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AUTHOR OF REPORT: DAVID M.	

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Introduction

From July 8, 1989 to July 22, 1989 a grassroots exploration program was carried out on the GB 1 claim group, located in the Atlin Mining Division, approximately 30 km west of Atlin, B.C. The GB 1 claim group is comprised of 100 claim units, all acquired by staking, and is owned by Golden Bee Minerals Incorporated of Kamloops, B.C. Golden Bee Minerals holds an additional 122 claim units (GB 2 claim group) which are contiguous with the GB 1 claims.

The GB 1 claim group lies within the western-most margin of the Intermontane geological province of the Canadian cordillera, and is underlain entirely by lower and middle Jurassic Laberge Group argillites, graywackes and conglomerates.

The exploration program consisted of grid establishment, 1:250 scale geological mapping, rock, soil and silt sampling, trench blasting and prospecting. A total of 49 rock, 82 soil, and 8 silt samples were collected from the claim group and submitted to Northern Analytical Laboratories of Whitehorse, Yukon for geochemical analysis. Au 15 gm Fire Assay/AAS, AAS 6 element, Surcharge Dilution. The main effort focused on a mineralized breccia/stockwork zone in the southwest corner of the Mass claim, discovered as the result of prospecting by Gary R. Thompson, proven by BCDM 1987 silt sampling and lithogeochemical program in the area by Mitch Mihalynuk. The mineralization occurs along a 025 degree trend, vertical fault which forms a 6.0 km long lineament. Geological mapping and chip sampling have established that the zone has a minimum strike length of 340 m, average width of 3.0 m, and average gold and silver grades, on surface, of 2.30 grams per tonne Au and 38.30 Ag grams per tonne, respectively. Arsenopyrite is the main sulphide, and along with pyrite, occurs in concentrations of up to 10% but averages approximately 4%. Refer to Appendix IV.

Other areas of interest include the remainder of the 6.0 km lineament along which quartz-carbonate alteration has been identified, (NE corner of the Quantity claim), and alteration and arsenic soil anomalies in the northwest corner of the Mass claim.

The GB 1 claims are some of the most promising in this increasingly active gold exploration area. Further exploration is recommended, including diamond drilling, establishment of an additional grid system, geophysics, geochemical sampling and prospecting.





Location and Access

The GB 1 claim group is located in northern B.C. (NTS 104M/9E) on the east side of Taku Arm (Tagish Lake), extending south from Golden Gate to 1.5 km south of Golden Mountain, centred on 59 degrees 34' 10" north latitude and 134 degrees 14' 00" east longitude.

Access for this project was by water with a 16 foot Zodiac powered with a 25 horsepower outboard, from the village of Outline, B.C., some 30.5 air km to the east (40.0 km by water). On a calm day this trip is achieved in approximately 1.75 hours, however the trip can take much longer depending on wave conditions on Outline Lake, Graham Inlet and Taku Arm.

Access can also be gained by helicopter or float plane, both available in Atlin.

Claim Information

The GB l claim group is comprised of five metric claim blocks (Quantity, Mass, Golden Bee 1, GM 2 and GM 3) and four two post claims (G.G. 1 to 4), totalling 100 units, and lie within the

Atlin Mining Division. Ownership of the claims, and other pertinent data is shown in Figure #II; Golden Bee Minerals Inc. of Kamloops, B.C.is the owner, Mr. G.R. Thompson was the project operator.

Physiography, Climate, and Glaciation

Taku Arm acts as one of the main drainage channel for the district.

Two contrasting types of topography occur in the region; that of the Teslin Plateau (part of the larger physiographic region - the Yukon Plateau, and roughly comparable to the Intermontane geological province), and that of the Tagish Highlands (part of the Boundary Ranges physiographic region, and given character from the Coast Plutonic Complex). The Teslin Plateau is an extensively dissected and eroded plateau, and topography consists of irregularly distributed, rounded hills with variable elevations (local areas with flat-toped, uniform elevations). The valleys are wide, deep, steep-walled and typically U-shaped. The Tagish Highlands are rugged, consisting mainly of knife-like ridges, needle summits, and abruptly incised valleys, where considerable ice and snow are seen throughout the entire year.

The rivers and creeks generally open in May, but on some lakes, ice remains until the first of June. Warm summer weather is experienced for about four months with June and July receiving almost continuous daylight. The mean daily temperature in July is no less than 14 degrees Celsius. The month of July receives 10 to 13 days with measurable precipitation; mean annual precipitation is around 60 cm. In January the mean daily temperature is -15 degrees

Celsius with 14 to 17 days with measurable precipitation.

During the Pleistocene epoch the Tagish Highlands became extensively glaciated, while the upland of the Teslin Plateau was affected to a lesser degree. Glacial processes and deposits have modified the terrain.

Claim Topography and Vegetation

The claims lie within the Tagish Highlands. The topography is dominated by shoreline of Taku Arm (655.62 m, 2151 feet +/-); and low lying (760 m, 2500 feet) undulating surface inland with abundant small swampy lakes with intermittent creeks and limited bedrock exposure. However, the southeast part of the group is occupied by steep mountain walls with the summit of Golden

Mountain the high point on the claims (1655 m, 5430 feet). Good bedrock exposure, and talus is abundant in these areas.

The low-lying area of the claim group is covered by mature stands of balsam, spruce, pine and poplar, and shrubs of willow and alder. The mountain slopes are thickly covered by stunted balsam and spruce with local buckbrush and willow patches. Tree line is at approximately 1400 m (4500'), above which vegetation is less diverse, consisting of mosses, lichens, berries, alpine flowers, patches of buckbrush and occasional stunted balsam.

<u>History</u>

Activity in the area dates back to 1898 as men made their way to the Outline creeks. The past producing Engineer Mine is located approximately 8.5 km south of the centre of the GB 1 group. Mining claims were first located over this deposit in 1899. Production was intermittent from 1913 to 1952 during which 17,150 tons of ore were milled and 18,058 ounces of gold and 8,950 ounces of silver were recovered. (See Minfile No. 104M 014 in Appendix III). The deposit is classified as consisting of epithermal veins. Work on the Happy Sullivan gold-silver prospect consisted of a 10 ton bulk sample taken from QT 2, material assayed 8 1/2 - 9 1/2

ounces per ton Au (6.0 km south of the centre of the GB l claim group), dates back to before 1933 (See Minfile No. 104M 013 in Appendix II).

Golden Bee Minerals Inc. staked the Mass and Quantity claims in August, 1988 to cover the Breccia Zone. Golden Bee 1 7 was staked in February 1989, and GM 2 and 3 and G.G. 1 to 4 in July, 1989.

Regional Geology

The claims lie within the Intermontane belt at the boundary with the Coast Plutonic Complex. All main tectonic elements have northwest trending contacts, which are generally complex fault systems. In the area of the claims, the Llewellyn Fault separates Carboniferous and Permian (and possibly older) schists and gneisses (Nisling Assemblage) to the west from upper Triassic Stuhini Group andesites and basalts, and/or lower and middle Jurassic Laberge Group argillites, graywackes, and conglomerates. The GB 1 claim group is underlain entirely by Laberge Group sediments, and although the trace of the Llewellyn Fault lies less than 1.0 km to the west. In the area of Graham Inlet, southeast to south Outline Lake, the Laberge Group occurs

as a northwest trending, 20 km wide belt with parallel contacts uncomplicated by intrusions or large deposits of Eocene volcanics. The laberge Group is bounded to the east by the Nahlin Fault which separates it from Permian and Carboniferous age rocks of the Cache Creek Group (Outline Terrane). The Nahlin Fault is for the most part a northeast-facing thrust, but in the area of Atlin Mountain may be vertical. The Cache Creek Group, in the Outline area, is comprised mainly of cherts and argillites (Kedahda Fm.), and basaltic andesite (Nakina Fm). Associated with basaltic andesites are irregular bodies of serpentinized and carbonatized ultramafic rocks. North of Graham Inlet the contact between the Laberge Group and the Outline Terrane is covered by Eocene Sloko Group volcanics. Large and small belts and patches of these young volcanics (felsic to mafic pyroclastics and lesser flows) occur in contact with all of the above mentioned older groups. Plugs of Tertiary leucogranite, probable feeders to the Sloko Group volcanics, commonly crop out near these volcanic patches.

Claim Geology

i) Lithology

The claims of the GB 1 group are underlain by the Jurassic Laberge Group. On the claims, these sediments consist mainly of interbedded argillaceous siltstone and feldspathic gray-

wacke. Locally feldspathic wacke occurs as thick beds without interbeds of argillaceous siltstone, whereas other areas are occupied by thinly bedded argillaceous siltstone without wacke interbeds. Minor conglomerate was noted on the lakeshore in the northwest corner of the Quantity Claim.

The argillaceous siltstones are brown to rusty weathering, black, well indurated, and although these rocks look like true argillites, they contain significant silt size components. The wackes are arenites, and are light gray, to brownish, to very rusty weathering. The fresh surface is light gray in color with black angular clasts of argillite comprising 1 to 5% of the rock. Plagioclase clast comprise a substantial proportion of this lithology and is most evident on the weathered surface where it is somewhat less resistant than the other constituents.

ii) <u>Structure</u>

Bedding attitudes are quite variable from 050 degrees to 170 degrees with dips from 10 degrees to vertical. The majority of measurements taken gave orientations in the area of 120 degrees to 160 degrees with northeast dips of 10 degrees to 45 degrees. Folding is evidenced by variation in strikes and dips and can locally be observed, especially along the shoreline of Taku Arm.

A strong airphoto lineament cross cuts the Mass and Quantity Claims with a trend of 025 degrees and observable strike length of 6.0 km; its expression is lost to the northeast where it extends into Graham Inlet, and to the southwest where it enters Tagish Lake. Over most of its length the fault cannot be directly observed on the ground due to lack of exposure. The fault can be observed for approximately 500 m in a prominent gully at its southwestern extent. Here the fault zone is 1 to 5 m wide and is reflected as vertically dipping breccia zone/fractured а argillite/zone of weakness. Horizontal slickensides were noted periodically and indicate purely strike-slip movement. Geological mapping of the portion of the fault was undertaken but did not reveal relative movement. A parallel fracture pattern appears to have developed in the sediments outside the fault zone. However, local dense fracturing/cleavage development, oriented at 150 degrees / 75 degrees SW to vertical occurs in the area mapped, and appears to predate the fault.

Jointing does occur in the sediments, but insufficient data exists to identify any patterns.

iii) <u>Mineralization and Alteration</u>

The main area of mineralization determined to date is

located along the 025 degree / vertical fault in the southwest corner of the Mass Claim. The mineralization is associated with a quartz-flooded fault breccia, which has been traced for 340 m. (Appendix IV). The breccia is comprised of 10 to 40% angular fragments of weakly silicified argillaceous siltstone and minor bleached feldspathic wacke, supported in a matrix of finely crystalline, white translucent, vuggy quartz. It is not clear whether the breccia forms a continuous body over the 300 m that was mapped; it is more likely that the quartz-flooded breccia itself forms large lenses (1 to 5 m wide and 5 to 30 m long) representing infilled dialafant zones on the fault. No visible mineralization was noted within the quartz matrix but rather, occurs in the breccia fragments and in the immediately adjacent stockworked argillaceous siltstone.

Well mineralized, intensely fractured (locally "shattered"), commonly stockworked argillaceous siltstone is probably continuous over the 340 m that it was mapped but is best preserved near the much more resistant quartz-flooded breccia. These intensely fractured, broken sediments are generally crisscrossed by narrow 1 to 5 mm, finely crystalline quartz veinlets. Visible mineralization in the breccia fragments and the stockworked argillaceous siltstone is comprised of clusters of very fine grained arsenopyrite plus or minus pyrite, in concentrations up to 10% but averages approximately 4%.

A number of widely separated but parallel (3) alteration zones occur along the shore of Taku Arm, south of the LCP for the Mass and Quantity Claims (NW corner of the Mass Claim). These zones occur in Feldspathic wacke, are one to two meters wide, host only minimal sulphides, and have a trend of roughly 025 degrees. No rock samples were taken from these alteration zones. A similar type of alteration was noted, and sampled (891-1R31 & 1SO1) in the north east corner of the Quantity Claim, at the extreme southwest end (east side) of a small, narrow lake. The rock here has an orange weathering, carbonatized and silicified, fine grained wacke or siltstone. The fresh surface is pale gray brown in color. One to two percent pyrrhotite (+/- pyrite) was noted within more siliceous portions, and one percent, very fine grained disseminated pyrite occurs in the carbonatized portion of the rock.

Rock sample 891-1R30 was taken off the Golden Bee 1 Claim from outcrop within the creek draining Bee Lake. This sample was of very milky white, to 8 mm and only orientated quartz-carbonate veinlets within traces of arsenopyrite, in black argillaceous siltstone.

Exploration Work

From July 9, to July 22, 1989 a total of 60 man days were spent on the property carrying out a small exploration program. The crew consisted of four men - one geologist and three prospectors. Work consisted of grid establishment, 1:250 scale detailed geological mapping, rock, soil and silt sampling, trench blasting, and prospecting.

A total of 49 rocks, 82 soils, and 8 silts were collected from the GB 1 claim group. Samples were labelled according to the scheme explained on the 1:250 Geology and Sample Location Map see (Appendix IV), where grid coordinates label the samples. An attempt was made to collect soil from the B horizon, and at each sample location, sample and sample site characteristics were recorded. Silt samples were collected with the bare hand and an attempt was made to acquire silt or finer sized alluvium from the active stream channel.

The main effort focused on the breccia zone in the southwest corner of the Mass Claim. Here a 600 m x 50 m x 25 m grid was established with the baseline running at 000 degrees/180 degrees and crosslines at 090 degrees / 270 degrees. A total of 49 soil samples were collected from grid stations, and the creek gully (Two Foot Creek) / breccia zone was geologically mapped at a scale

of 1:250 using the grid for control. Forty-six rock samples (11 grab and 35 chip) were taken, mainly from the main mineralized zone, giving tenor to the entire 340 m exposure. One soil sample (891-2501) was collected from directly on top of the mineralized zone. Three silt samples were taken from Two Foot Creek; two within the mineralized zone (2ST03 and 04) and are well upstream from observed mineralization (1ST02).

Two small trenches were blasted on the main breccia zone. Trench #1 was established approximately 17 m southwest of the discovery sample 88MM5-3 in an effort to determine whether the zone extended beyond the discovery showing. Trench #2 was blasted 23 m northeast of sample 88MM5-3 in order to better expose the breccia zone in this area.

Approximately eight man-days were spent prospecting three separate areas on the Mass and Quantity Claims. Traverse one examined the southwestern portion of the 6.0 km, 025 degrees airphoto lineament/fault zone, northeast of the mineralized zone. Silt sample 1St02 and rock sample 1R05 were collected during this traverse. Traverse two was up the southern creek (east-west trending) on the Golden Bee 1 claim where samples 1St05, 1St06, and 1R30 were collected. A third traverse was carried out to investigate a report of alteration on the southeast side of a small lake in the extreme northeast corner of the Quantity claim.

Samples 1St07, 08, 09. 1Sol and 1R31 were taken during this investigation.

Two parallel, north-south soil lines, 100 m apart were established, and sampled at 25 m intervals, (total 31 samples) in the extreme northwest corner of the Mass claim. These samples were collected to assess the alteration zones noted along the shore in this area.

PROSPECTING

Prospecting on the GB 1 Claim Group was conducted by 3 certified prospectors and 1 geologist. The majority of prospecting took place on and around the 025 degree trending vertical strike slip, dip slip fault from Tagish Lake. For reference and details see maps 1989 Prospecting and Geology and Sample Location Map of the Two Foot Creek Breccia Zone enclosed. (Appendix IV) The majority of mineralization was confined to main structures. Most samples taken were 1 to 3 m chip samples. However, some grab samples, soil, and silt samples were taken. For results refer to appendix 1 for assay results and appendices IV and V for sample location. The material sampled was quartz-flooded, brecciated, minorly sulphidized argillite. Soil samples were taken on a grid over the Breccia Zone. (Appendix IV) Assays are recorded according to their correspending grid co-ordinates. However, several anomalous grab samples were taken 10 - 70 m away from the main zone. e.g.: Sample #2R16-GBS-09 from similar brecciated veins. Grab sample 1R05 was taken 573 m NE of the mouth of the Two Foot Creek at the start of the main structure, where heavily stockworked quartz veins and minor sulphides over approximately

50 m intrude the Jl sediments at a shear zone. Prospecting continued 700 m to a small lake. Then west-southwest to the shore of Tagish Lake, no additional mineralization was noted. A prospecting traverse was carried out along the shore of Tagish Lake on the Mass and Quantity Claims. Investigations of carbonate alteration, were conducted on the Mass Claim. They may be associated with anomalous Hg, As, and Au values indicated in open file #1989-13. Further north, along the shore on the Quantity Claim are 2 small creeks that drain into Tagish Lake. Here silt samples #1St03, 1St07, 1St08, 1S01, and rock sample 1R31 were taken. See Prospecting Map for reference. (Appendix V)

Prospecting was conducted up a steep creek that flows west into Tagish Lake from Bee Lakes, silt sample 1St05 and 1St06, were taken from this creek. Grab sample 1R30 was taken from a milky white quartz veinlet 10 mm wide, 500 - 600 m from shore.

The final prospecting was conducted along the eastern GB 1 Claim Group boundary. There, only some intrusive floats were found but no rocks were assayed and sources were not located. However, further prospecting will be needed to correctly evaluate this property.

Discussion of Results

All samples were submitted to Northern Analytical Laboratories of Whitehorse, Yukon. Analytical procedures are described in Appendix I.

Very encouraging results were obtained from the main breccia zone sampling. A total of 46 rocks were collected from the breccia zone area and analyzed for gold, silver, arsenic, copper, lead and zinc. These results are tabulated and accompany the 1:250 scale geology map (Appendix IV). Samples 1R22, 23, 24 and 25 were taken near, but outside, the fault hosting the breccia and

stockworked argillaceous siltstone and were excluded from the population in statistical analyses. Geochemical analyses show that the zone is enriched in gold, silver and arsenic with background to below background values for copper, lead, and zinc. Arsenic values range from a low of 1,930 ppm to a high of 19,800 ppm (avg. 8,539.76 ppm); silver from 1.6 ppm to 583 ppm (avg. 38.27 ppm); gold from 373 ppb to 5,000 ppb (avg. 2,262.95 ppb). Gold and silver show a moderate positive correlation (r= 0.47), and gold and arsenic show a high positive correlation (r= 0.63).

A total of 49 soils were collected from the grid established over the main breccia zone (Appendix IV). The grid was established mainly for geological control and was not detailed or extensive enough to adequately outline the mineralized zone; however, a number of features are evident. Gold and silver values die off abruptly outside the fault zone, reflecting the restricted lateral extent of the physical effects of this structure. Arsenic, on the other hand, forms a broader halo with anomalous values outside of the fault zone. A number of anomalous zinc values were obtained roughly coincident with the outer margin of the arsenic halo.

The number 1 trench did prove to be an extension to this zone. The mineralization lies within the fault.

The 31 soils collected along two parallel lines in the northwest corner of the Mass claim were analyzed for gold, silver, arsenic, antimony, copper, lead and zinc. Only one anomalous grid value of 61 ppb was returned (sample 4Si28) from the entire population. The highest silver value obtained was 2.2 ppm. A string of anomalous arsenic values were obtained on line 1 + 00 E (samples 4S39 to 4S45) ranging from 490 ppm to 850 ppm. The soil cover in this area is generally relatively thin, and it is believed that the soil geochemistry reflects that of bedrock.

Of the eight silt samples collected, two stand out as being anomalous in gold, silver and arsenic. These samples (1St03 and 1St04) were collected from Two Foot Creek within the mineralized portion of this gully. The only other metal anomalies obtained in silts came from samples 1St03 and 1St09, taken from creeks in the northeast corner of the Quantity claim. Sample 1St08 returned an arsenic value of 510 ppm and sample 1St09 gave values of 2.1 ppm silver and 650 ppm arsenic.

Only three rock samples were collected and analyzed from outside the main mineralized area of Two Foot Creek. Sample 1R05 was a "high grade" sample of a 2 cm wide quartz-pyrite veinlet and returned values of 101 ppb Au and 1,520 ppm As. Sample 1R30 came from the Golden Bee 1 claim. This grab sample was of stockworked argillite which returned values of 59 ppb Au, 2.2 ppm Ag, and 340

ppm As. Rock sample 1R31 was of quartz-carbonate altered fine grained graywacke and gave values of 50 ppb Au, 172 ppm Cu. and 110 ppm As.

Conclusions and Recommendations

Prior to the 1989 exploration program very little was known about the mineral potential of the GB 1 claim group. The program was successful in expanding the known limits of the quartzflooded breccia/stockworked argillaceous siltstone/fault zone from our isolated outcrop and rock sample to a zone with a mappable strike length of 340 m, average width of 3.0 m and an average grade on surface of 2.30 grams per tonne gold and 38.30 grams per ton silver.

To the northeast, the last exposure of quartz-flooded breccia proper occurs at samples 2R04 and 05, beyond which the gully narrows substantially, and mineralization becomes spotty and disappears completely after sample 1R28. It is suggested here that the main fault and mineralization is either offset near sample 2R04 by a cross fault running at approximately 170 degrees, or that there is a major inflection in the main fault at this point. To the southwest, mapping and sampling in Trench #1 suggest that the fault and mineralization may have considerable additional strike length in that direction.

The average gold and silver grades obtained from surface sampling are obviously sub-economic; however, the consistency of gold grades in the 1.5 to 5 gram per tonne range over 340 m x 3.0 m establish this zone as an impertinent gold occurrence.

The remainder of the 6.0 km lineament represents a prime exploration target. The similarities between the auriferous lithogies and quartz calcite veining of the past producing Engineer Mine and this mineralized breccia zone are notable. See Appendix III.

Recommendations for further exploration would included:

(1) Diamond drill testing of the main mineralized zone with 5 holes from 2 setups totally 560 m (1,837') footage indicated based on -45 degree holes, 50 m NW of zone. Assuming a vertical dip of the zone, on section holes would intersect 50 m below surface (collar elev.), off section holes at 62 m below surface. Penetrations would be at approximately 25 m centres over 100 m. Visual results obtained,

a second, steeper on section hole could be drilled from each of the two proposed set-ups.

- (2) A new baseline should be established, 100 to 200 m NW of, and parallel to, the fault zone/lineament (025 degrees), and extended the entire length of the lineament (6.0 km). Tight (25 m) cross lines should be run to the SE over the mineralized portion and 400 m NE of the last mineralized outcrop.
- (3) Further tight soil sampling and geological mapping should be carried out on the newly established grid lines NE of the last mineralized outcrop.
- (4) The mineralized zone should be remapped using the newly established cross lines for more accurate geological control.
- (5) Two cross lines of the new grid should be picked as test lines over know mineralization and orientation surveys ie: mag, VLF-EM and IP should be run.
- (6) Further prospecting and airphoto analysis of the 025 degree lineament should be carried out, and based on this work, additional cross-lines should be run over interesting areas and tested with soil sampling, VLF-EM, Mag and induced polarization (Pole dipole array, a=25 m, n=4).

- (7) A detailed grid should be established off the new baseline, in the area of samples 1St08 & 09, 1Sol and 1R31, and soil sampled.
- (8) Further prospecting should be done to evaluate other areas of the claim group.

Statement of Costs

Physical

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Food and Accommodation	•	•	•	•	•	•	•	•	\$ 800.00
Mob - demob		•	•	•			•		600.00
Communications	•	•	•		•		•	•	310.00
Labour - 2 men 6 days .		•	•						1,800.00
Trenching Materials	•		•	•	•	•	•	•	400.00
Rentals of Equipment .	•	•	•	•	•	•			600.00
Consumable Supplies (ga	s,	su	rv	ey					
supplies etc.)	•	•		•		•	•	•	400.00
Miscellaneous	•			•		•	•	•	80.00
Management	•	•			•	•		•	499.00
TOTAL COST OF PHYSICAL	WOR	ĸ	•	•	•		•	•	\$5,489.00
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Prospecting

Food and	Acc	ommo	oda	ati	on	l	•	•	•	٠	•	•	•	•	\$	800.0	0
Mob – den	nob		•	•	•			•	•	•	•					800.0	0
Communica	itio	ns		•	•	•	•		•	•	•	•	•	•		550.0	0
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-	l m	an,	2	da	ys	; @		\$10	00.	. 00)						
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Recording	Fe	es	•	•	•	•	•	•	•	•	•	•	•	•		600.0	0
Equipment	Re	ntal	ls					•						•	1	,500.0	0

Statement of Costs

Prospecting con't

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TOTAL PROSP	ECTING	COSTS	•	•	•	•	•	•	•	•	\$	8,	979	.00
Management			•	•	•	•		•	•	•	. 		797	.00
Report	•••		•										212	.00
Miscellaneo	us		•	•	•			•	•				120	.00
Consumables	(gas e	etc.)	•	•	•	•	•	•	•	•	\$		400	.00

Geological

Food and	Acc	ommo	oda	ti	on		•	•	•	•	•	•	•	•	\$		800	.00
Mob - dem	nob	•••	•	•		•	•	•	•	•	•	•	•	•		l,	185	.91
Communica	itio	ns		•		•											658	.00
Labour -	4 m	en,	5	da	ys	Q	\$	15	ο.	00	р	er	d	lay	7			
-	l m	an,	7	da	ys	@	\$	10	0.	00								
	per	day	7	•		•	•	•	•	•	•	•				3,	700	.00
Assays .	•	• •	•		•				•	•						2,	685	.00
Report .			•			•		•	•							2,	100	.00
Equipment	Re	ntal	s	•	•	•	•	•	•	•				•		2,	000	.00
Consumabl	es	(gas	,	oi	1,	e	tc	.)		•		•	•	•			619	.00
Miscellan	eou	s.	•	•	•		•	•		•		•	•				300	.00
Managemen	t		•	•												1,	334	.79
TOTAL GEO	LOG	ICAL	C	os	тs									•	\$1	5,	382	.70
															= =	= = :	====	===

TOTAL COSTS OF 89 PROGRAM ON

GB 1 CLAIM GROUP \$29,850.70

STATEMENT OF QUALIFICATIONS

I, Gary Robert Thompson of 363 Crawford Court, Kamloops,

B.C. certify that:

I have successfully completed the Advanced Prospectors Training Program (B.C. Ministry of Energy, Mines and Petroleum Resources).

I have successfully completed 1st year geology at Cariboo College in Kamloops and plan to achieve a degree in geology.

I have spent 7 years in the mineral exploration service business.

I am secretary / treasurer of Grassroots Enterprises Ltd., a company performing Claim Staking, Prospecting, Line-Cutting, Geochemical and Geophysical Surveys, and Geological Mapping since 1987.

I am the president of Golden Bee Minerals Inc., since incorporation, April 1989.

INO 18'90

Date

Gary R. Thompson

STATEMENT OF QUALIFICATIONS

I, David M. Strain, do hereby certify that:

I am a geologist residing at Lot 4, Lakeview Subdivision, Atlin, B.C.

I have been involved in the exploration industry across Canada since 1975.

I have a diploma in Geological Engineering Technology from Cambrian College of Applied Arts and Technology, Sudbury, Ontario.

I was enrolled in Geological Sciences at the University of British Columbia from 1980 to 1983.

I supervised and partook in the 1989 exploration program on Golden Bee Minerals Tagish Lake claims, and I am the author of this report.

August 15, 1989

David M. Strain

APPENDIX I

ASSAY RESULTS AND DESCRIPTION OF METHOD



August 5, 1989

Golden Bee Minerals Inc. P.O. Box 159 Kamloops, B.C. V2C 5K3

ASSAY CERTIFICATE FOR SAMPLES PROVIDED

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As
1R01	3011	25.8	26	20	6	5750
-1R02	1344	16.4	32	7	39	7260
- 1R03	48	0.6	83	23	35	30
- 1R04	117	44.6	7	19040	47	7960
-1R05	101	1.5	35	28	44	1520
1R06	1519	12.7	21	145	5	5810
v1R07	2240	15.4	17	34	7	4970
1R08	2379	8.8	22	12	14	6270
AR09	4576	44.2	56	18	61	13520
1R10	2578	3.6	73	25	35	14320
-1R11	3477	25.0	25	······································	12	11860
~1R12	2023 5Y64	- 900-0 495.1	52	24	24	12720
~1R13	1511	13.3	31	10	30	11680
~1R14	2180	7.0	13	<1	5	3970
~1R15	1922	6.0	23	10	11	5800
-1R16	2813	7.2	24	5	10	13650
-1R17	2124	8.1	16	10	7	8960
~1R18	526	17.8	23	3	16	4760
-1R19	1248	4.0	11	14	18	1930
- 1R20	1546	8.2	29	28	27	5820

WORK ORDER # 29044a

Au -- 15g Fire Assay/AAS Metals-- Aqua-regia digestion/AAS





See Appendix IV

"Geology and Sample Location Map Two Foot Creek Breccia Zone"

August 11, 1989

Golden Bee Minerals Inc. P.O. Box 159 Kamloops, B.C. V2C 5K3

ASSAY CERTIFICATE FOR SAMPLES PROVIDED

WORK ORDER # 29044B

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As
1R21	1443	12.4	12	10	6	5030
1R22	206	3.1	89	27	88	2630
1R23	1635	11.6	66	7	63	7800
1R24	53	3.5	101	23	. 99	60
1R25	58	4.0	12	38	59	150
1R26	2069	6.4	9	34	11	5280
1R27	3623	6.9	40	25	48	17600
1R28	1638	2.2	23	1	24	13300
1229	2388	1.6	21	5	23	19800
1R30	59	2.2	57	19	70	340
1831.	50	0.9	172	19	28	110
2R01	2825	89.7	22	37	18	9120
2R04	1242	21.7	19	<1	21	4050
2805	1643	24.6	Ĩ1	13	8	8330
2806	2814	6.3	41	4	28	13000
2807	1862	24.1	11	<1	6	4240
2R08	3801	8.2	15	16	13	10200
2R09	2651	13.5	61	8	41	10490
2R16	88	1.7	37	16	52	230

Au -- 15g Fire Assay/AAS Metals-- Aqua-regia digestion/AAS



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P. 4



August 11, 1989

Golden Bee Minerals Inc. P.O. Box 159 Kamloops, B.C. V2C 5K3

ASSAY CERTIFICATE FOR SAMPLES PROVIDED

1

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As
					<u>, , , , , , , , , , , , , , , , , , , </u>	
2R17	1448	2.0	67	14	70	12060
2R17#2	2444	13.4	45	21	36	3460
2R18	1336	22.1	66	30	52	5510
2R19	2791	191.3	215	41	36	12140
2R20	3364	12.3	61	23	67	12870
2R21	1300	4.2	88	26	107	9640
2R22	3359	9.7	58	33	43	13830
2R23	2749	10.2	56	12	37	11080
2R24	3944	7.9	41	29	28	9660
3R01	21	2.9	14	18	65	<10
3R02	41	2.8	13	2	35	<10
4R01	373	3.4	14	25	107	1580
4R01A	63	2.9	47	24	102	140
4R02	1055	17.4	48	28	36	2290
4R03	1829	19.7	64	8	48	5060
4R04	1609	50.0	65	24	18	5450
4R05	109	2.5	13	<1	14	940
1F01	99	4.7	14	189	152	820
1E02	31	4.2	7	9	9	30

WORK ORDER # 29044C

Au -- 15g Fire Assay/AAS Metals-- Aqua-regia digestion/AAS

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August 8, 1989

Golden Bee Minerals Inc. P.O. Box 159 Kamloops, B.C. V2C 5K3 See Appendix V for Sample Locations

ASSAY CERTIFICATE FOR SAMPLES PROVIDED

WORK ORDER # 29044e

Sample	ppb Au	ppin Ag	ppm Cu	ppm Pb	ppm Zn	ppm As
L5+00N 10+50E	20	0.5	84	25	115	100
6+50N 13210+00E	33	1.9	128	37	254	39 0
+25E	18	0.5	16	34	168	130
+50E	32	3.2	55	8.	154	3:0
+75E	36	1.4	58	9	192	170
11+00E	35	1.8	99	8	235	270
2+25N 132 10+00E	31	1.7	137	38	136	50
3+35N 132 10+00E	3578	19.6	194	6	137	28500
Unlabeled	62	1.3	47	35	202	40
891-1ST01	41	1.8	135	31	103	120
7891-1ST02 /	39	1.1	47	22	109	40
891-1ST03	291.	2.9	100	24	165	1560
891-1ST04	325	2.5	93	38	124	1990
891-1ST05	33-	1.7	76	41	127	40
891-1ST06	40	0.4	76	23	126	<10
891-1ST07	46	0.8	76	46	72	50
891-1ST08	36	1.5	25	2	127	510.
_891-1ST09	22	2.1	54	17	95	650.
4+50N 132 10+00E	26	1.0	97	29	254	670
+758	68	1.5	129	12	132	940
11+00E	29	0.6	84	25	202	190
+25E	21	1.7	74	32	303	170

Au -- 15g Fire Assay/AAS Metals-- Aqua-regia digestion/AAS

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P. 6

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August 8, 1989

Golden Bee Minerals Inc. P.O. Box 159 Kamloops, B.C. V2C 5K3

ASSAY CERTIFICATE FOR SAMPLES PROVIDED

		•	W	ORK	ORDEE	<u>R.</u> # 3	2904	4f				
Sample	वयव	Au	ÞÞm	Ag	ppm	Сц	ррю	РЪ	₽₽M	Zn	₽₽m	As

4

15

31

17

9

2

5

<1

1

7

21

25

43

530

173

291

256

V	
lai"	

L2+50N 10+00E	29	0.1	37
+25E	22	0 5	10
+50E	24	0.5	42
+75E	27	0.0	20
11+00E	27	0 6	40
L2+00E 9+37E	38	3 3	94 2 E
+50B	37	1 2	
31.10+00E 2+00N	23	1.2	120
62+00E 10+10E	28	0.1	174
+208	20	0.5	
+30E	20	1.0	132
+506	30	1.1	86
+758	24	0.7	25
101	24	0.9	25

Au -- 15g Fire Assay/AAS Metals-- Aqua-regia digestion/AAS

*~~ -



130

30

150

F. 8



August 8, 1989

Golden Bee Minerals Inc. P.O. Box 159 Kamloops, B.C. V2C 5K3

ASSAY CERTIFICATE FOR SAMPLES PROVIDED

ppb Au ppm Ag ppm Cu ppm Pb ppm Zn ppm As Sample 0.9 L+200N 9+87E 2.4 L2+50N 9+00E 1.5 9+50E 9+75E 0.9 2.3 L3+00N 9+00E 2.5 9+25E 2.0 9+50E 9+75E 2.8 1.8 L3+00N 132 10+00E 49 L3+50N 9+00E 2.2 +50E 1.5 17. +75R 2.1 2.1 132 10+00E 10+25E1.8 1.2 10+50E 10+75E 1.8 0.7 11+00E 1.7 <1 4+00N 132 10+00E - 67 0.7 10+25E 2.0 10+25E0.7 11+00E -19 1.6 11+15E - 28 1.3 5+00N 10+00E 32 · 0.8 +25E

WORK ORDER # 29044g

Au -- 15g Fire Assay/AAS Metals-- Aqua-regia digestion/AAS



105 Conner Danit Militahanna VT V18 077 DE (800) CCC 4000



August 13, 1989

Golden Bee Minerals Inc. P.O. Box 159 Kamloops, B.C. V2C 5K3

ASSAY CERTIFICATE FOR SAMPLES PROVIDED

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm sb
40100	10	0.4	A 17	7	17 A	40	20
45123	10	0.4	41	04	101	4U 200	20
45124	17	0.3	40	24	121	200	30
45125	21	1.2	51	20	172	<10	10
4S126	25	0.3	28	8	125	10	10
4S127	19	0.2	52	11	85	140	10
4S128	61	0.7	40	10	134	340	<10
4S129	23	<0.1	24	7	143	40	20
4S130	20	0.1	99	11	114	80	<10
4S131	27	0.6	17	31	186	270	<10
4S132	32	1.5	51	31	116	190	30
4S133	21	1.6	14	1	113	770	20
45134	17	1.7	14	1	62	230	20
45135	13	0.2	72	13	96	160	<10
4S136	18	2.2	26	8	79	200	20
45137	31	1.1	235	<1	171	290	<10
45138	20	1.2	43	6	95	190	<10
45139	20	1.3	44	22	64	670	10
45140	28	0 7	43	30	59	850	20
45141	20	07	59	33	93	490	10
45142	25	1 2	46	10	73	550	10
19113	11	<u>n</u> 9	58	ġ	70	800	<10
40140 AG144	11	0.2	55	<10	147	770	<10
40144	10	0.2	12	<u>с</u>	186	550	20
40140	10	20.2	70	6	110	230	30
4S146	<10	<0.1	79	6	119	230	30

WORK ORDER # 29082B

Au -- 15g Fire Assay/AAS Metals -- Aqua regia digestion/AAS

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GERALD F. HAYE SC.I UNIOS



August 13, 1989

Golden Bee Minerals Inc. P.O. Box 159 Kamloops, B.C. V2C 5K3

ASSAY CERTIFICATE FOR SAMPLES PROVIDED

WORK ORDER # 29082C

Sample	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppb sb
	<u> </u>						
4S147	INS	1.3	137	16	95	420	<10
45148	30	1.6	32	<1	84	510	20
45149	21	1.4	44	18	175	60	30
45150	$\frac{1}{23}$	1.6	91	13	437	40	20
45151	17	1.7	87	20	136	230	10
45152	15	1.7	67	12	185	130	10
4S153	22	1.8	38	3	218	40	10

Au -- 15g Fire Assay/AAS Metals -- Aqua regia digestion/AAS



105 Copper Road, Whitehorse, TY, Y1A 2Z7 Ph: (403) 668-4968 Fax: (403) 668-4890

852 E. HASTINGS ST.

V6A 1R6 PHONE (604) 253-3158 FAX ()253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3NL 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR HN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: SILT/ROCK AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

COUVER B.C.

DATE	RECE	IVE	D:		-	D	ATE	REP	ORT H	AILE	D:					BIGN	ied j	BY		\sim	J.D.	TOYE,	C.LE	ONG,	J.WAN	G; CE	RTIFI	ED B.	C. AS	SAYER!	5
		÷.,	v.									•	•		PRO	JECI	r 80	09	F	ile	4	89-	460	9							
SAMPLE#	ňo PPN	Cu PPH	Pb PPN	Zn PPN	Ag PPN	NÎ PPM	Co PPN	Mn PPM	Fe X	As PPN	U PPM	Au PPH	Th PPM	Sr' PPH	Cd PPN	Sb PPN	Bi PPM	V PPH	Ca X	P X	La PPH	Cr PPM	Mg X	Ba PPN	ti X	8 PPM	AL X	Na X	K X	W PPH	Au r PPB
GBS-1	1	103	13	151		47	21	919	5.02	135	5	ND	1	119		10	2	42	1.08	.092	10	32	.90	140	.D1	5	1.47	.01	-08	311	38
G85-2	2	- 44	9	63	3855	28	9	586	3.99	7861	, 5	ND	2	321	- M 13	144	2	20	4.49	.059	3	17	.99	57	\$01	- 4	.66	.01	.17	- 3313	320
GBS-3	1	104	- 4	101	2.1	51	18	550	5.33	13160	5	ND	1	176	20 H	310	2	20	.51	.066	6	16	.32	110	801	2	.53	-01	.22		1100
GBS-4	4	23	5	20	4.6	18	4	54	1.41	8799	5	2	Í	15	- M 19	473	2	2	.04	.003	2	12	-01	18	8018	2	.12	.01	- 06	- 3348	3420
GBS-5	4	36	8	31	3.6	24	8	151	1.91	6461	5	Ž	1.	62	1	120	Ž	7	.11	.016	3	15	.06	65	-01	11	.26	.01	.11	i	3590
GBS-6	4	31	7	26	12.0	21	5	79	2.20	12869	5	3	1	72		455	2	6	.32	.017	2	12	.32	73	101	2	.24	.01	- 10		4560 =
GBS-7	- 4	53	6	47	13:4	28	8	152	2.90	1242	5	3	1	22		137	2	6	.17	.027	3	13	.09	76	301®	Ž	.28	.01	.11		4540
GBS-8	- 4	91	8	96	1.2	50	17	664	4.63	3570	5	ND	1	61	201	76	2	47	1.42	.0838	7	33	.92	63	201	4	.63	.01	.17		510
GBS-9	2	16	10	31	8.6	16	5	875	3.86	362	5	ND	2	947	186	2	2	11	9.50	.029	4	10	2.60	35	8018	5	. 14	-01	.07		108
STD C/AU-R	19	62	42	132	6.8	67	31	1022	4.02	43	18	-7	39	50	19	16	17	60	.49	. 099	40	55	.88	176	06	35	1.98	.06	.14	33	510

✓ ASSAY RECOMMENDED

GBS-1	SILT SAMPLE, in creek = 50 meters north of L 5+50N.
GBS-2	Rock; taken of slightly sheared sediments, 40 meters north of LS+50N
GBS-3	ROCK; At #89- IR29 locale, chip across 60 cm.
G85-4 :	ROCK; South extension of sample 891-2R06;
G-85-5 :	ROCK; south extension of sample "891-1RIS, chip along strike 90 cm.
GBS-6:	ROCK, ~ 10 meters north of \$891-2R09; grab somple of breccia 5-8 cm wide.
GBS-7:	ROCK; = 2 meters north of # 891-IRII, high grade grab across 10cm width.
CB5-8	ROCK; = 2-3 meters north of * 891- 1R12, mostly sectiments
GBS-9:	ROCK; G.T. took = 20 meters north of L STSON, qualtz-carbonate veincet.

APPENDIX II

, #

MINFILE 104M 013

UNE (1972) UNI 27.12		MINFILE - R	EPORT			
		Appendix	II			
INFILE ND.: 104M 013		/171-0		NATIONAL MINERAL I	NVENTORY NO.: 104M9 AUS	
ME(S):	HAPPY SULLI VAN					
TATUS:	Prospect			MINING DIVISION:	Atlin	
_T.S.:	104 M09 E					
ATITUDE:	59 30 4 5			UTM ZONE:	8	•
ONGITUDE :	134 13 0-0		•	UTM NORTHING:	6597174	
_EVATION	1125 Netres			UTM EASTING:	544334	
DMMENTS:	T rencho 7 923 - 1	es at boundary between Le Prospecting map and claim	ots 3286 and 3287,	Assessment Report		
DCATION ACCURACY:	Within 500 M					
DMMODITIES:	Gold	Silver		.		
IGNIFICANT MINERALS:	Gold	Electrum	Arsenopyrite	Pyrite		
SSOCIATED MINERALS:	Quartz	Calcite				
_TERATION MINERALS:	Quartz	Linonite				
TERATION TYPE(5):	Silicific'n	Uxidation				
GE OF MINERALIZATION:	Unknown					
EPOSIT CHARACTER:	Vein	Disseminated				
EPOSIT CLASS.:	Hydrotherma 1	Epigenetic				
HAPE:	Tabular					
DDIFIER: EMENSIONS:	Fractured 3000 24 (Sheared (METRES)				
DMINANT HOST ROCK:	Sedimentary					
ROUP: Laberge				STRATIGRAPHIC	AGE: Lower Jurassic	
_ETHOLOGY:	Greywacke Argillite Quartz Vein					
ECTONIC BELT:	Intermontane	C+ + L -	inia			
HYSIOGRAPHIC AREA:	Teslin Plateau	SUM				
ESERVES:						
ZONE: HAPPY SULLIVAN						
CLASSIFICATION: Best	Assay				-	
UALE: 1933						
COMMONITY		GRADE			·	
Gold	323	.6000 Grams per tonne				
Silver	226	2000 Grams per tonne				
COMMENTS:	Grab sample a du	ump, west side of adit or	ortal.			
REFERENCE:	Minister of Nine	es Annual Report 1933, pa	ige 81			
EOLOGY:	T!	he area of the Happy Su⊫ll	livan showing is u	nderlain by north [.]		0-4-7
					CONTINUE	013 D.,
	·					

		-
	·	
RUN DATE: 88/12/10 RUN TIME: 00:27:12	MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES MINERAL RESOURCES DIVISION - GEOLOGICAL SURVEY BRANCH MINFILE - REPORT	PAGE : 2:
Appendix II	northwest trending, moderately to steeply east dipping Lower Jurassic Laberge Group greywackes and argillites. A north to northwest trending silicified shear zone at least 24 metres wide and 3 kilo- metres long on the north side of Hope Creek, dips vertically to steeply west. The shear zone contains vuggy quartz veins up to 0.9 metres wide with up to 10 per cent disseminated arsenopyrite, pyrite and gold, commonly in dendritic habit. The mineral zation has been explored by an upper and lower adit and several trenches. A grab sample from a quartz dump on the west side of upper adit assayed 323.6 grams per tonne gold and 226.2 grams per tonne silver (Minister of Mines Annual Report 1933, page 811).	
BIBLIOGRAPHY: DATE CODED: 850724	EMPR ASS RPT *7923, *10511, 17253 EMPR FIELDWORK *1985, pp. 185-189 EMPR AR 1918-92; 1919-369; 1927-141; 1930-123; *1933-81 EMPR EXPL 1980-498,499 GCNL #143,#201, 1977; #6,#180,#237, 1980; #80, 1981; #171, 1983; #180,#223,#234, 1984; #32,#85, 1985 N HINER Aug 7, 1975; Nay 21, 1981; May 13, 1982 IPDN Nov/Dec 1984; Feb/Mar 1985 GSC MAP 19-1957; 1418A V STOCKWATCH Dec. 3, 1987 CODEO BY: GSB FIELD CHECK: NO	
DATE REVISED: 881107	REVISED BY: TGS FIELD CHECK: YES	

APPENDIX III

MINFILE 104M 014

	Anner	dix TI			
MINFILE NO.: 104M 014	Apper			NATIONAL MINERAL	INVENTORY NO.: 104M8 Au2
NAME(S):	ENGINEER				
STATUS:	Past Producer	- Ur	derground	MINING DIVISION:	Atlin
N.T.S.:	104M08E			UTM TONE -	P
LATIOUS:	59 29 15 134 14 00			UTM NODTHING -	8 6594380
I SVATION	134 14 VV			UTH FASTING.	543423
OMMENTS:	Occurrence	associated with	two main vein sys	stems; the Engineer and	±
	Double Dec	ker veins.	·	_	
DCATION ACCURACY:	Within 500 M				
COMMODITIES:	Gold	Silv	er	Antimony	
	Tellurium			-	
SIGNIFICANT MINERALS:	Gold	Berthierite	Antimony	Telluride	Arsenopyrite
SIGNIFICANI MINERALS C	UNMENTS: VISIDLE GOLD	Chalconvoite	Calotte	ЖI. Сизалтт	
ASSOCIATED MINERALS: ASSOCIATED MINERALS:	MMENTS: Pyrite conte	and is less than	1 ner cent.	yvai iz	
ALTERATION MINERALS	Mariposite				
AGE OF MINERALIZATION:	Unknown				
DEPOSIT CHARACTER:	Vein				
DEPOSIT CLASS.:	Epithermal	Epigenetic			
SHAPE:	Kegular	CTRTUE INTE			
COMMENTS -	Numerous voine in d	JIKIKE/UIP Leonsit Strike	. ZV 7V A ² the veine ie he	tween 10 and 20	
JUMMLIIJ,	degrees.	aposta puine		The state of the s	_
DOMINANT HOST ROCK;	Sedimentary				
GROUP: Laberge				STRATIGRAPHIC	AGE: Lower Jurassic
LITHOLOGY:	Bedded Greywacke				
	Banded Siltstone				
	Banded Shale				
	Quartz carcite vem				
TECTONIC BELT:	Intermontane				
TERRANE:	Inklin		Stikinia		•
PHYSIOGRAPHIC AREA:	Teslin Plateau				
PRODUCTION: ** ALL ME ** ALL IM	TRIC VALUES ARE IN KI PERIAL VALUES ARE IN	LOGRAMS EXCEPT P Pounds except pr	RECIOUS METALS WHI EDIDUS METALS WHIC	CH ARE IN GRAMS ** H ARE IN DUNCES **	
YEAR Tonnes	Tannes	Ca) - 1	Cilver		
Mined	M16180	u010			
	•	/ * **	- (70		
1952 0	0	6,283	3,670		
1949 181	0 0	371 2 489	1 462		
1945 0	0	871	498		
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Appendix III

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SYSTEMS

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES MINERAL RESOURCES DIVISION - GEOLOGICAL SURVEY BRANCH MINFILE - REPORT

1944	45	0	4,386	2,706
1934	1	0	1.804	1, 182
1933	27	0	3.204	1,991
1932	27	0	6.780	2.675
1928	363	ō	6,003	4, 137
1927	3.800	3.800	62,984	43.544
1926	8.400	8.350	240,488	164.784
1925	1.542	1.541	58.069	27.619
1918	44	6	13.872	7.465
1917	30	Ō	31, 103	••••
1916	197	Ğ	21,990	16.111
1915	290	290	27.215	
1914	245	0	31, 103	
1913	281	28	42,145	
METRIC TO	TAL:			
	15,564	14,263	561,659	278,373
IMPERIAL	TOTAL: Tops	Tons		
	17, 156	15,722	18,057	8,949

GEOLOGY :

The Engineer Mine is located on the east side of Tagish Lake about 15 kilometres south of Graham Inlet and 30 kilometres west of At in. The property was discovered in 1899 and operated for 3 years. Underground work and production then took place from 1910 to 1918, from 1922 to 1928, during the summer only from 1929 to 1930, and handmined from 1932 to 1934. Sporadic work occurred in 1948, 1952, 1962, 1982-1983, and in 1987 most recently by Total Erickson.

The mine is associated with several vertical, northeast-southwest striking quartz/calcite veins hosted in well bedded sediments of the Laberge Group. Shales, siltstones, and greywackes show excellent graded bedding, load casts, flame structures, and are fossilized. Regional bedding strikes northwest-southeast and dips moderately northeast. Isoclinal folds are orientated northwest-southeast parallel to the main shear zones which run through the property. The veins are perpendicular to these structures and discordant to bedding. A second phase of buckling occurred perpendicular to the first phase. "Quartz hubs" or zones of massive bull quartz occur where the ore-producing veins intersect the shear zones, although these "hubs" are barren.

The Engineer Mine quartz veins are narrow, less than 2 metres, but have consistent orientations. The grades however, are very sporadic ranging from only a trace of gold to 50 grams per tonne. Native gold is the main metallic mineral and occurs in pockets. There is also pyrite, tetrahedrite, chalcopyrite, mariposite, antimony, berthierite, and tellurides. The veins are very vuggy with many open space textures. They have very "clean" contacts with the host rock and commonly exhibit graphitic banding. The Double Decker and Engineer veins lie to the southwest of the shear zone and the Boulder vein lies to the northeast. The Engineer and Double Decker veins received the most work.

Estimated production from the Engineer Mine from 1913 to 1952 is 15,564 tonnes grading 36 grams per tonne gold and 17,9 grams per

> MINFILE ND.: 104M 014 CONTINUED...

RUN TIME: 00-97:12	MINERAL RESOURCES DIVISION - GEOLOGICAL SURVEY BRANCH MINFILE - REPORT	
	tonne silver (Exploration in British Columbia 1987, pages 83-87).	Ppend'X II
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	EMR MIN BR OTTAWA RPT. 763, Invest. 609 EMPR Monthly Rpt. (T. Shroeter Oct. 1975) GCNL Mar.1,June 24,July 8, 1975; #166,#242, 1980; #5, 1982 EMPR ASS RPT 7923, *9049, 10511, 17253 NUMER JUL 24, 1075, Jon 7, 1982, Aug 25, 1983	
	N MINER OUT.24, 1975; Jan.7, 1982; AUG.23, 1985 EMPR EXPL *1987-A12,A42,BB3-87 EMPR PF (*Morgan, D.R., (1982): A Geological Report on the Reverted Crown Grants and Located Nineral Claims of Windarra Minerals Ltd., Surrounding the "Engineer" Gold Mine; Nihalynuk, N.G., et al	
	(1988): A Closer Look at the Llewellyn rault-rectoric implications and Economic Mineral Potential; In Abstracts: Smithers Exploration Group Workshop, October 1988) EMPR FIELDWORK 1985, pp. 184-189 GSC BULL 5, pp. 22-23	
DATE CODED: 850724 DATE REVISED: 881107	CMJ Oct. 15, 1916, p. 489 CODED BY: GSB FIELD CHECK: NO REVISED BY: MHG FIELD CHECK: YES	







APPENDIX IV

GEOLOGY AND SAMPLE LOCATION MAP

TWO FOOD CREEK BRECCIA ZONE

APPENDIX V

MAP OF 1989 PROSPECTING

(GB 1 CLAIM GROUP)

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