175

REPORT on GEOCHEMICAL SURVEY

- of -

PORTION of MINING CLAIMS known as DIVIDE GROUP

- of -

GRAHAM BOUSQUET GOLD MINES LIMITED

Survey actually performed upon -

CREEPER CHARLIE Claims Nos. 1 to 8 inclusive,

JORDAN Claims Nos. 1 to 6 inclusive,

HEBREW Claims Nos. 3 to 8 inclusive,

ISRAEL Claims Nos. 1 & 2 and Nos. 5 to 8 inclusive,

JERICHO Claims Nos. 1 to 8 inclusive,

MGH Claims Nos. 2 & 4,

CM Fractional Claim No. 4,

HWD Fractional Claims Nos. 1, 2 & 3

Location of the Divide Group would place it southwest of Longitude 120° west and Latitude 50° 30' north, or more exactly, within the rectangle formed by Latitudes 50° 29.75' and 50° 29.88' north -- and -- Longitudes 120° 59.97' and 121° 0.44' west, - in the Highland Valley, south of the main highway, south of Divide Lake and Indian Reservation No. 13.

All work was done under the direction of the writer who performed all the tests and recorded the results.

By -

Harry W. Darling

Harry W. Darling, B.Sc., P.Eng.
Consulting Mining Engineer.

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PLANS

#1 General Claim Map
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#4 Diagram West Grid
#5 Geological-Topographical Map
by Dr. R. M. Thompson, U. of B.C.
Assistant Carl Markerth, Student.
#6 Tabulation of Work (Envelope).

GEOCHEMICAL INVESTIGATION

in COMBINATION with some GEOLOGICAL & TOPOGRAPHICAL WORK as well as PARTIAL GEOPHYSICAL REFERENCES

(1) INTRODUCTION

The property was entered on June 10th by the writer with a crew of five men and the situation quickly found to be such that ordinary methods of prospecting would be of little value in view of the mantle of overburden obscuring the surface of all but the western portion. Glacial deposit of sand, gravel and boulders covered the rest of the area to unknown depths.

It was known that geochemical surveying had been helpful upon two adjoining properties, so that the writer determined to try such method of investigation, with additional geological work where possible and geophysical work where advisable.

The crew consisted of a student geologist with two years of field experience on the field staff of the Dominion Gulf Company, two experienced prospectors and two men to act as axeman and chainmen.

In order to do the work intelligently it was necessary first to make a complete compass-chain survey of the ground, noting physical features where possible and establishing grids for surveys. This was rapidly done with the use of two Brunton Pocket Transits (compasses) corrected for magnetic declination, complete with bracket and tripod, and two steel tapes.

The property sloped from the extreme eastern part at Witches Brook, upward to the south and west parts, rising about

two thousand feet in a distance of slightly less than four miles from east to west and of one and a half miles from north to south.

Three contiguous grids were laid out, called for convenience, East, Central and West. The East Grid was selected for initial work as the northern part would be over rather deep overburden and the southern part where rock cover was light, the idea being to see whether geochemical work would be useful.

(2) EAST GRID

Along the west boundary and near the east boundary of this grid are streams following an almost straight northward course. It is suspected that these streams may follow lines of faulting or shearing. To the north, on the property of Bethlehem Copper and to the south on property of Skeena Silver, such shears exist.

The grid was established by running a baseline north-south through the Initial Posts of Creepen Charlie Claims Nos. 7 & 8, which turned out to be within the boundaries of AGH Claim No. 4. This base line was extended south to Skeena Silver and north to the Indian Reservation. It was chained and picketed for 3,000 feet. Pickets were set at 200 feet intervals and east-west cross lines were run westward for 3000 feet, pickets for sampling stations being set at 200 feet intervals. 45,000 feet of cross-lines were cut, chained and picketed.

Samples were taken by digging pits with shovel, taking samples from bottom of pits and placing them in marked bags for delivery to the writer at the base camp.

(3) CENTRAL GRID

The Central Grid was established by running a baseline north and south through the Initial Posts of Israel Claims Nos. 7 & 8, northward to the north boundary of Israel Claim No. 8 and southward to the south boundary of Hebrew Claim No. 7, a distance of 5200 feet.

This baseline was chained and pickets set at 200 feet intervals, but in this case the crosslines were cut at 400 feet intervals, running westward 1400 feet and eastward 2800 feet, with pickets set at 200 feet intervals. When sampling, however, samples were taken upon the cross lines and at points in line with the crossline pickets halfway between the crosslines. This resulted in sampling at 200 feet intervals but reduced the number of crosslines to be cut by half. 69,200 feet of lines were cut,

Samples were taken by means of a two inch ship augur.

(4) WEST GRID

The West Grid was established by extending a north-south baseline through Initial Posts of Israel Claims Nos. 1 & 2, for 900 feet northward to the Bethsaida property and southward 3100 feet past the south boundary of Jericho Claim No. 6. This baseline was chained and picketed and the crosslines cut east and west, at 400 feet intervals. Lines running westward were from 1400 feet long at the north part to 2000 feet long at the south part. Pickets were set at 200 feet intervals for sampling. As in the case of the Central Grid, pickets for sampling were set between the crosslines at points halfway between those lines.

A total of 58,400 feet of lines were cut, chained and

H. L. S.

picketed.

Samples were taken with a 2" ship augur.

(5) ALL SAMPLING

In taking samples, wet spots were avoided as much as possible, the sample being taken sometimes as much as twenty feet from actual location of the picket. Wet samples and samples containing humus were discarded and duplicates taken at a point removed from the original. Doubtful samples were retaken. Doubtful samples were rerun for check.

It will be seen upon the grid diagram of the East Grid, the first one sampled, that as many as four samples were taken at some points, where doubtful results were obtained. Where this happened the average should be used. On other diagrams, average has been used.

Samples when taken were placed in strong manilla bags, which had been tested for metal. It was found that samples could not be rolled upon sheets which were taken from magazines, as either the paper or the print contained metal that salted samples.

It was also found that the water in all the streams contained metal, so that wet spots might give results which would be doubtful, perhaps introduced by flowing water.

(6) TESTING

Equipment and chemicals for testing were purchased from McPhar Manufacturing Company Limited of Toronto, Ontario, and of the type standardised by that company. The method followed was

as advised by that company.

Samples as taken were delivered to the writer and arranged in order upon a large table for overnight storage. Any moisture in the sample was more or less absorbed by the paper bag during the night. The following day, each sample was screened with an iron wire screen to remove pebbles and any vegetation. It was then rolled upon clean typewriter paper and a spatula used to fill the metal cylinder supplied by McPhar. This cylinder holds a fixed amount which is expelled by a weighted plunger from the tube. As samples were dry in most cases this plunger simply makes sure all the particles have been expelled.

The sample is expelled into a tubular glass vial, in this case Vial No. 60910-1, 1½ dram, 15.75 x 50 mm. - supplied through Kimble Glass Company of Toledo, Ohio. This tube is then placed in the slot found on the McPhar kit box.

To the sample in the vial, 1 ml.of McPhar High Purity Metal-free Solvent was added to the mark on kit box alongside the slot. The plastic cap, provided with waterproof insert, was screwed on the vial which was then removed from the slot and well shaken for a half minute, to dissolve all the metal.

A solution had been prepared by dissolving 100 mgs. of powdered dithizone in 100 mls. of McPhar High Purity Metal-free Chlorolene, to make a concentrated solution. Then 3 mls. of this concentrate had been added to 100 mls. of McPhar DHB solution. This dilute solution was the working solution. It

was found that these dithizone solutions deteriorated with age, light and heat and should be prepared freshly frequently.

To the soil samples in the solvent after shaking well, replaced in the slot, 1 ml. of the dilute dithizone solution was added, up to the mark alongside the slot. A minute amount of McPhar Demulsol is added and the vial re-capped and shaken for at least a half minute. The color of the solution in the vial then determines the amount of metal present in terms of zinc equivalents. If the color is that of the highest amount shown in the scale below, the test is repeated with twice or thrice the amount of dithizone dilute solution.

Results are interpreted according to the scale below which is found on the face of the McPhar kit box.

PARTS per MILLION - ZINC EQUIVALENTS

3	0	200	400	600	800	1000	1200
2	0	100	200	300	400	500	600
1	0	50	100	150	200	250	300
mls. Dithizone added	GREEN	BLUE GREEN	BLUE	PURPLE	RED PURPLE	PURPLE RED	RED

An ORANGE color denotes a very high metal content

Although the distinction of colors is not entirely satisfactory under poor lighting conditions and it would be a decided improvement if the manufacturers would add a color chart,

such as they have added to a later model for use in copper determination only, practice made it possible to determine the value of the samples, particularly after it was decided that no samples would be considered as important unless showing RED. Of course if other metals than copper were present, this kit would not be effective as a copper indicator. As no other metals appear to be present in the Highland Valley deposits, this testing was considered to indicate copper.

Results of all tests were recorded in a notebook and transferred to the diagrams.

(7) DIAGRAMS

As tie lines were cut for each grid at the sides, it was found that the crosslines were not absolutely parallel and in the case of the Central and West Grids, this fault has been shown. However, for practical purposes, that is, to return to the location of a station, this creates no great problem.

The Grids are made to the same scale as the General Map and the Geological-Topographical Map, so that they may be superimposed in order to locate tests with respect to claims, geology or topography.

The circles merely enclose a center at or near which sample was taken. Results in parts per million are noted inside each circle. Values exceeding 300 parts per million are coloured red and lesser values are colored pink.

Anomalies must be visualized where groups of red circles may be found.

(^) INTERPRETATION & CONCLUSION

If it were not for the fact that surface waters give high test for metal, more reliance could be placed upon the results, but the writer found that samples taken in wet or swampy areas almost always tested high. It is advisable to view such with suspicion. The safe approach is to believe that areas giving negative results may be eliminated from further investigation.

All areas returning high results should be investigated further. Check sampling may eliminate some of these. Where overburden is not too great, stripping by hand or with bull-dozer should be done. Where overburden is heavy, geophysical investigation is warranted, probably by magnetometer.

An attempt to evaluate geochemical work was made upon the East Grid where a north-south cluster of high values was found. Check sampling was done and values persisted. A bull-dozer was employed to trench along the line of values, in the belief that shears such as found upon properties both to north and south might exist. A trench over 700 feet long and over twenty feet deep was excavated. This was all in the well drained area between two north-south streams well below the level of trenching. Yet the tractor was "drowned out" by water coming up from the bottom of the trench, not from the sides.

Later on, when the magnetometer survey of the eastern claims was made, as may be seen in the report of that survey accompanying this report, an extension of that survey indicated

a zone of "lows" that could be interpreted as indicating a shear zone, along the trench.

A cluster of high tests in the extreme north western part of the claim area was investigated by close surface prospecting. There are many rock exposures in this area. A narrow shear zone was discovered carrying very appreciable amounts of copper minerals. A bull-dozer was put to work here and an extensive brecciated area exposed wherein several copper mineral bearing fracture zones were found.

These two instances emphasize the advisability and necessity of further investigation of all areas where geochemical sampling has indicated possibility of copper deposition in the underlying formations.

Respectfully submitted,

Harry W. Darling

Harry W. Darling, B. Sc.,
P. Eng. Ontario.

CERTIFICATE

I, HARRY W. DARLING, of the township of Clinton, County of Lincoln, Province of Ontario, hereby certify:

(1) That I am a Mining Engineer and Geologist and reside at Darfield Farm, R. R. No. 1, Beamsville, Ontario.

(2) That I am a graduate of the College of Mining, University of California, and have been practising my profession as such for fifty years.

(3) That I have no direct nor indirect interest whatsoever in the properties of the company referred to in the accompanying report, nor do I expect to receive any interest.

(4) That, however, I have purchased, on the market, shares of Graham Bousquet Gold Mines Limited, in limited amount (12,000) for which I paid cash.

(5) That the accompanying report is based upon personal examination and results obtained under personal direction of work.

(6) That I am a member of the Association of Professional Engineers of the Province of Ontario and have applied for registration with similar organization of British Columbia, and that I have been a member of the Canadian Institute of Mining and Metallurgy for thirty years.

Signed Harry W. Darling

Dated January 12th 1957
at Toronto, Ontario.

RECORD OF EXPERIENCE

Graduated with degree in 1907, after usual summer vacation work in mines and mills of California and Nevada.

After graduation assisted in construction of two mills in Nevada, later acting as general mill foreman of the largest mill in that state, that of the Pittsburg-Silver Peak, at Blair, Nevada, leaving to take part in the construction of the plant of Ray Consolidated Copper in Arizona.

Came to Canada in 1911 to install the Merrill Company equipment in mill of Dome Mines at South Porcupine, Ontario, later putting the plant into operation and acting as general mill foreman. Left to take job as shift-boss at the McIntyre Mine.

Was engaged as Mine Engineer by Porcupine Crown Mines at Timmins, became assistant manager and left to take management of Dome Lake Mines (later it became part of the Paymaster), but left to return to the Crown organization as Manager of the Reward Mine in California, during the first Great War.

Closing down the Reward when base metal prices fell at end of war, acted as Field Engineer for the Crown Reserve Mining Company, examining properties, then returned to the subsidiary Porcupine Crown as Manager, leaving to take over duties again as Field Engineer.

Opened office in Timmins and carried on good practice as Consultant and General Manager for several small companies, closing this work up to become Assistant Manager of the old Ankerite Mine, then operated by Goldfields American Development

Company which is a subsidiary of New Consolidated Goldfields of South Africa.

Was transferred to Field Engineer for Goldfields for some time, then sent to Venezuela to take part in an extended examination of New Goldfields of Venezuela. Remained as Mechanical Superintendent and then as Assistant General Manager, later as Acting General Manager, during extended illness of the General Manager.

Returned to Canada to open office again as consultant and practiced as such until outbreak of second Great War. During this period handled investment funds for group of French companies having offices in Paris.

Joined staff of Department of Munitions (being a naturalized Canadian) and served as Munitions Officer for period of the war, involving direction of manufacture of certain empty ammunition in sixty-three factories. Resigned on VE Day to return to mining and was engaged by companies sponsored by B. W. Newkirk, a Toronto financier. Remained as consultant and sometimes managing director of his several operations until a few years ago, when opened private consulting practice again.

At present, semi-retired.

APPLICATION of GEOLOGICAL, GEOPHYSICAL & GEOCHEMICAL SURVEYS as ASSESSMENT WORK on CLAIMS

The Mineral Act & Regulation of British Columbia provide that Geological, Geophysical and Geochemical Surveys as well as Physical work will be acceptable either singly or combined as assessment work.

On July 4th, 1956, it was necessary to cover seven claims, MGH Nos. 1, 2, 3 & 4 and SSW Nos. 1, 3 & 5, by payment of $700.00 as it had not been possible to do work thereon.

On September 4th, 1956, the progress of work was such that, by advice of the Chief Gold Commissioner, only Trenching and Roadwork was recorded covering grouped claims as follows:

Group "A" -	Creepen Charlie No. 2	- Roadwork -	$ 100.00
	Creepen Charlie No. 4	- Roadwork -	100.00
Group "B" -	Creepen Charlie No. 6	- Trenching -	300.00
	Creepen Charlie No. 8	- Trenching -	300.00
	Jordan No. 1 - - - - - -	Trenching -	100.00
	Jordan No. 2 - - - - - -	Trenching -	100.00
	Jordan No. 3 - - - - - -	Trenching -	100.00
	Jordan No. 4 - - - - - -	Trenching -	200.00
	Jordan No. 5 - - - - - -	Trenching -	100.00
	Jordan No. 6 - - - - - -	Trenching -	100.00
Group "C" -	Creepen Charlie No. 1	- Trenching -	100.00
	Creepen Charlie No. 3	- Trenching -	100.00
	Creepen Charlie No. 5	- Trenching -	200.00
	Creepen Charlie No. 7	- Trenching -	100.00
	Hebrew No. 1 - - - - - -	Trenching -	100.00
	Hebrew No. 2 - - - - - -	Trenching -	100.00
	Hebrew No. 3 - - - - - -	Trenching -	100.00
	Hebrew No. 4 - - - - - -	Trenching -	100.00
Group "D" -	Israel No. 1 - - - - - -	Roadwork -	100.00
	Israel No. 2 - - - - - -	Roadwork -	100.00
	Israel No. 5 - - - - - -	Roadwork -	100.00
	Israel No. 6 - - - - - -	Roadwork -	100.00
	Israel No. 7 - - - - - -	Roadwork -	100.00
	Israel No. 8 - - - - - -	Roadwork -	100.00

Group "E" -	Jericho No. 1 - - - - - - -	Roadwork	-	$ 100.00
	Jericho No. 2 - - - - - - -	Roadwork	-	100.00
	Jericho No. 3 - - - - - - -	Roadwork	-	100.00
	Jericho No. 4 - - - - - - -	Roadwork	-	100.00
	Jericho No. 5 - - - - - - -	Roadwork	-	100.00
	Jericho No. 6 - - - - - - -	Roadwork	-	100.00
	Jericho No. 7 - - - - - - -	Roadwork	-	100.00
	Jericho No. 8 - - - - - - -	Roadwork	-	100.00
Group "F" -	Hebrew No. 5 - - - - - - -	Roadwork	-	100.00
	Hebrew No. 6 - - - - - - -	Roadwork	-	100.00
	Hebrew No. 7 - - - - - - -	Roadwork	-	100.00
	Hebrew No. 8 - - - - - - -	Roadwork	-	100.00

1672.

GEOCHEMICAL SURVEY

A geochemical survey was performed upon -

Israel Claims Nos. 1, 2, 5, 6, 7 & 8.
Jericho Claims Nos. 1, 2, 3, 4, 5, 6, 7 &8.
Hebrew Claims Nos. 1, 2, 3, 4, 5, 6, 7 & 8.
Creepen Charlie Claims Nos. 1, 2, 3, 4, 5, 6, 7 & 8.
Jordan Claims Nos. 2 & 4, and parts of Nos. 1, 3, 5 & 6.
MGH Claims Nos. 2 & 4, west portions,

and by arrangement with H. E. Martin,

Fractional Claims,
CM No. 4, MWD Nos. 1, 2 & 3, the last two partially.

GEOLOGICAL-TOPOGRAPHICAL MAPPING

Where grids had been cut, geology and topography was mapped, but all of the Central Grid had not been completed when weather conditions interrupted work.

Israel Claims Nos. 1, 2, 5, 6, 7 & 8 - Completed.
Jericho Claims Nos. 1, 2, 3, 4, 5, 6, 7 & 8 - Completed.
Hebrew Claims Nos. 1, 2, 3, 4, 5, 6, 7 & 8 were done.
Jordan Claims Nos. 1, 2, 3, 4, 5 & 6 were done.
Creepen Charlie Nos. 5, 6, 7 & 8 were completed,
parts of 1, 2, 3 & 4.
MGH Claims Nos. 2 & 4, west parts done.

and by arrangement with H. E. Martin,

Fractional Claims,
CM No. 4 completed, MWD Nos. 1, 2 & 3 partially done.

GEOPHYSICAL SURVEY

Geo-Technical Development Company Ltd. was engaged to make a magnetometer survey of the eastern claims east of the East Grid and of a strip running across the East Grid. This Magnetometer Survey was chosen to cover areas deeply covered by glacial drift and to check some of the geochemical results in the East Grid. This work covered -

SSW Claims Nos. 1, 3 & 5.
MGH Claims Nos. 1, 3 & 4 and east part of No. 2.
Creepen Charlie Nos. 6 and Parts of Nos. 5, 7 & 8.

H. E. Z.

Jordan Claims Nos. 5 & 6, east portions.
HWD Claim No. 4. By arrangement with H. E. Martin.
CM Fractional Claim No. 1. By arrangement with H.E.Martin.
HWD Fractional Claim No. 5. By arrangement with H.E.Martin.

The costs of this survey applicable to assessment work were $1,410.09.

COST OF GEOCHEMICAL SURVEY

	EAST GRID	WEST GRID	CENTRAL GRID
	$	$	$
Surveying	108.48	160.10	208.00
Line Cutting & Chaining	877.58	934.03	1,485.11
Taking Soil Samples ...	170.19	416.92	339.52
Testing Soil Samples...	133.00	262.50	298.90
Supervision..	210.00	595.00	677.73
Total Labour	$1,499.25	$2,368.55	$3,009.26
Chemicals for Testing..	125.21	244.79	205.60
Total Cost..	$1,624.46	$2,613.34	$3,214.86

SUMMARY

East Grid	$ 1,624.46
West Grid	2,613.34
Central Grid... ...	3,214.86
Total	$ 7,452.66
Less Chemicals. ...	575.60
Wages & Salaries only. ...	$ 6,877.06

NOTES FOR REFERENCE

East Grid -	48,000 feet lines -	9.09 mi. -	$ 96.54/mile
West Grid -	58,400 feet lines -	11.06 mi. -	84.45/mile
Central Grid -	69,200 feet lines -	11.21 mi. -	132.48/mile
TOTALS -	175,600 feet lines -	31.36 mi. -	$105.12/mile

This compares with contract price in area of $100.00/mile. Central Grid was exceedingly rugged with thick growth. Actually 10,600 feet of line was cut beyond limits of the claims and not used; which would make actual cost of $98.82 per mile.

Samples were taken at 1392 stations at cost of 66.57¢ each. Prospect and check samples taken included in Supervision, approximately fifty (50) being taken, hence the cost of chemicals runs close to 40¢ per test.

Preparing grids, surveying, linecutting, chaining and setting pickets for future reference cost $5,256.03 including supervision and mapping or $3.775 per station. When lines were run 200 feet apart for East Grid cost was $4.43 per station, but when lines were run 400 feet apart and intermediate stations set between lines by pacing and no cutting for West & Central Grids, the cost was reduced to $3.618 and the cost of taking soil samples increased from 63.00¢ to 67.41¢ per sample.

COST OF GEOLOGICAL-TOPOGRAPHICAL SURVEY

Using the East & West Grids, Geology and Topography was noted and mapped, the Central Grid not being completed soon enough to do before weather conditions interferred. In mapping, all areas rising above the normal were investigated.

	WEST GRID	EAST GRID	HEBREW NOS. 1 & 2 & half of 3 & 4.
	$	$	$
Student Geologist	340.10	140.71	150.00
Engineer Geologist	495.00	185.00	125.00
Consultant(Dr.Thompson)	75.00		25.00
	$910.10	$329.71	$300.00

Special interest in Western Hebrew Claims where different type of rock found.

PAYROLL from JUNE 11th to OCTOBER 22nd, 1956 incl.

MARKERTH, Carl Student Geologist Surveyor	June 11th to August 31st - 82 days, $350.00 per month plus board @ $2.50 per day for 51 days... ... $400.00 per month plus board @ $2.50 per day for 31 days... ...	$ 710.83 $ 477.50
CARLSON, Bertil Linecutter Prospector Sampler	June 11th to July 31st - 51 days, $350.00 per month plus board @ $2.50 per day for 51 days... ... Extra $1.00 per day for 25 days..	$ 710.83 $ 25.00
NILSON, Even Linecutter Prospector	June 11th to July 31st - 51 days, $350.00 per month plus board @ $2.50 per day for 51 days... ...	$ 710.83
FREITAG, Johannes Line Cutter Chainman	June 11th to July 15th - 35 days, $300.00 per month plus board @ $2.50 per day for 35 days... ...	$ 425.00
ZODROW, Erwin Linecutter Chainman	June 11th to July 31st - 35 days, $300.00 per month plus board @ $2.50 per day for 35 days... ...	$ 425.00
HADDRELL, Donald Linecutter Chainman Sampler	July 24th to Sept. 15th - 54 days, $300.00 per month plus board @ $2.50 per day for 54 days... ... Oct. 14th to 21st, 8 days @ $14.00 per day	$ 646.93 $ 112.00
BORTON, Vernon Linecutter Chainman Sampler	July 25th to Sept. 15th - 53 days, $300.00 per month plus board @ $2.50 per day for 53 days... ...	$ 634.95
YOUNG, Percy Linecutter	Sept. 16th to 27th - 12 days, $300.00 per month plus board @ $2.50 per day for 12 days... ...	$ 150.00
RENZ, Arnold Linecutter	Sept. 16th to 19th - 4 days $12.50 per day	$ 50.00
GRATTON, Marc & Helper	Sept. 25th to Oct. 5th - 11 days, Linecutting on contract	$ 260.85
HADDRELL, George Foreman, Linecutter Sampler, Roadmaster	July 24th to Oct. 22nd - 89½ days, $450.00 per month. Average slightly in excess of $15.00 per day	$1351.50
DARLING, Harry W. Mining Engineer Geochemist Geologist	June 11th to Oct. 6th - 118 days, Nov. 2nd to 16th - 15 days Total of 133 days at $35.00per day	$4655.00
	Total Labour ...	$11346.22

CONROY, Frank HADDRELL, Eva Cooks	June 11th to Sept. 15th Sept. 16th to Oct. 6th 118 days total @ $350.00 per month plus $2.50 per day board ...	$1739.00

M.L.L.

CERTIFICATION OF EXPENDITURES

I, EARL SIDNEY CHARD, Accountant of GRAHAM BOUSQUET GOLD MINES LIMITED, have examined pages nos. 19 and 20, being the payroll from June 11th to October 22nd, 1956 inclusive, and certify that same is correct.

EMpire 4-8121

GRAHAM BOUSQUET GOLD MINES LIMITED

(No Personal Liability)

SUITE 1116
85 RICHMOND ST. WEST
TORONTO 1, ONT.

GOVERNMENT AGENT
KAMLOOPS, B.C.

February 19th, 1957.

Mining Recorder,
KAMLOOPS, B.C.

Dear Sir:

This letter verifies the figures concerning Payroll which were embodied in a report of geo-chemicals survey conducted on the Divide Group of claims in the Highland Valley, property of Graham Bousquet Gold Mines Ltd.

This report was written by Harry W. Darling who neglected to obtain my signature upon Page No.21, "Certification of Expenditures".

Please file this letter with the report as a part thereof attached to Page 21.

Earl Sidney Edwards
.....
Accountant.

SWORN before me this 19th day of February, 1957 in the city of Toronto, Province of Ontario.

.....

LABOUR DISTRIBUTION from JUNE 1st to OCT. 22nd, 1956.

June 1st to 6th	Darling & Markerth finishing mapping on claims near Kamloops known as the DM Group. Carlson, Nilson, Freitag and Zodrow setting up camp in the Highland Valley, the cook with them.
June 6th to 10th	Completing setting up camp and looking over the Divide Group of claims, making decision to prepare for geochemical or geophysical surveys.
June 11th to 23rd	All hands making survey of the Divide Group of claims by compass and chain, locating baselines for grids with respect to boundaries and mapping same. Prospecting being done at the same time.
June 24th to 28th	Same crew doing likewise to the Louise Group of claims.
June 29th to July 4th	All hands cutting grid lines for the geochemical survey on the Eastern grid.
July 5th to 12th	Markerth & Zodrow finishing survey of Louise group. Rest of crew cutting lines and chaining for Eastern grid.
July 13th & 14th	Entire crew cutting and chaining Eastern grid.
July 15th	Moved camp to better location. Freitag and Zodrow quit.
July 16th to 28th	Markerth laying out Western grid, collecting geological and topographical data and mapping.
July 23rd to 28th July 24th to 28th	G. Haddrell and D. Haddrell finishing Eastern Borton finishing Eastern Grid. Grid.
July 16th to 31st	Carlson & Nilson taking soil samples Eastern grid. They quit.
July 29th to August 5th	Markerth, the Haddrells and Borton cutting and chaining lines for the Western grid.
Aug. 6th to 18th	Markerth collecting data, geological and topographical, and helping G. Haddrell and Borton cut and chain lines while D. Haddrell started taking soil samples.

Aug. 19th to 26th	Markerth & Borton spent one day surveying in the roadwork and trenching done by bulldozer. Rest of period Borton spent on roadwork. The Haddrells built bridge for road. Markerth collected geological and topographical data and did mapping. Also laid out Central grid.
Aug. 27th to 31st	Markerth continued mapping geological and topographical data. The Haddrells and Borton finished sampling Western Grid. Markerth quit.
Sept. 1st to 15th	The Haddrells & Borton cutting out Central grid. D. Haddrell and Borton Quit.
Sept. 16th to 19th	G. Haddrell, Young & Rens cut lines for Central grid, chained base lines and tie lines. Rens quit.
Sept. 20th to 24th	G. Haddrell & Young cutting lines for Central grid.
Sept. 25th to 27th	G. Haddrell, Young, Gratton & his helper all cutting and chaining lines for Central grid. Young quit.
Sept. 27th to October 5th	G. Haddrell, Gratton & helper cutting and chaining. Finished.
Oct. 6th to 13th	G. Haddrell taking soil samples.
Oct. 14th to 21st	G. Haddrell & D. Haddrell taking soil samples. Finished.
October 22nd	G. Haddrell collected and shipped soil samples to Darling.
June 11th to Oct. 7th	Darling - 118 days and
Nov. 1st to 15th	Darling - 15 days - Distribution as below.

General supervision ...	$1575.00
Louise Group..	140.00
Road lay-out..	140.00
East Grid	420.00
West Grid	1190.00
Central Grid..	1190.00
	$4655.00

For Distribution of Wages, following daily averages are used -

Markerth.	$14.670	Carlson.	$14.428
Nilson...	13.937	Freitag.	12.143
Zedrow...	12.143	D. Haddrell.. ...	12.240
Borton...	12.143	Young...	12.500
Rens	12.500	Gratton.	11.854
Gratton helper ...	11.854	G. Haddrell.. ...	15.100
Darling..	35.000		

For information only - during the period June 1st to October 7th operation of Cookery cost $3096.88 for 654 man-days, or a cost of $4.7353 per man-day, so that $2.50 per man is not an allowance that can be questioned.

M.A.D.

DISTRIBUTION TIME - HARRY W. DARLING, Consulting Engineer, Geologist, Geochemist, in charge.

June 11th to 23rd..	..13 days	- General survey of claims	$455.00
June 24th to 28th..	.. 4 "	- General mapping of claims	140.00
June 29th to July 4th..	6 "	- Preparing East Grid... ...	210.00
July 5th to 12th...	.. 8 "	- Checking East Grid	140.00
		& survey Louise Group. ...	140.00
July 13th & 14th...	.. 2 "	- Checking East Grid	70.00
July 15th	.. 1 "	- Moving Camp	35.00
July 16th to 28th..	..13 "	- Preparing West Grid... ...	455.00
July 29th to Aug. 5th	8 "	- Checking West Grid	280.00
Aug. 6th to 18th...	..13 "	- Working on West Grid.. ...	455.00
Aug. 19th to 26th..	.. 8 "	- Preparation Central Grid...	140.00
		Directing Roadwork	140.00
Aug. 27th to 31st..	.. 5 "	- General, Mapping, Reports..	175.00
Sept. 1st to 15th..	..15 "	- Work on Central Grid.. ...	525.00
Sept. 16th to 31st.	..15 "	- General, Mapping, Reports..	525.00
Oct. 1st to 7th ...	.. 7 "	- General, Mapping, Reports..	245.00
Nov. 1st to 15th...	..15 "	- Testing & Mapping Central Grid..	525.00
	133 days		$4655.00

General supervision...	$ 1575.00
Directing Roadwork	140.00
Louise Group Survey...	140.00
	$1855.00

	Geochemical	Geological	Topographical
East Grid	$ 210.00	$210.00	
West Grid	595.00		$595.00
Central Grid	1190.00		
	$1995.00	$210.00	$595.00

Testing soil samples from East and West Grids is included under the word Checking.

H.W.D.

ROADS

It was necessary to construct access roads to carry on work. A branch was made from the Skeena road to a point on Creepen Charlie Claim No. 5 where trenching with bulldozer was to be done. This road is about 1930 feet long.

A general access road was built from the Highland Valley main road, starting at a point south of the middle of Divide Lake and running southward, avoiding the Indian Reservation No. 13, winding west of the Jordan Claim No. 1, through Creepen Charlie Claims Nos. 2 and 1, into Hebrew No. 8, then ending short of the south boundary of the last named. This involved about 9260 feet of road.

On Creepen Charlie No. 1 a branch was started which winds through Hebrew No. 8, into Jericho No. 1, crossing Jericho Claims Nos. 4, 6 and 7 to reach the northwest corner of the property. This branch is about 9200 feet long.

Another branch was started near the start to cross the west boundary of Jordan Claim No. 1, crossing creek by bridge is about 1500 feet long.

A total of $2531.26 was spent upon roadwork of which about $2000.00 was in the first year and about $400.00 is in the second year to be recorded.

TRENCHING

Bulldozer was employed upon Creepen Charlie Claims Nos. 5 and 6 to excavate a trench over 700 feet long, from zero to 22 feet deep. This trench was run along a north-south running geochemical

anomaly. Water coming in from the bottom drowned out the bulldozer after an expenditure of $2389.50 in this work.

A magnetometer survey extended over this area shows an anomalous low zone over this trench, confirming the belief that a shear zone exists here.

A GEOLOGICAL REPORT ON SOME GRAHAM-BOUSQUET CLAIMS

On August 28th, in company with Mr. Carl Warmuth, I examined the rock outcrops on the Jericho 1 - 8, Israel 1,2,5, S.W.4 Fr., and the Hebrew 1 and 2 claims. These claims are held by Graham-Bousquet Gold Mines Ltd., and are part of a group of 44 claims situated on the south side of Highland Valley between ground held by Bethsaida to the west and Skeena Silver Mines to the east. An accurate outcrop map was provided.

Outcrops are numerous and it appears that the entire area is underlain by one type of rock, a coarse grained biotite quartz diorite. This rock consists of rounded grains of quartz up to ¼ inch in diameter, white, pinkish or dull gray-green feldspar, much of which shows albite twinning, fine to coarse booklets of biotite and accessory magnetite. In places the biotite is more or less altered to chlorite. The rock is generally fresh and well jointed, the major joint directions being N 30-45 E, and N 50 W with steep to vertical dips. Flatter dips (40) were occasionally seen.

The mineralization consists of chalcopyrite which is predominantly present as grains and film-like patches up to ¼ inch in diameter on the joint planes. Chalcopyrite also occurs as sparsely disseminated grains throughout the rock in the vicinity of some of the mineralized joints. These grains rarely exceed 2 mm. in size. Finely divided sericite often accompanies the chalcopyrite on the joints.

The north easterly trending joints are more commonly mineralized than the north westerly set. On the Jericho 7 claim there is a quartz, sericite, chalcopyrite vein along a joint which strikes N 25 E and dips 73 SE. The greatest width of the vein is 8 inches and it pinches to 2 inches in 4 feet on strike. Of the many outcrops examined relatively few were mineralized. The mineralized joints are found at widely scattered outcrops that do not seem to lie in any particular zones or pattern.

One outcrop of rough weathering white rock consists of an aphanitic feldspathic groundmass with pale gray-green areas and prismatic crystals of clinozoisite. Quartz and sericite are also present. The contacts of this body with the surrounding biotite quartz diorite were not observed and the cause of this alteration is obscure.

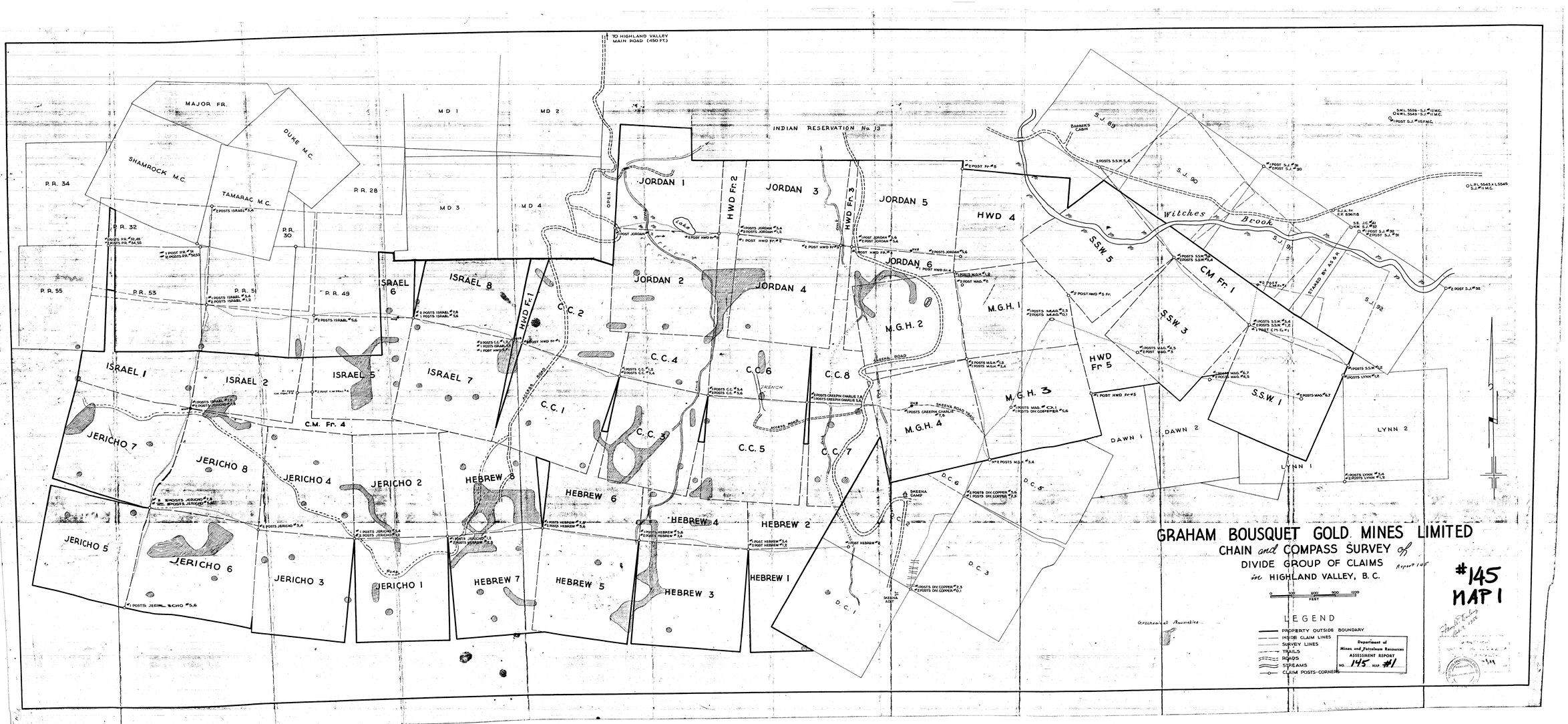
Small veinlets and masses of sugary pinkish aplite are fairly common in the quartz diorite. In one place a 5 inch quartz clinozoisite vein a few feet long was seen.

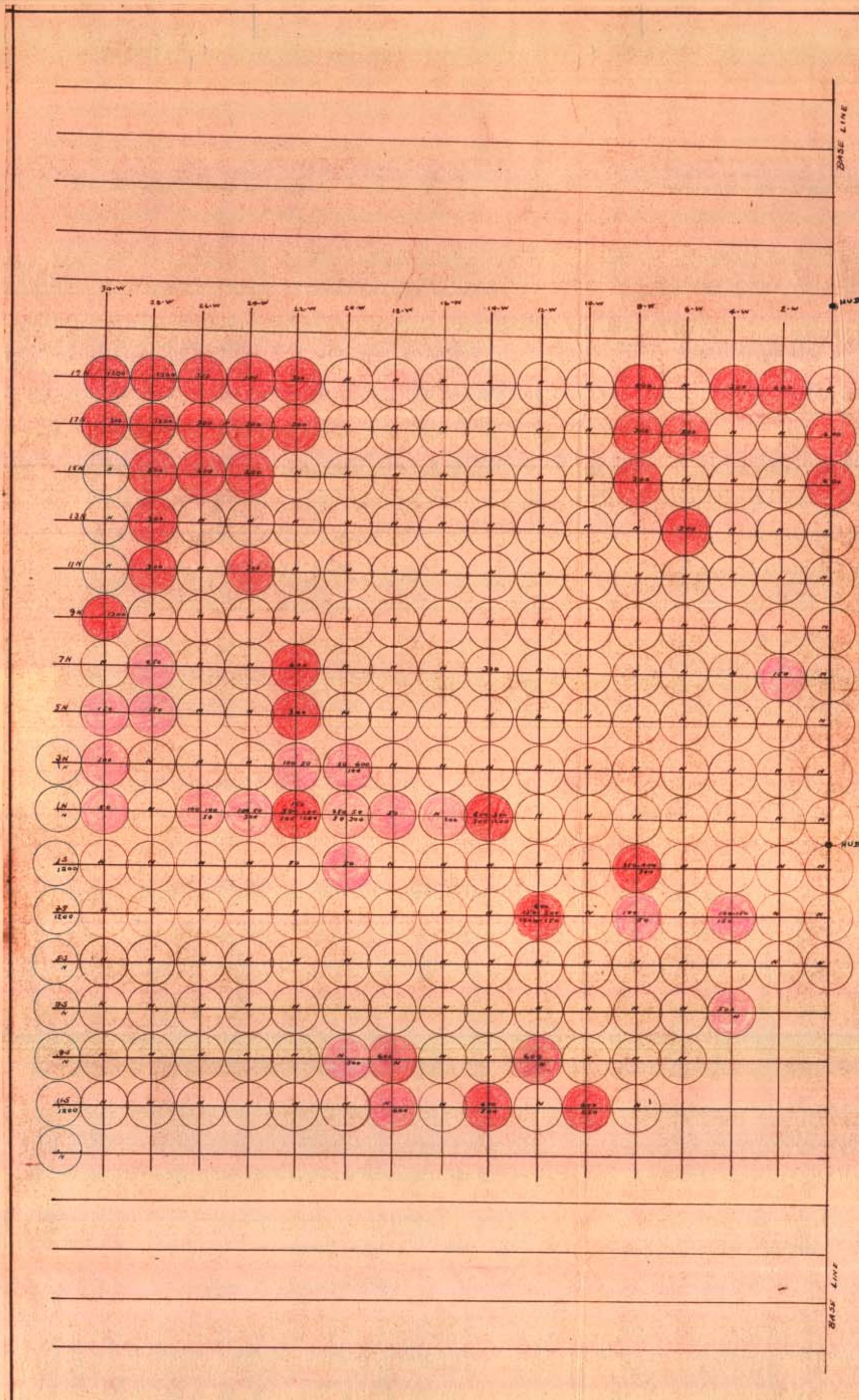
Float boulders of a darker hornblende biotite diorite or quartz diorite with conspicuous accessory sphene are occasionally found but none was seen in place.

On the Hebrew 1 and 2 claims at the east end of the above group of claims are small outcrops of a medium grained hornblende biotite quartz diorite. Prismatic crystals of hornblende up to ¼ inch in length may be found. This rock is present on the Skeena Silver property which adjoins the Hebrew claims to the east. The contact between these two rock types, the hornblende biotite quartz diorite and the biotite quartz diorite has not been found.

R.M. Thompson, P. Eng.
August 30th, 1956

R. M. Thompson


TO HIGHLAND VALLEY MAIN ROAD (450 FT.)
INDIAN RESERVATION No. 19
MAJOR FR.
SHAMROCK M.C.
DUKE M.C.
TAMARAC M.C.
P.R. 34
P.R. 32
P.R. 28
P.R. 30
P.R. 55
P.R. 53
P.R. 51
P.R. 49
MD 1
MD 2
MD 3
MD 4
OPEN
JORDAN 1
JORDAN 2
JORDAN 3
JORDAN 4
JORDAN 5
JORDAN 6
HWD Fr. 1
HWD Fr. 2
HWD Fr. 3
HWD 4
HWD Fr 5
ISRAEL 1
ISRAEL 2
ISRAEL 5
ISRAEL 6
ISRAEL 7
ISRAEL 8
C.C. 1
C.C. 2
C.C. 3
C.C. 4
C.C. 5
C.C. 6
C.C. 7
C.C. 8
C.M. Fr. 4
JERICHO 1
JERICHO 2
JERICHO 3
JERICHO 4
JERICHO 5
JERICHO 6
JERICHO 7
JERICHO 8
HEBREW 1
HEBREW 2
HEBREW 3
HEBREW 4
HEBREW 5
HEBREW 6
HEBREW 7
HEBREW 8
ACCESS ROAD
FRENCH
M.G.H. 1
M.G.H. 2
M.G.H. 3
M.G.H. 4
SKEENA ROAD TRAIL
SKEENA CAMP
SKEENA ASST.
D.C. 1
D.C. 2
D.C. 3
D.C. 5
D.C. 6
DAWN 1
DAWN 2
LYNN 1
LYNN 2
S.S.W. 1
S.S.W. 3
S.S.W. 5
CM Fr. 1
S.J. 89
S.J. 90
S.J. 91
S.J. 92
Witches Brook
BARBER'S CABIN
STAKED BY A.S.&P.
Greenhead Anomalies
GRAHAM BOUSQUET GOLD MINES LIMITED
CHAIN and COMPASS SURVEY of
DIVIDE GROUP OF CLAIMS
in HIGHLAND VALLEY, B. C.
Report 145
#145
MAP 1
LEGEND
PROPERTY OUTSIDE BOUNDARY
INSIDE CLAIM LINES
SURVEY LINES
TRAILS
ROADS
STREAMS
CLAIM POSTS-CORNERS
Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 145 MAP #1



EXPLANATION

Scale - 1 inch = 300 feet.

Base-Line set Astronomic North-South, running through Initial Posts of Creeper Charlie Mineral Claims Nos. 7 & 8, round dot marking same.

Picket Lines run approximately East-West at 200 foot intervals, with pickets every 200 feet, chained, for Sampling Stations.

Center of Circles indicates where samples were taken.

Figures indicate parts metal per million, using McPhar Manufacturing Co. Ltd. equipment and chemicals.

Letter "N" indicates Negative results.

Where more than one figure appears in circle, check samples were taken.

High Samples obtained in swampy or drainage areas should be regarded with suspicion as surface waters in area give Positive reaction for metal.

Areas returning positive results should be checked carefully before extensive or expensive trenching or drilling be done.

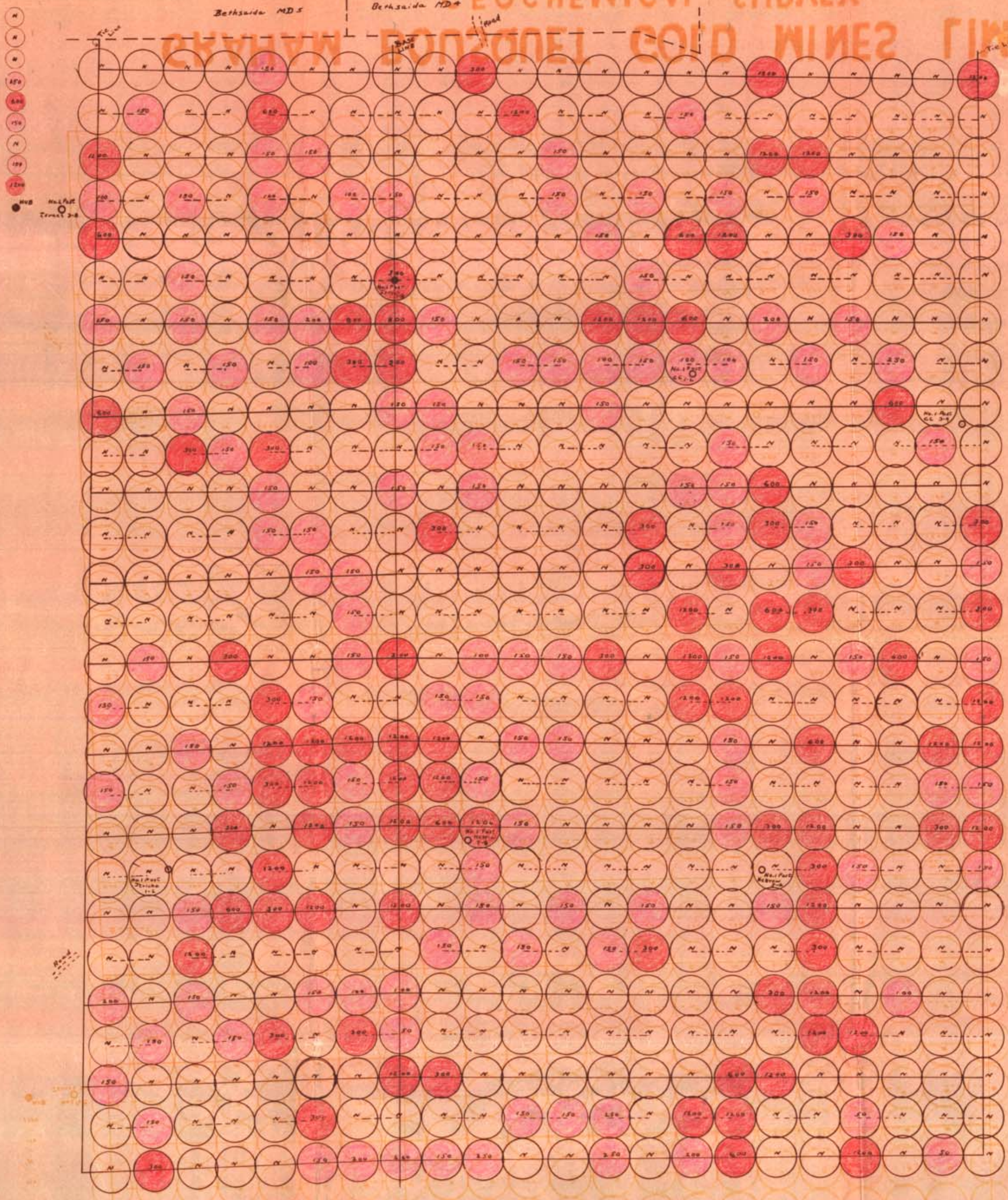
This drawing should be used as an "overlay" upon the "Geological-Relief" Map for relationship and upon the "Compass-Chain" map for location.

Henry W. Dowling, P.Eng.,
Consulting Mining Engineer.

Report 145

GRAHAM BOUSQUET GOLD MINES LIMITED

GEOCHEMICAL SURVEY OF EAST PART OF DIVIDE GROUP OF CLAIMS IN HIGHLAND VALLEY, B.C.



EXPLANATION

Scale - 1 inch = 300 feet.

Base-line set Astronomic North-South, running through Initial Posts of Israel Mineral Claims Nos. 7 & 8, round dot marking same.

Picket Lines run approximately East-West at 400 feet intervals, with pickets every 200 feet for sampling stations, chained. Intermediate sampling stations north or south of pickets, set 200 feet distant by pacing.

Center of Circles indicates where sampled.

Figures indicate parts metal per million, using McPhar Manufacturing Ltd. equipment, chemicals and method.

Letter "N" indicates Negative Results.

High Samples obtained in swamps or in drainage areas should be regarded with suspicion as surface waters in area give positive reaction for metal.

Areas returning positive results should be checked carefully before extensive or expensive trenching or drilling be done.

This drawing should be used as an "overlay" upon a "Geological Relief Map for relationship and the Compass-Chain" Map for location.

Harry W. Dunling, P. Eng.
Consulting Mining Engineer.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 145 MAP #3

GRAHAM BOUSQUET GOLD MINES LIMITED

GEOCHEMICAL SURVEY OF

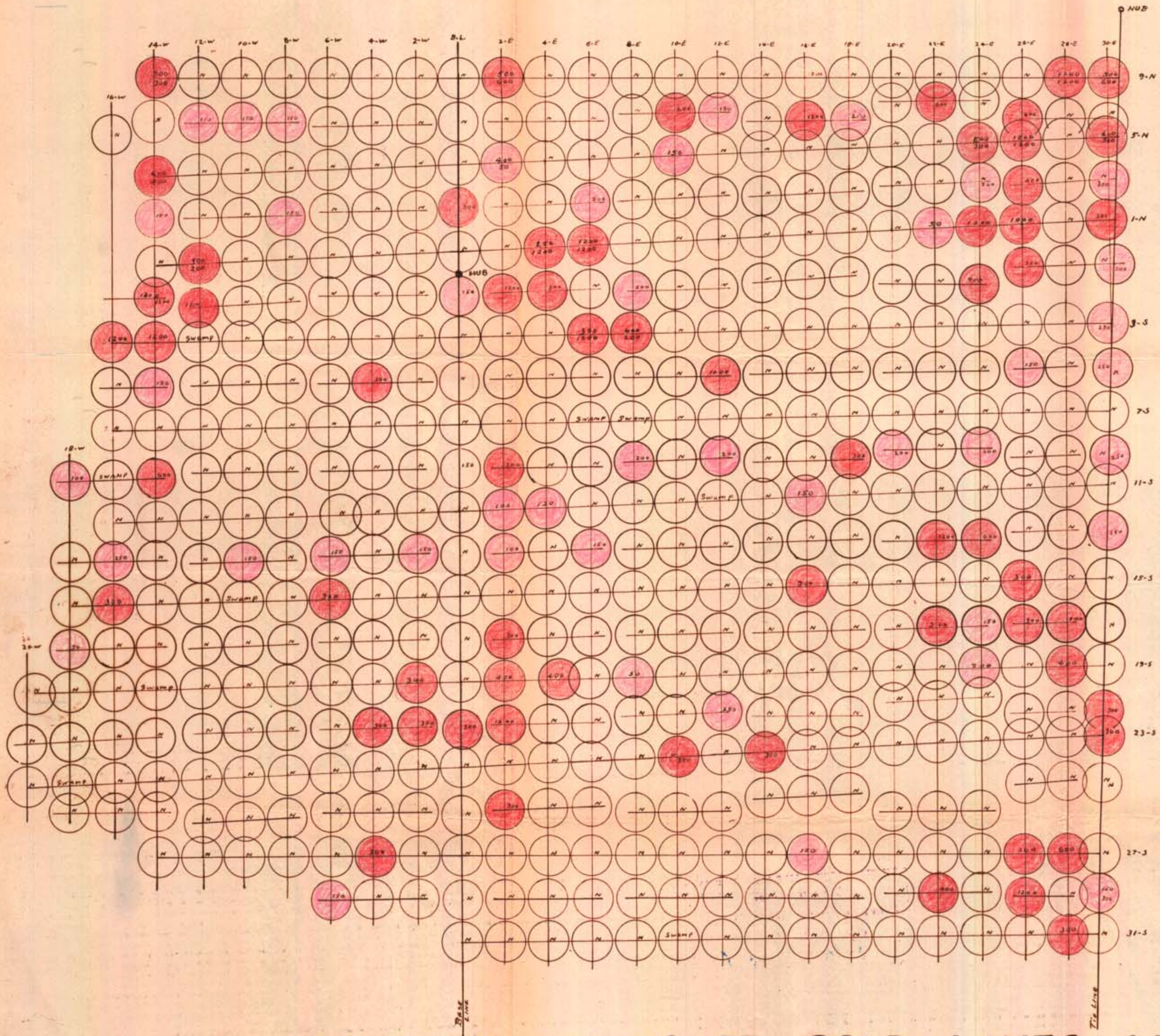
Report 145

CENTRAL PART OF DIVIDE GROUP OF CLAIMS

IN HIGHLAND VALLEY, B. C.

Harry W. Dunling
Oct. 7, 1958

REGISTERED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO



EXPLANATION

Scale - 1 inch = 300 feet.

Base-Line set North-South Astronomic, running through Initial Posts of Israel Mining Claims Nos. 1 & 2, round dot marking same, with Hub for reference line about 200 feet west of Initial Posts of Israel Mining Claims Nos. 5 & 6.

Picket Lines run approximately East-West from Base-Line at 400 foot intervals with Pickets every 200 feet for Sampling Stations. Chained lines.

Intermediate Sampling Stations north or South of Pickets about 200 feet by pacing.

Center of Circles indicates where samples taken.

Figures indicate parts metal per million, using McPhar Manufacturing Co. Limited Equipment and Chemicals.

Letter "N" indicates Negative Results.

No Samples taken in areas marked Swamp.

Where two figured show in one circle, a check sample has been taken.

High samples obtained in swamps or drainage areas should be regarded with suspicion as surface waters in area give positive reaction for metal.

Areas returning positive results should be checked carefully before extensive or expensive trenching or drilling be done.

This drawing should be used as an "overlay" upon the "Geological Relief" Map for relationship and the "Compass-Chain" Map for location.

Harry W. Darling, P. Eng.,
Consulting Mining Engineer.

GRAHAM BOUSQUET GOLD MINES LIMITED

GEOCHEMICAL SURVEY OF

Report 145

WEST PART OF DIVIDE GROUP OF CLAIMS

IN HIGHLAND VALLEY, B. C.

GRAHAM BOUSQUET GOLD MINES LIMITED

GEOLOGICAL - RELIEF MAP of Report 145

DIVIDE GROUP OF CLAIMS

in HIGHLAND VALLEY, B. C.

0 300 600 900 1200
FEET

LEGEND

Biotite quartz diorite
Hornblende biotite quartz diorite
Clinozoisite sericite alteration
Higher sand ridges & moraines
Elevations by corrected aneroid barometer
Creek (dry) & streams
Swamps
Geological Survey Hubs
Gullies & direction of drainage

Elevation of Divide Lake was assumed as 4200 Feet for reference
The outside boundary of property is shown to permit matching with survey plan

Indian Reservation No. 13

Glacial Boulders

Fragmental rock

#145
MAP 5

Group	Claim Name	No	PREVIOUSLY RECORDED $ Roads	$ Trenches	$ Cash Payments Actual Cost of Work	TO BE RECORDED Roads	Geochemical	Geophysical	Geological	Actual $ Cost of Work	TOTALS TO DATE Total $ Recorded	Total $ Actual Cost
A	Creepen Charlie	2	10000		21092			10000		42320	20000	63412
	Creepen Charlie	4	10000					10000			20000	
B	Creepen Charlie	6		30000				10000			40000	
	Creepen Charlie	8		30000				10000			40000	
	Jordan	1		10000			7500	2500			20000	
	Jordan	2		10000	140305			10000		132199	20000	272504
	Jordan	3		10000			5000	5000			20000	
	Jordan	4		20000				10000			30000	
	Jordan	5		10000			2500	2500	5000		20000	
	Jordan	6		10000				5000	5000		20000	
C	Creepen Charlie	1		10000				10000			20000	
	Creepen Charlie	3		10000				10000			10000	
	Creepen Charlie	5		20000				10000			30000	
	Creepen Charlie	7		10000	98646			10000			20000	242007
	Hebron	1		10000					10000	143361	20000	
	Hebron	2		10000					10000		20000	
	Hebron	3		10000			5000	5000			20000	
	Hebron	4		10000			5000	5000			20000	
D	Israel	1	10000					10000	10000		30000	
	Israel	2	10000					10000	10000		30000	
	Israel	5	10000		73822			10000	10000	162656	30000	236478
	Israel	6	10000					5000	5000		20000	
	Israel	7	10000					10000			20000	
	Israel	8	10000					10000			20000	
	Jericho	1	10000					10000			20000	
	Jericho	2	10000					10000			20000	
	Jericho	3	10000					10000			30000	
	Jericho	4	10000					10000	10000		30000	
	Jericho	5	10000		84368			10000	10000	248225	30000	324593
	Jericho	6	10000					10000	10000		30000	
	Jericho	7	10000					10000	10000		30000	
	Jericho	8	10000					10000	10000		30000	
	Hebron	5	10000					10000			20000	
	Hebron	6	10000					10000			20000	
	Hebron	7	10000		92184			10000		84640	20000	126824
	Hebron	9	10000					10000			20000	
	CM-Fraction	1						10000			10000	
	SSW	1		10000				10000			20000	
	SSW	3		10000				10000			20000	
	SSW	5		10000	50000			10000		102552	20000	152552
	MGH	1		10000				10000			20000	
	MGH	3		10000				10000			20000	
	HWD-Fraction	5						10000			10000	
	HWD	4						10000			10000	
	MGH	2		10000	20000			5000	5000	34479	20000	54479
	MGH	4		10000				5000	5000		20000	
	CRI-Fraction	4						10000			10000	
	HWD-Fraction	1					5000	5000		60379	10000	60379
	HWD-Fraction	2					5000	5000			10000	
	HWD-Fraction	3					5000	5000			10000	
	TOTALS		200000	220000	700000	530417	40000	325000	110000	145000	1002816	1870000

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 145 MAP #6

#145 MAP 6