Exploration Geologist, and Assistant to the Vice President of Exploration. During this period, extensive experience was gained in all types of mineral environments throughout North America, in Australia, Central and South America, and Europe. I have authored several papers on exploration strategies and tactics and made extensive studies on ore reserve analyses and supply and demand of mineral commodities leading to forecasting of short and long term metal prices.

Since retiring from Cominco in 1980, I have established a private mineral exploration consulting business in Vancouver.

I am a Fellow of the Geological Association of Canada, a Senior Member of the Canadian Institute of Mining and Metallurgy and a member of the Association of Professional Engineers of British Columbia.

*James Richardson*

A circular professional seal for James Richardson, a Professional Engineer in the Province of British Columbia. The seal features the text "PROFESSIONAL ENGINEER" around the perimeter, "PROVINCE OF" at the top, and "JAMES RICHARDSON" in the center, with "BRITISH COLUMBIA" written below the name.



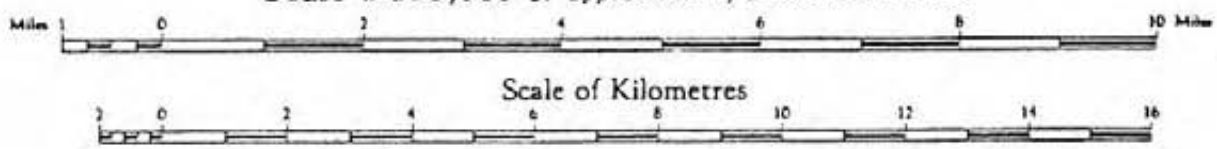
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# GRAND FORKS

BRITISH COLUMBIA

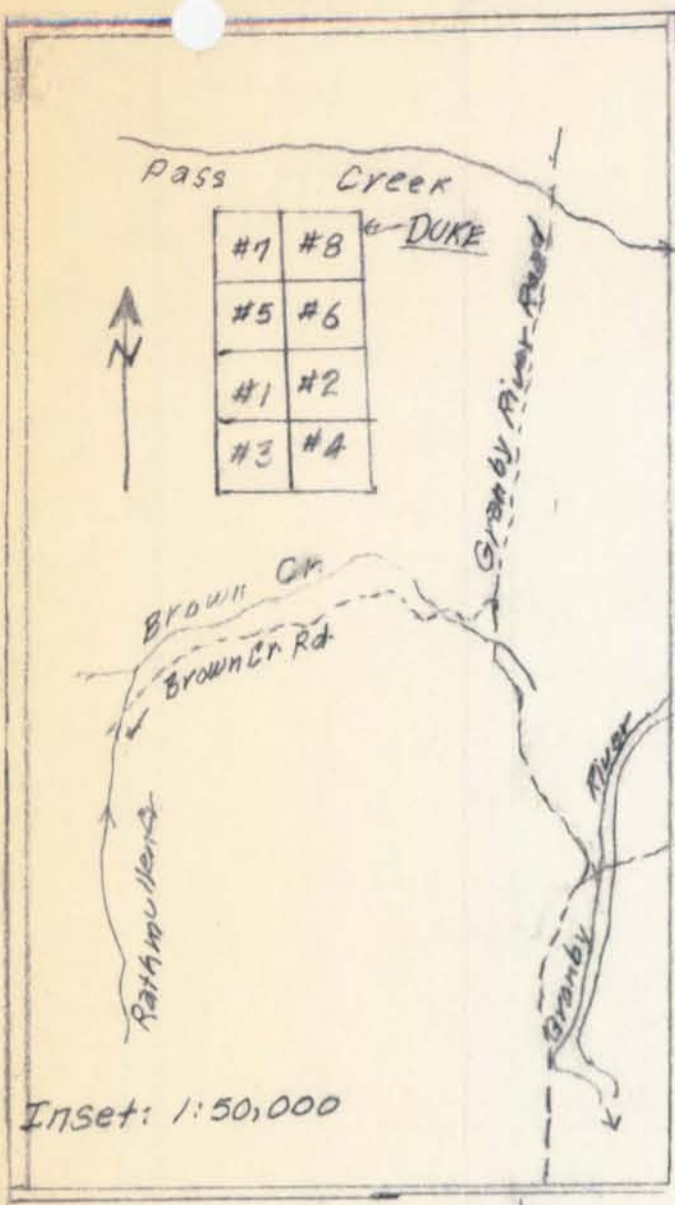
FIG. 1  
 82E/11W

Scale 1:125,000 or approximately 2 Miles to 1 Inch.



Magnetic Declination approximately 20° 58' East at centre of sheet, 1971.  
 Decreasing approximately 7' 45" annually.

Maps and indexes with price lists may be obtained from the Map Production Division, British Columbia Lands Service, Parliament Buildings, Victoria, B.C.



13+00N  
Extensive overburden on south slope of Pass Creek

GEOLOGICAL BRANCH  
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DUKE #8

Base Line



DUKE #5

DUKE #6

DUKE #2

DUKE #1

Large outcrops of uniform massive Coryell Syenite  
No mineralization noted

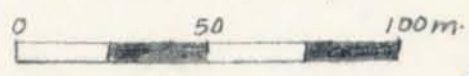
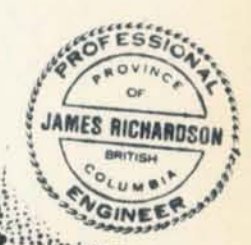
LEGEND & SYMBOLS

- #1 X+ - Sulfide occurrence
- v v - Syenite (Coryell)
- - Shaft
- Tr - Trench
- ⊙ - Sample Site

FIG. 2

DUKE PROPERTY  
MINERAL SHOWINGS

GREENWOOD M.D.  
82E/1W  
SCALE 1:2,000



6 Sep/83

J.R.

*Richardson*

DUKE #3

DUKE #4

Base Line