

*From the Bunker Hill Company*

*File*  
CONFIDENTIAL

MEMORANDUM

SEPTEMBER 30, 1954

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TO: R. H. MC CONNEL  
FROM: A. E. NUGENT  
SUBJECT: BANACKBURN PROPERTY

INTRODUCTION:

THE WAGNER AND BANACKBURN GROUPS WERE BROUGHT TO OUR ATTENTION BY JOE GALLO OF HOWSER, OWNER OF MOST OF THE CLAIMS. R. H. MC CONNEL MET WITH H. E. DOELLE, MANAGING DIRECTOR OF SHEEP CREEK MINES, IN NELSON DURING JUNE TO DISCUSS THE AREA AND, IN PARTICULAR, THOSE CLAIMS OWNED BY SHEEP CREEK MINES WHICH ARE ADJACENT TO THE BANACKBURN CLAIMS.

BETWEEN AUGUST 8 AND 10 I VISITED THE WAGNER AND BANACKBURN AREAS. I MAPPED AND SAMPLED IMPORTANT PARTS OF THE MAIN SHOWINGS AND EXAMINED THE REMAINDER.

ON SEPTEMBER 7 R. H. MC CONNEL AND MYSELF MET WITH H. E. DOELLE AND J. S. MC INTOSH, BOTH OF SHEEP CREEK MINES, AND JOE GALLO IN NELSON. FINAL TERMS FOR AN AGREEMENT WERE REACHED, SUBJECT TO APPROVAL BY J. D. BRADLEY OF BUNKER HILL AND BY SHEEP CREEK MINES BOARD OF DIRECTORS.

LOCATION OF PROPERTY:

THE WAGNER AND BANACKBURN GROUPS ARE IN THE PURCELL RANGE BETWEEN THE LARDEAU AND DUNCAN RIVERS FIFTY MILES NORTH OF KASLO, BRITISH COLUMBIA (SEE INDEX MAP). THE GROUPS COVER MUCH OF THE DIVIDE BETWEEN HEALY CREEK AND HALL CREEK (SEE CLAIM MAP).

THE WAGNER GROUP IS REACHED BY A TWENTY-ONE MILE DIRT ROAD FROM THE KASLO-BEATON HIGHWAY UP HEALY CREEK. THIS ROAD, BUILT BY SHEEP CREEK MINES AND THE PROVINCIAL GOVERNMENT IN 1932, WAS REPAIRED THIS PAST JULY BY JOE GALLO WITH FUNDS FROM SHEEP CREEK MINES AND BUNKER HILL.

THE BANACKBURN GROUP IS REACHED BY MEANS OF FOUR MILES OF VERY STEEP, POOR TRAIL FROM THE DIVIDE BETWEEN HEALY AND HALL CREEKS. A ROAD HAS BEEN STARTED FROM THE DIVIDE TO BANACKBURN BASIN BUT LACKS THREE MILES TO BE COMPLETED.

HISTORY AND OWNERSHIP:

THE PROPERTIES WERE STAKED IN THE LATE 1800'S AND SOME DEVELOPMENT WORK WAS DONE UNTIL 1918. SINCE THEN NO WORK WAS DONE UNTIL JOE GALLO CLEARED THE TRAIL UP HEALY CREEK IN 1948.

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IN 1951 SHEEP CREEK MINES TOOK A LEASE-OPTION ON THE WAGNER AND BANACKBURN PROPERTIES. THEY BUILT THE HEALY CREEK ROAD, DROVE A SIX-HUNDRED FOOT DRIFT TO EXPLORE ONE OF THE WAGNER SHOWINGS, AND LOCATED SEVERAL CLAIMS IN BANACKBURN BASIN. TOTAL EXPENDITURES BETWEEN JUNE 1951 AND JUNE 1958 AMOUNTED TO \$116,000. H. E. DOELLE STATES THAT THE SHEEP CREEK MINES WAS ALSO OPENING THE MINERAL KING MINE AT THE TIME AND, UNABLE TO FINANCE BOTH EXPLORATION PROGRAMS, CHOSE THE MINERAL KING AS BEING MORE QUICKLY PRODUCTIVE.

IN 1954 GRANBY CONSOLIDATED EXAMINED THE BANACKBURN AND TOOK A LEASE-OPTION ON ALL CLAIMS IN THE BASIN BELONGING TO JOE GALLO AND SHEEP CREEK MINES. IN 1955 THE AREA WAS MAPPED AND THE SHOWINGS SAMPLED. EQUIPMENT AND SUPPLIES, INCLUDING A PACKSACK DRILL, WERE FLOWN INTO THE AREA AND DROPPED. A DRILLING PROGRAM WAS STARTED ON AUGUST 23 AND CONTINUED UNTIL SEPTEMBER 15 WHEN LACK OF SUPPLIES AND A SNOWFALL ENDED THE PROGRAM. GRANBY DROPPED THE OPTION, DESPITE A RECOMMENDATION BY THE GEOLOGIC DEPARTMENT FOR ADDITIONAL WORK IN 1956.

#### TOPOGRAPHY:

THE TOPOGRAPHY IS RUGGED. ELEVATIONS RANGE FROM 2000 FEET IN THE LARDEAU AND DUNCAN RIVER VALLEYS TO 8000 TO 10,000 FEET AT THE PEAKS. THE VALLEYS TRIBUTARY TO THE RIVER VALLEYS ARE STEEP-SIDED AND NARROW. ELEVATIONS AT THE BANACKBURN RANGE FROM 4500 IN HALL CREEK TO 7000 FEET ON THE SUPERIOR CLAIM AT THE BASE OF MT. ABBOTT; SHEER CLIFFS RISE FROM THERE TO THE PEAKS. GLACIERS COVER SOME OF THE CLIFFS ABOVE THE HEAD OF BANACKBURN CREEK AND GLACIAL DEBRIS COVER MUCH OF THE SUPERIOR CLAIM BELOW THEM.

TIMBER FOR MINING PURPOSES CAN BE OBTAINED IN THE VALLEYS.

WATER FOR MINE AND CAMP CAN BE OBTAINED FROM BANACKBURN CREEK, BUT WATER FOR MILLING WOULD PROBABLY BE OBTAINED FROM HALL CREEK.

#### OWNERSHIP:

THE PROPERTIES AND OWNERSHIPS OF THE CLAIMS IN THE BANACKBURN AREA ARE BEST SHOWN BY THE ACCOMPANYING CLAIM MAP. COLORS DIFFERENTIATE CLAIMS OWNED BY GALLO AND THOSE BY SHEEP CREEK. SEVERAL LOCATED CLAIMS (IN BLUE) WERE STAKED BY GRANBY, BUT WILL BE OPEN FOR LOCATION ON SEPTEMBER 12. SHEEP CREEK AND GALLO HAVE AGREED TO STAKE THEM JOINTLY.

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GEOLOGY:

THE ROCKS OF THE AREA ARE SCHISTS, QUARTZITES AND LIMESTONE SEDIMENTS OF THE HAMILTON FORMATION (GENERALLY CONSIDERED LATE PRE-CAMBRIAN). THESE ROCKS CONFORMABLY UNDERLIE AND ARE TO THE EAST OF THE BADSHOT LIMESTONE WHICH FORMS THE GREAT, JAGGED COMB OF THE "LIME DYKE".

THE MEMBERS OF THIS SERIES WHICH INTEREST US HAVE BEEN DESCRIBED IN THE GRANBY REPORT, OF WHICH WE HAVE A COPY; FOR THE PURPOSE OF THIS MEMORANDUM, THE RELATIONSHIPS ARE SHOWN ON THE ACCOMPANYING CROSS-SECTION.

THE MAP WORK DONE BY GRANBY INDICATES THE ROCKS LIE ON THE LIMB OF A GENTLY PLUNGING SYNCLINE WITH THE TROUGH TO THE NORTHEAST OF THE MINERAL SHOWINGS. A SYNCLINAL KEEL WAS OBSERVED IN BANACKBURN CREEK. THE STRIKE OF THE ROCKS IS ABOUT NORTH FORTY DEGREES WEST; DIPS ARE ABOUT SIXTY-FIVE DEGREES TO THE NORTHEAST ON THE HIGHER SLOPES, BUT FROM FIFTY TO TWENTY DEGREES BELOW 6000 FOOT ELEVATION.

DRAG FOLDS AND ROLLS ARE COMMON, PARTICULARLY IN THE SCHISTOSE MEMBERS.

ORE SHOWINGS OCCUR IN AT LEAST THREE, DISTINCT LOCALITIES: THE BANACKBURN "VEIN", THE SUPERIOR SHOWING, AND THE MINERALIZED QUARTZITE ON THE SHELACH NO. 1 CLAIM.

BANACKBURN SHOWING:

THE BANACKBURN "VEIN" IS IN REALITY A NEAR-HORIZONTAL PENCIL OF HIGH-GRADE GALENA. A CROSS-SECTION VIEW OF THE "PENCIL" CAN BE SEEN ON A BLUFF ABOVE THE ADIT TUNNEL. HERE IT IS FOUR FEET WIDE AND THREE FEET DEEP, AND APPEARS TO HAVE BEEN LOCALIZED IN A DRAG FOLD IN LIMESTONE IN THE FOOTWALL OF A BEDDING-PLANE FAULT.

THE "VEIN" HAS BEEN EXPOSED BY OPEN-CUTS AND A SHAFT FOR SEVEN-HUNDRED FEET. AN ADIT, NINETY FEET BELOW THE ELEVATION OF THE SURFACE SHOWINGS, WAS DRIVEN TO CUT THE "VEIN"; NO ORE WAS FOUND.

TWO SAMPLES OF THE BANACKBURN ORE WERE TAKEN BY MYSELF. THEY AVERAGED: 41 PERCENT LEAD, 21 OUNCES OF SILVER, 6 PERCENT ZINC, AND 0.33 OUNCES OF GOLD.

CALCULATING FROM GRANBY SAMPLES, THERE ARE TWO-HUNDRED TONS OF ORE READY TO MINE. THE AVERAGE WIDTH OF THE ORE IS 3.2 FEET; AVERAGE GRADE IS .08 OUNCES OF GOLD, 19.3 OUNCES OF SILVER, 31.7 PERCENT LEAD, AND 2.3 PERCENT ZINC. THE NET SMELTER VALUE PER TON IS \$121; TOTAL NET SMELTER VALUE OF THE DEVELOPED ORE IS ABOUT \$24,000.

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SUPERIOR SHOWING:

ABOUT TWO-THOUSAND FEET SOUTHEAST AND APPARENTLY IN LINE WITH THE BANACKBURN ORE IS THE SUPERIOR SHOWING. ALL THAT CAN BE SEEN NOW IS A LIMESTONE BLUFF COMPLETELY SURROUNDED BY TALUS BOULDERS. THE ORE IS ABOUT FIVE FEET WIDE AND IS MADE UP OF NUMEROUS PARALLEL STRINGERS OF GALENA AND SPHALERITE. A SAMPLE ACROSS THE VEIN CONTAINED 0.18 OUNCES OF GOLD, 6.9 OUNCES OF SILVER, 12.0 PERCENT LEAD, AND 0.9 PERCENT ZINC.

THREE TUNNELS HAVE BEEN DRIVEN BELOW THE OUTCROP, BUT ALL ARE NOW COVERED BY TALUS. JOE GALLO ASSERTS THAT THREE-HUNDRED TONS OF HIGH-GRADE GALENA ARE ON THE DUMP OF ONE TUNNEL AND COULD BE EASILY UNCOVERED.

SHELACH SHOWING:

THE MOST IMPORTANT SHOWING TO GRANBY AND, LIKEWISE, TO THE BUNKER HILL COMPANY AT PRESENT IS THE REPLACEMENT DEPOSIT WHICH PARALLELS THE BOUNDARY BETWEEN THE SHELACH NO. 1 AND BANACKBURN CLAIMS (SEE CLAIM MAP). IT IS A FINE-GRAINED LEAD-ZINC REPLACEMENT OF A BED OF LIMY QUARTZITE UP TO 35 FEET WIDE (SEE COLORED SECTIONAL VIEW).

THE EXPLORATORY WORK DONE BY GRANBY CONSOLIDATED WAS CONCENTRATED ON THE SHELACH SHOWING. THE RESULTS OF THEIR DIAMOND DRILLING, TRENCHING, AND SAMPLING WILL ONLY BE SUMMARIZED HERE.

GRANBY'S WORK EXTENDED OVER A STRIKE LENGTH OF 3400 FEET. OF THIS 3400 FEET, 1900 FEET WAS COVERED BY TALUS TOO HEAVY TO PENETRATE WITH EQUIPMENT AT HAND. OF THE REMAINING SECTION, AGGREGATING 1500 FEET IN LENGTH, 800 FEET WAS WELL MINERALIZED AND HAS AN AVERAGE WIDTH OF 7.2 FEET AND GRADE OF 0.8 OUNCES OF SILVER, 4.0 PERCENT LEAD, AND 0.8 PERCENT ZINC (SEE LONGITUDINAL SECTION).

THE WIDEST ORE SECTION IS THIRTY-FIVE FEET AND HAS AN ASSAY GRADE OF 0.8 OUNCES OF SILVER, 4.6 PERCENT LEAD, AND 1.1 PERCENT ZINC.

GRANBY ESTIMATED THE TONNAGE FOR THE 3400 FOOT LENGTH TO BE 1252 TONS PER VERTICAL FOOT AT 7.2 FEET WIDE, .05 OUNCES OF SILVER, 4.0 PERCENT LEAD, AND 0.8 PERCENT ZINC. THIS FIGURE DISREGARDED THE ONE, 35-FOOT SECTION, BUT ASSUMED THE TALUS-COVERED AREAS WOULD YIELD THE SAME PERCENTAGE OF ORE AS THE TESTED GROUND.

ELEVATIONS OF THE EXPOSURES RANGE FROM 6100 FEET TO 6600 FEET.

THE MINERALIZED ZONE IS NOT TERMINATED ON EITHER END BY ANY GEOLOGIC FEATURE.

ROLLS IN THE DIP COULD BE FAVORABLE AREAS FOR WIDER OR BETTER GRADE MINERALIZATION.

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CONCLUSIONS:

1. THE PRINCIPAL MINERAL ZONE IN THE BANACKBURN AREA IS THE SHELACH LOW-GRADE REPLACEMENT OF A BED BY DISSEMINATED GALENA. CONTINUOUS MINERALIZATION IS INDICATED FOR AT LEAST 2400 FEET ALONG THE STRIKE AND OVER A 500-FOOT RANGE OF ELEVATIONS.
2. A SMALL TONNAGE OF HIGH-GRADE ORE CAN BE MINED FROM TWO OTHER SHOWINGS, BUT ARE UNIMPORTANT BY THEMSELVES.
3. MORE EXPLORATORY WORK MUST BE DONE TO INCREASE THE INDICATED TONNAGE OR GRADE OF THE SHELACH REPLACEMENT BY EXTENDING THE LIMITS OF THE KNOWN SECTIONS BY DIAMOND DRILLING, TRENCHING, AND MAPPING.
4. A FOUR-MILE ACCESS ROAD MUST BE BUILT TO BANACKBURN BASIN BEFORE ANY EXPLORATORY WORK CAN BE DONE. IT WILL TAKE ABOUT TWO WEEKS TO BUILD AND COST LESS THAN \$5000 (SEE MAP OF PROPOSED ROAD); THE BRITISH COLUMBIA DEPARTMENT OF MINES MAY PAY HALF THE COST. *do*
5. IF EXPLORATORY WORK INDICATES SUFFICIENT ORE TO JUSTIFY DEVELOPMENT, THE OLD BANACKBURN TUNNEL CAN BE REOPENED; AT A LATER STAGE, TUNNEL SITES CAN BE LOCATED AT MUCH LOWER ELEVATIONS. HALL CREEK CUTS ACROSS THE PROJECTED STRIKE OF THE BED 1300 FEET BELOW THE ELEVATION OF THE LOWEST KNOWN EXPOSURE.
6. IF THE RESULTS OF THE DEVELOPMENT WORK WARRANT CONSTRUCTION OF A CAMP AND MILL IN HALL CREEK, A NEW, WATER-GRADE ROAD SHOULD BE BUILT FROM HOWSER, UP THE DUNCAN RIVER AND HALL CREEK. THIS ROAD MIGHT ALSO PERMIT EXPLOITATION OF OTHER PROPERTIES IN THE DUNCAN RIVER DRAINAGE. THE ROAD, ABOUT THIRTY-FIVE MILES IN LENGTH, WOULD PROBABLY BE PARTLY OR WHOLLY FINANCED BY THE BRITISH COLUMBIA DEPARTMENT OF MINES.

TERMS:

AT A MEETING IN NELSON ON SEPTEMBER 7 JOE GALLO AND H. E. DOELLE REACHED AGREEMENT WITH R. H. MC CONNEL ON THE FOLLOWING TERMS FOR THE CLAIMS IN BANACKBURN BASIN:

1. SHEEP CREEK MINES AND JOE GALLO WILL DEAL AS A UNIT, THROWING IN ALL PRESENTLY HELD CLAIMS AND AGREEING TO RE-STAKE CLAIMS FORMERLY STAKED BY GRANBY.
2. TYPE OF AGREEMENT WILL BE LEASE-OPTION.
3. OPTION PRICE WILL BE \$300,000. "PAYMENTS ON PURCHASE PRICE" (ROYALTY) WILL BE FIGURED AT TEN PERCENT OF NET SMELTER RETURNS AND WILL APPLY ON PURCHASE PRICE.

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4. \$3000 PAYMENT TO BE MADE TO JOE GALLO ON SIGNING OF AGREEMENT AND AN ADDITIONAL \$3000 EACH YEAR THEREAFTER DURING LIFE OF AGREEMENT OR UNTIL OPTION PRICE IS PAID. THESE WILL APPLY ON THE OPTION PRICE.

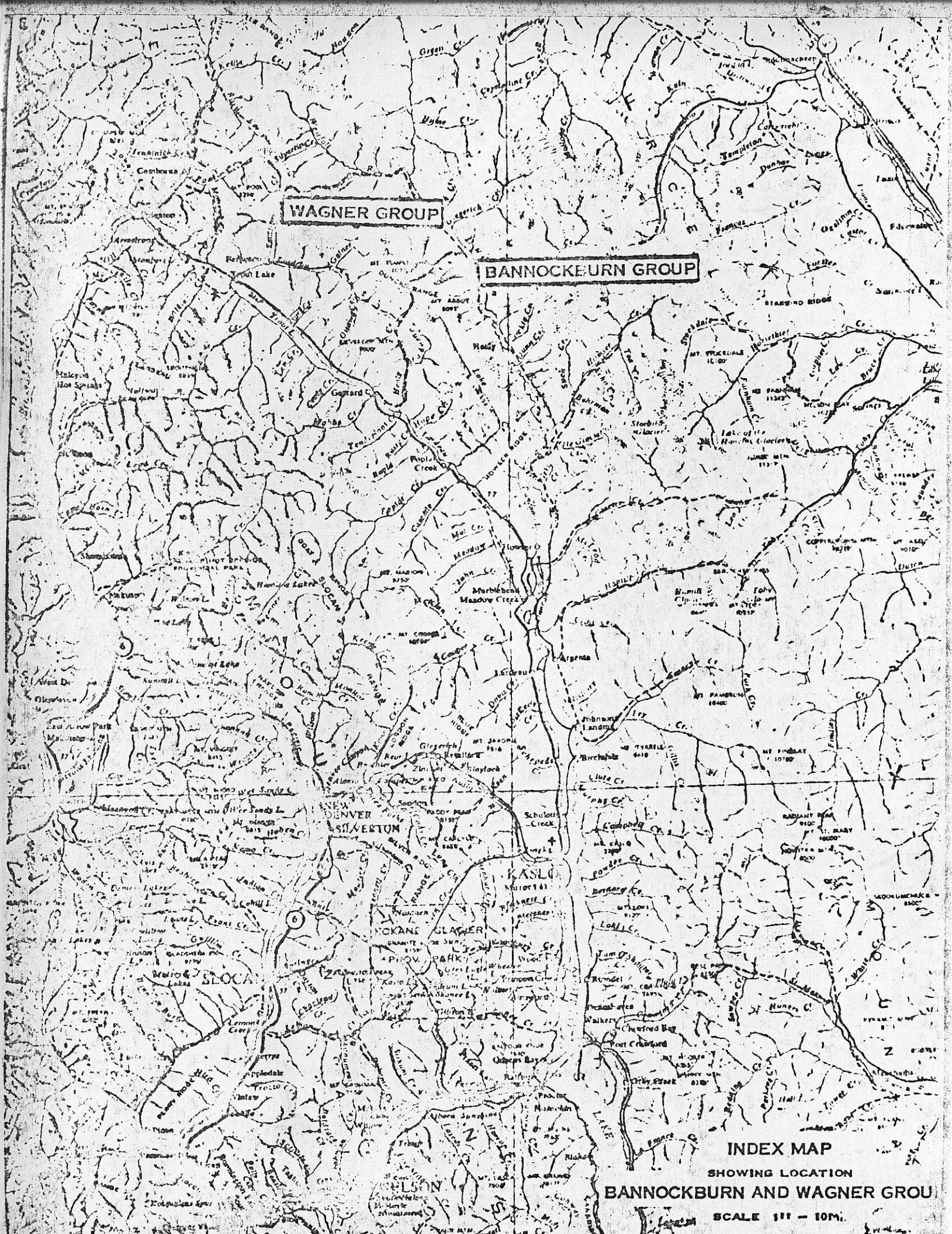
5. BUNKER HILL WILL HAVE TWO YEARS FROM DATE OF SIGNING OF AGREEMENT TO DO EXPLORATORY WORK WITHOUT OBLIGATION TO DO ANY MORE THAN NECESSARY ANNUAL ASSESSMENT WORK. AFTER THE TWO YEAR PERIOD, BUNKER HILL MUST DO \$25,000 WORK ANNUALLY.

6. BUNKER HILL AGREES NOT TO SHIP ORE DURING THE EXPLORATORY PERIOD FROM THE BANACK-BURN AND SUPERIOR VEINS UNLESS THE OPTION IS EXERCISED BEFORE, EXCEPT ON AN INDEPENDENT ROYALTY BASIS AMOUNTING TO TEN PERCENT OF NET SMELTER RETURNS AND PAYABLE DIRECTLY TO JOE GALLO IF ORE IS FROM THE BANACKBURN OR SUPERIOR "VEINS".

*Alfred E. Nugent*  
ALFRED E. NUGENT  
EXPLORATION GEOLOGIST

MSCH

CC. J. D. BRADLEY, W. G. WOOLF, G. W. MC DOUGALL



WAGNER GROUP

BANNOCKBURN GROUP

NEW DENVER  
SILVESTON

KASLO

MOKANE  
GLACIER

SLOCA

INDEX MAP

SHOWING LOCATION

BANNOCKBURN AND WAGNER GROU

SCALE 1:11 - 10M.