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# Assessment Report
# On
# Geological, Geochemical, Geophysical & Diamond Drilling Work On The Following Claims

**Clone 1-2, 3-4 321440-1, 340012-13**
**Port 17-21....324516-324520**
**Red 12, 17....323646, 323649**
**Edward 10...341272**
**Sut 2-3...34095-96**
**White 1-3...341097-99**

**(Part of the "Clone" property)**

**Statements Of Exploration**
**#3099262**
**#3099311**
**#3101864**

**located**

**20 Km Southeast Of**
**Stewart, British Columbia**
**Skeena Mining Division**

**55 degrees 48 minutes latitude**
**129 degrees 47 minutes longitude**

**N.T.S. 103P/13W**

**Project Period: June 15 to Oct. 21, 1996**

**On Behalf Of**
**Teuton Resources Corp.**
**Vancouver, B.C.**

**Report By**

**E.R. Kruchkowski, B.Sc., P. Geol.**
**April 12, 1997**

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

24,938

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## SUMMARY

The Clone property, owned by Teuton Resources Corp. and Minvita Enterprises Ltd. is located about 20 kilometers southeast of Stewart , British Columbia in the Skeena Mining Division. The property covers an area of Hazelton pyroclastic volcanic and sedimentary rocks in the vicinity of a variety of intrusive plutons associated with the main Coast Range Batholith.

The property lies within a belt of Jurassic volcanic rocks extending from the Kitsault area, south of Stewart, to north of the Stikine River. This belt is host to numerous gold deposits with associated base metal values, in a variety of geological settings, including the producing Snip, Eskay Creek and Premier-Big Missouri properties. Reserves have been reported from a number of other properties including Red Mountain, the Brucejack Lake area and Georgia River. In addition numerous gold-silver showings have been reported by exploration companies along this belt of rocks. At least three porphyry type deposits with either Cu-Mo, Cu-Mo-Au or Cu-Au mineralization are also present. Of particular interest is the Red Mountain gold deposit hosted in a hornblende porphyry (Goldslide Intrusive) in association with massive pyrite and zinc and peripheral molybdenum mineralization.

In the period June to October 1996, an extensive exploration program was conducted on the property including:

1. A total of 11, 487.14 m of diamond drilling (7652.44 m of BTW size and 3834.7 m of NQ2 size).

2. A total of 1312.85 m of trenching in 141 separate trenches, as well as extensions to 1995 trenches (121.4 m in 8 trenches on Sutton zone, 1191.45 m in 133 trenches on main Clone zone)

3. A total of 392 samples taken in the course of a regional geochemical program.

4. Gridding and location of a permanent base line. A total of 65.3 line kilometers of grid was established with crosslines every 25 m and stations located 25 m along each line.

5. Surveying of all drill holes and trenches to provide accuracy control as well as elevation control.

6. A magnetometer survey over the established grid.

7. Geological mapping of the nunatak hosting the Clone gold occurrence at a scale of 1:2,000, as well as mapping the immediate area of the gold showings at a scale of 1:500. Preliminary mapping of the Sutton zone was also completed.

8. Downhole IP surveys in 5 separate drill holes, to test for extensions of mineralization

encountered in the holes or nearby areas.

9. Petrographic studies on sulfide mineralization, both in drill holes and surface trenches.

10. Structural study in the immediate area of the S. and H. mineralized zones.

11. Saw-cut sampling to confirm 1995 trench results as well as check sulfide-hematite rich zones in immediate vicinity of camp.

In the course of the programs, a total of 1539 surface and 8161 core samples were collected and analyzed for metal content by ICP analysis (29 element package) and for gold using atomic absorption methods. Any anomalous gold, silver, copper, arsenic and cobalt (greater than 1000 ppb, 30 ppm for the first two and greater than 10,000 ppm for the copper and arsenic and greater than several hundred ppm for the cobalt were assayed.

Mapping of the Clone nunatak indicates that the geology underlying it forms a homoclinal sequence of volcanic and sedimentary strata which strikes southeast, is subvertical with the younger rocks to the southwest. From northeast to southwest, the succession includes: a dominantly sedimentary sequence with lesser intercalated andesitic volcanics cut by a large diorite to gabbroic intrusion; a heterolithic sequence including a basal maroon volcanic breccia overlain by basaltic to andesitic breccias and siltstones and intruded by a series of hornblende-biotite porphyry silt-like bodies; and a dominantly volcanic package comprising mafic flows, silts and breccias.

Mapping in the area of the Clone gold-copper-cobalt and gold-copper veins was completed at a scale of 1:500. From southwest to northeast, the geology comprises black siltstone, andesitic to basaltic tuffs, hornblende-biotite porphyry and megabreccia. Facing indicators in the sedimentary strata including graded and cross-bedding suggest tops are to the southwest. All of the volcanic units on the property have been significantly altered and deformed, such that fragments are aligned toward 315 deg., which is the dominant foliation direction on the property. Alteration is pervasive potassic and sericitic and is locally intense. Mapping has shown that high angle reverse faults to the north of the drilled areas have obscured the north extension of the H. and S. zones.

Mineralization within the area of the Clone gold bearing shears consist of two different and distinct types. The mineralization is hosted by steeply dipping, sub-parallel, en echelon, shear controlled veins and stockworks with a northwesterly trend. The first type of mineralization called the S-zones, consists of massive to semi-massive pyrite/arsenopyrite with chalcopyrite, minor magnetite and hematite occurring as stringers, lenses and stockworks within chloritic, schistose volcanic rocks. The second type called the H- zones consist of zones and stockworks of semi-massive to massive, hematite in wide zones of intense hematite, chlorite and K-spar alteration with local silicification. Late quartz-calcite veinlets form strong stockwork zones along the hematite-chlorite altered zones. Specularite, chalcopyrite, magnetite, rare bornite and tennantite and locally visible gold are associated with the hematite dominated mineralization. To date, 3 separate H-zones, namely H-1, H-2 and H-3 have been identified as well as numerous hematite dominated stringer zones. The S-2A zone appears to be a north extension of the S-zone in that it contains massive to semi-massive pyrite and arsenopyrite and little hematite and has appreciable cobalt content similar to that for the S-zone. The S-2B zone is a relatively short hematite-sulfide zone that appears to be a mixed zone containing both S-type and H-type mineralization. The Stringer zone may well be a northern extension of the S-2B zone.

The sulfide dominated mineralization (S and S-2A)prevails in the southwestern portion of the trenched area with the structures being linear in nature and traced intermittently over distances up to 500 meters in length. The hematite dominated structures (H-1, H-2 and H-3), which occur northeast of the sulfide bearing structures, have less defined walls but show good strike lengths as well. Work has indicated that the mineralized structures are found over an area at least 75 meters wide by 300 meters long in the surveyed area. Hematite and sulfide rich zones topographically higher and north of the immediate area of the H and S zones are probably extensions of these zones but in all likelihood stratigraphically higher through faulting.

Of particular interest is the fact that much of the hematite mineralization on the Clone project shows many similarities to the Olympic Dam deposit.

Trenching was conducted on all discrete zones of sulfide or hematite rich zones, shear zones, particularly where clasts are matrix supported by black chlorite and wide zones of sericite-pyrite alteration.

Results of the trenching indicated significant gold values over significant widths and lengths as well as outlining new zones. The best trench results in the sulfide zones were from Trench 95, 99 and 195 which yielded 2.617 opt gold and 0.768% cobalt across 2.2 meters, 0.703 opt gold and 0.073% cobalt across 5.7 meters and 0.58 opt Au and 0.068% Co respectively. The best trench results in the hematite zones were from Trench 91 and 100 which yielded 0.966 opt gold across 0.75 meters and 2.328 opt gold across 1.0 meters respectively.

Results from the trenching on the Sutton zone indicate significant gold values associated with high arsenic, copper and local high cobalt values similar to that for the Clone system. This indicates that the gold-cobalt system within the property area has a potential strike length of at least 5.5 km.

Saw-cut sampling was conducted in the areas of Trench 11 and 13 to verify the 1995 trench results. A good correlation was obtained between the 1995 chip sampling and 1996 saw-cut sampling. In addition, 21 cuts were completed over mineralized stringer zones in the immediate area of the camp. Sampling indicated anomalous to significant gold results up to 5.202 opt Au across 0.9m.

Geological mapping in combination with trenching indicates that hematite rich zones containing chalcopyrite and occasionally magnetite extend at least an additional kilometer beyond the 1996 drill area. These zones are lenticular and generally extending 200-300 m in length. To date, only low gold values have been obtained from trenching these zones; however, it is speculated that they may well be stratigraphically much higher than the gold deposition. In addition the area of extension of the hematite bearing zone appears to have been shifted by numerous high angle reverse faults.

The magnetometer survey was conducted over 65.3 line kilometers of grid; approximately 30.3 line kilometers on Kshwan Glacier and 35 line kilometers on the Clone nunatak. Readings varied from a low of 49, 813 to a high of 51, 542 nT. Contouring the data after 49, 800 nT were subtracted from all readings shows a linear magnetic high approximately 400 m long and 25 m wide that corresponds with the location of the H-1 zone. A strong anomaly parallel to the grid lines at the edge of Kshwan Glacier appears to reflect a steep break in slope.

A structural interpretation undertaken on the Clone project measured foliation, joint and fracture cuts as well as faults. This study indicated a dominant trend of rock units, shears and cleavage towards 320 degrees. Deformation in the area was likely a cyclic brittle-ductile event. The overall direction of movement within the primary shear system is sinstral, with some vertical component.

The petrographic studies on the gold-bearing sulfide filled shears indicates that the gold is primarily associated with arsenopyrite and to a lesser extent pyrite. The gold appears to form along micro-fractures within the sulfide grains, late in the paragenetic sequence. The study failed to identify the cobalt bearing mineral.

Five drill holes were surveyed using an axial gradient for a directional Down Hole Induced Polarization survey. The survey was successful in identifying IP anomalies coincident with mineralization. Based on the survey, it appears that extension of some of the mineralization may lie at depth and to the west relative to the holes. This would indicate possible extensions of mineralization particularly for hole 18 and hole 29. It also appears to verify a possible shallow dip to the NW for gold bearing zones along the mineralized structures.

The drilling on the various shear zones indicates that sulfide zones appear to have a shallow plunge towards the northwest. Due to the large number of drill holes, numerous gold-bearing intersections were obtained in the program. The best results from the H-1 zone are in DDH-110 which intersected 10 m of 1.278 opt Au (43.81 gpt), DDH-93 which intersected 12.2 m of 0.237 opt Au (8.12 gpt), DDH-68 which intersected 2.71 m of 1.293 opt Au (44.51 gpt), DDH-124 which intersected 7.01 m of 0.427 opt Au (14.64 gpt) and DDH-77 which intersected 6.1 m of 0.317 opt Au (10.87 gpt Au). The best results for the S-Zone drilling included DDH-18 which yielded 30 m of 0.36 opt Au (12.32 gpt) and 0.09 % Co, DDH-41 which intersected 7.15 m of 0.525 opt Au (18.01 gpt) and DDH-44 which intersected 3.88 m of 0.20 opt Au (6.99 gpt). Drill results for the H-3 zone were low. The best drill results for the S-2A zone include DDH-126 which intersected 1 m of 1.134 opt Au (38.87 gpt) DDH-60 which intersected 3 m of 0.140 opt (4.80 gpt) and DDH-65 which intersected 0.5 m of 0.894 opt Au (30.65 gpt). Drilling indicated that the H-1 zone extends to at least a 200 m depth as evidenced by the intersection in DDH-30. In addition, small scale westerly trending reverse faults have offset the H-zone 10-15 m in a west direction.

Using a gold grade cut-off that is equal to 1 gpt Au across 1 m , a resource calculation was completed for the Clone project. Based on trenches and drill holes to date, a total of 149, 895 tons of drill indicated reserves at a grade of 7.89 gpt Au(0.23 opt) are indicated for the S-1 zone. In the H-zones (including H-2), a total of 115,612 drill indicated tons at a grade of 9.78 gpt Au (0.285 opt) and 88,221 geologically inferred tons at a grade of 7.6 gpt Au (0.22 opt) are indicated. For the S-2 A zone, a total of 96, 918 drill indicated tons grading 7.96 gpt (0.23 opt) and 73, 917 geologically inferred tons grading 11.58 gpt (0.34 opt) are calculated. The S-2B zone has a drill indicated 20,357 tons averaging 7.09 gpt Au (0.21 opt). In total, for all zones and all categories, 544, 920 tons grading 8.69 gpt (0.25 opt) are indicated.

The property has an excellent potential for increased reserves, particularly at depth and along strike of the presently defined mineral zone. Additional drilling in all likelihood will not only increase the tonnage but will also increase the grade. The recommended program would include the following:

1. IP survey over the area of interest, including the C-1 and C-2 structures.

2. Bulk sampling along the zones to compare grade based on sample size. A total of 10, one ton sample would be collected: five samples along the H-1 zone, one sample along the H-2 zone, one sample along the S-2B zone and three samples along the S-2A zone.

3. Extensive trenching on northwest side of the nunatak to check for extensions of the Clone mineralization, particularly the Anderson zone as well as test the Clone North zone. Trenching on the C-1 zone is required to evaluate geochemical results obtained in the 1996 program.

4. Drilling on down plunge extensions intersected in 1996 to see if some of the gold bearing zones extend to depth.

5 Drilling of deep holes to check beneath the high angle reverse faults for possible extensions of the H and S-2 A zones.

6. Further geochemical surveys to expand on areas of known mineralization

Estimated cost of the program is approximately $ 2,000,000.

## INTRODUCTION

An extensive exploration program designed to test the potential of the Clone property was conducted during the period June-October 1996. The work expanded on showings located and tested by trenching and drilling in 1995 as well as testing newly discovered zones.

Work was conducted by Teuton and Homestake (independent consultant) personnel accommodated in a permanent camp facility erected on the Clone 1 claim. All trenching was carried out by several blasters with trench sampling conducted by Alex Walus, Dave Hick, E. Kruchkowski and Rob McLeod. Trench locations, co-ordination and overall supervision was provided by E.R. Kruchkowski. Drilling was conducted by J.T. Thomas utilizing a JT 2000 drill to complete both BTW and NQ2 size core. Drill hole locations, angles and azimuths were determined by both Teuton and Homestake personnel under the direction of Dino Cremonese, President of Teuton Resource Corp. The Downhole IP survey was completed by Scott Geophysics Ltd. of Vancouver, B.C.

All rock geochemical and assay samples were analyzed by Echo-Tech Laboratories in Kamploops, B.C. or by Pioneer Labs in Vancouver, B.C. Vancouver Island Helicopters provided a Bell 206 and/or Bell 205 as well as Hughes 500 D in order to provide access and fly in supplies.

### Location and Access

The Clone 1 claim is located about 20 kilometers southeast of Stewart, British Columbia. The claim area is approximately 55 degrees 48 minutes latitude and 129 degrees 47 minutes longitude on NTS sheet 103P/13W.

Access to the claim at the present time is by helicopter from Stewart. Nearest road to the area is a non-maintained logging road running east along the south side of the Marmot River to a point about 9 km northwest of the property. Total length of the road from tidewater to its termination point is approximately 4 km.

### Physiography and Topography

The Clone 1 claim is situated southeast of Treble Mountain at the head of Sutton and Kshwan Glacier. The claim is part of a roughly 4 km square nunatak with much of the southern sections only recently exposed by rapidly retreating ice (southern ice edge is up to 200 m further south in places than that depicted on government topographic and claim maps). Elevations vary from approximately 1, 150 metres ASL on the icefield in the southern portion of the Port 21 claim to about 1,700 metres ASL on the height of land in the northern portion of the Port 20 claim. Except for the portions of the claims covered by permanent snow or ice, most of the upper ground is outcrop or talus cover with little vegetation. Snow tends to accumulate in the gullies formed by structures and vein systems. Just above the glaciers, thick morainal debris obscures

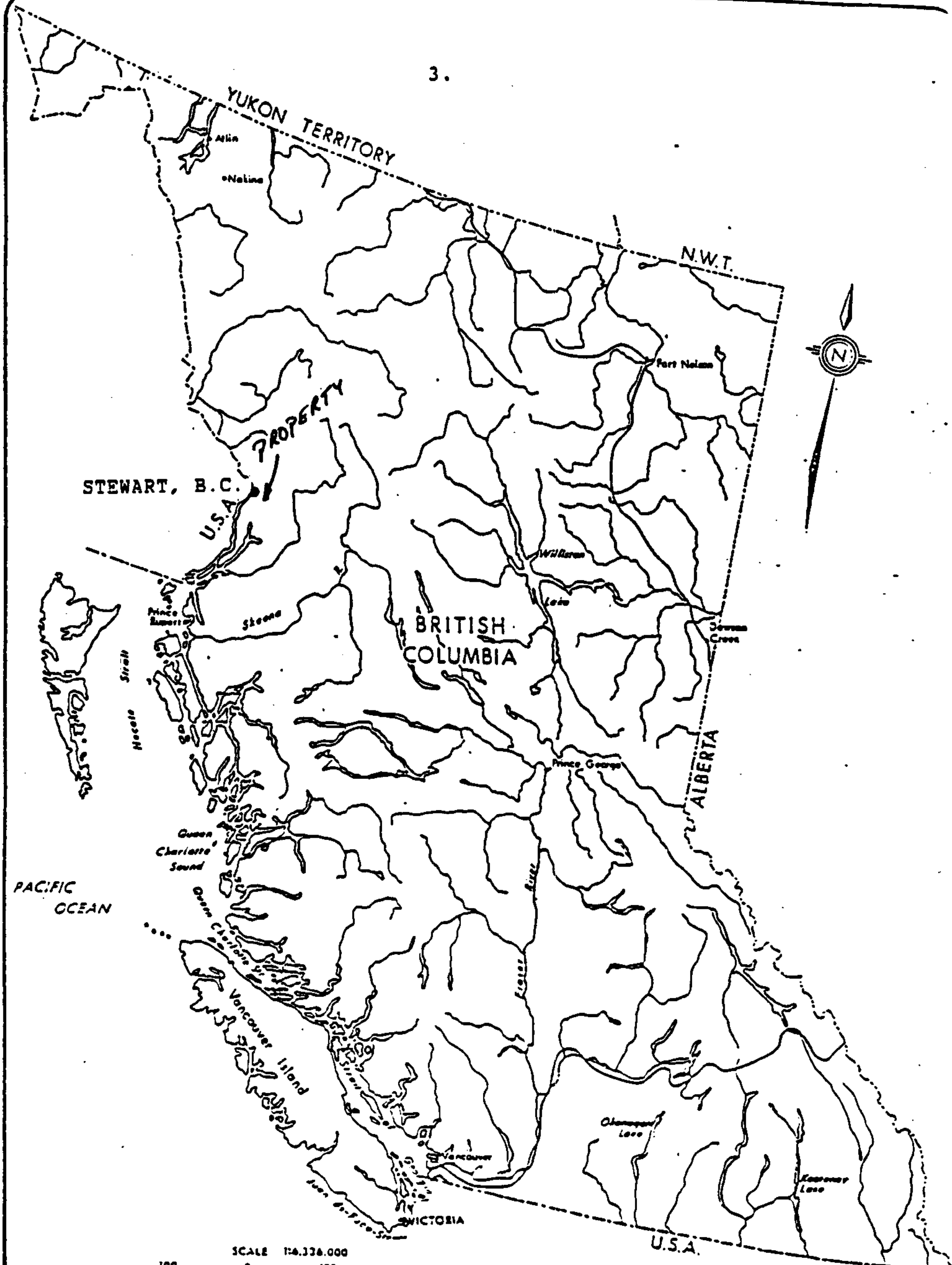



FIG 1 LOCATION MAP

BRITISH COLUMBIA

the underlying geology. Small ponds occupy depressions in a relatively flat area along the south edge of the Port 21 claim. Maximum rock exposure occurs in early October when most of the annual snowfall has melted. The surface exploration is restricted to late summer and early fall. Most of the nunatak can be traversed safely on foot although local areas contain occasional bluffs.

Small patches of tag spruce are present along the lower slopes of the nunatak, particularly the south facing edge. Alpine grasses, heather and arctic willows grow in patches along the talus, moraine and outcrops.

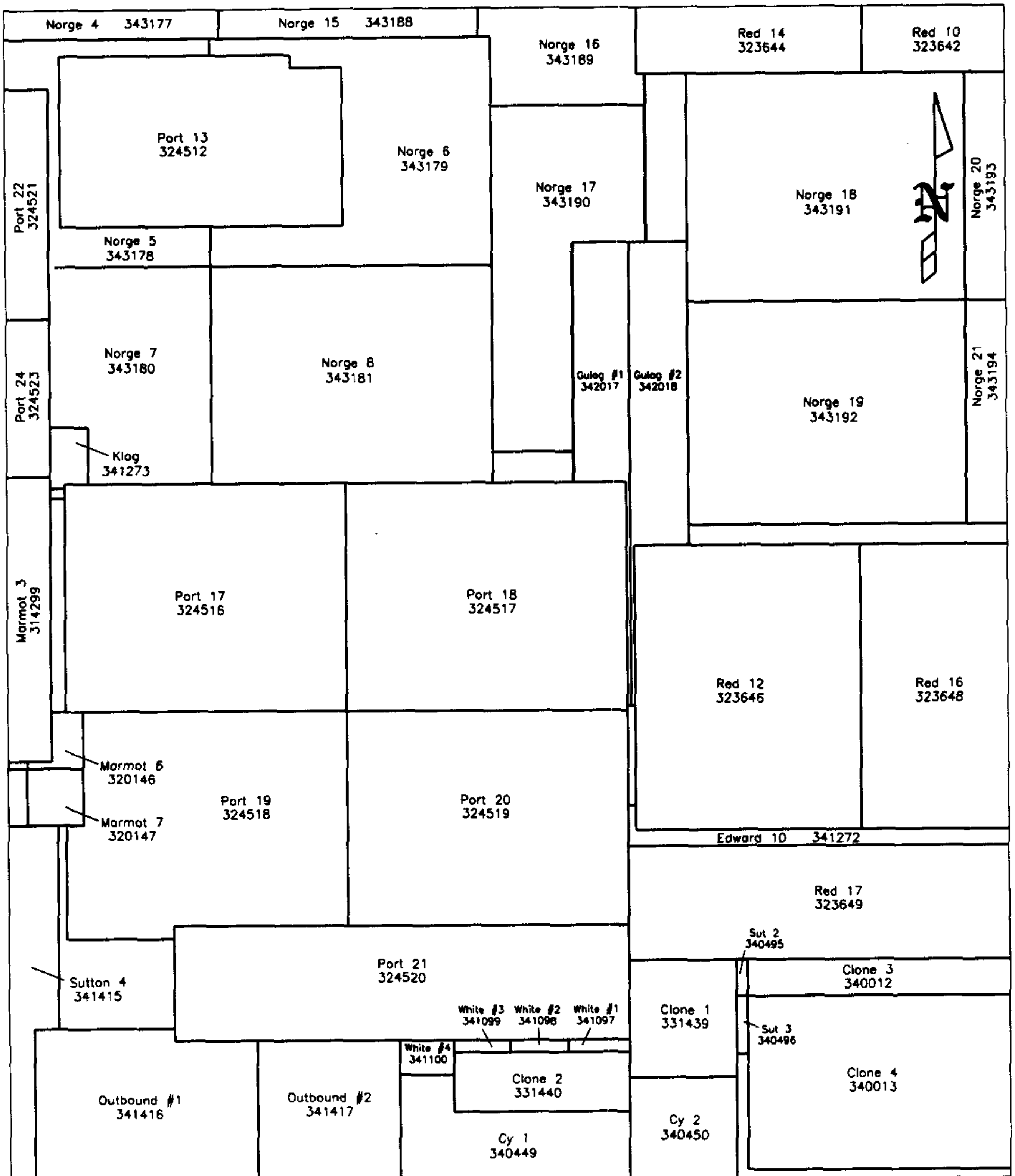
**Personnel and Operations**

Personnel involved during the exploration program are listed below:

| | | |
|---|---|---|
| E.R. Kruchkowski | -- Consulting Geologist | June 10 - October 21, 1996 |
| A. Walus | -- Consulting Geologist | June 10 - September 15, 1996 |
| D. Cremonese | -- President, Teuton Resources | June 10 - October 21, 1996 |
| D. Hick | -- Geologist | June 10 - September 15, 1996 |
| C. Kruchkowski | -- Blaster | June 10 - October 5, 1996 |
| B. Kirby | -- Blaster | June 10 - October 21, 1996 |
| A. Raven | -- Prospector | June 10 - October 21, 1996 |
| M. Moorman | -- Prospector/Geophysical Technician | June 10 - October 21, 1996 |
| S. Chandler | -- Cook | June 10 - August 30, 1996 |
| K. Powell | -- Cook | June 10 - September 15, 1996 |
| S. Searle | -- Cook | September 15 - October 18, 1996 |
| K. Bokesch | -- Cook | October 1 - October 15, 1996 |
| D. Roberts | -- Core splitter | June 10 - October 21, 1996 |
| C. Moehling | -- Carpenter | June 10 - October 15, 1996 |
| J. McFee | -- Laborer | June 10 - September 15, 1996 |
| C. Morrison | -- Laborer | June 10 - September 15, 1996 |

Homestake Personnel involved in the program are as follows:

| | | |
|---|---|---|
| A. Kaip | -- Geologist | June 10 - September 15, 1996 |
| A. Buschman | -- Geologist | June 10 - September 15, 1996 |
| R. McLeod | -- Geologist | June 10 - September 15, 1996 |
| B. Anderson | -- Prospector | June 10 - September 15, 1996 |
| C. Huggins | -- Geological Consultant | June 10 - August 30, 1996 |
| I. Harrison | -- Geologist | August 15 - September 15, 1996 |
| D. Lilly | -- Geological Assistant | June 10 - August 20, 1996 |
| K. Patterson | -- Geologist | July 15 - August 15, 1996 |




SCALE 1:50,000

1000 0 1000 2000 3000

METERS

**TEUTON RESOURCES CORP.**
**& MINVITA ENTERPRISES LTD.**

CLONE PROJECT, STEWART, B.C., SKEENA M.D.

**1996 WORK PROGRAM**
**CLAIM LOCATION MAP**

RPM Mapping and Computer Services Ltd.

Date: April 1997

NTS No.: 103P/13W, 103P/13E

*Figure:* 2

Personnel in the program mobilized to the Stewart area via vehicle or scheduled air flights (Smithers or Terrace). Casual laborers were hired in Stewart on a "as need" basis and were used during the construction of the permanent camp.

All personnel involved in the program, while on site were accommodated in the exploration camp located on the Clone 1 claim. While in Stewart, crews were accommodated either in a local hotel or rented house, provided by Teuton.

Supplies and materials for the job were purchased in Stewart and ferried in via helicopter.

**Property Ownership**

The area surveyed is part of a larger project known as the Clone project. Some of the claims surveyed consist of 148 units in 18 separate but contiguous single unit claims as well as modified grid claims. Relevant claim information is summarized below:

| Name | Tenure | No. of Units | Expiry Date |
|---|---|---|---|
| Red 12 | 323646 | 20 | 31 January 1998 |
| Red 16 | 323648 | 20 | 31 January 1998 |
| Red 17 | 323649 | 16 | 01 February 1998 |
| Port 17 | 324516 | 20 | 23 March 1997 |
| Port 18 | 324517 | 20 | 23 March 1997 |
| Port 19 | 324518 | 20 | 23 March 1997 |
| Port 20 | 324519 | 20 | 23 March 1997 |
| Port 21 | 324520 | 16 | 22 March 1998 |
| Clone 1 | 321440 | 4 | 05 October 1996* |
| Clone 2 | 331440 | 3 | 05 October 1996* |
| Clone 3 | 340012 | 6 | 04 September 1999 |
| Clone 4 | 340013 | 18 | 04 September 1999 |
| Sut 2 | 340495 | 1 | 17 September 1999 |
| Sut 3 | 340496 | 1 | 17 September 1999 |
| White 1 | 341097 | 1 | 01 October 1999 |
| White 2 | 341098 | 1 | 01 October 1999 |
| White 3 | 341099 | 1 | 01 October 1999 |
| White 4 | 341100 | 1 | 01 October 1999 |
| Edwardio | 341272 | 7 | 10 October 1996* |

| | | | |
|---|---|---|---|
| Gulag 3 | 342019 | 6 | 29 October 1996* |
| Gulag 4 | 342020 | 6 | 29 October 1996* |

*Prior to work filling.

The author did not examine the claim posts and cannot verify the quality and accuracy of the staking. The exact location of these claims would be subject to further surveys.

Claim location is illustrated on Figure 2 copied after available government NTS maps. Ownership is presently divided equally between Teuton Resources Corp. (50%) and Minvita Enterprises Ltd. (50%) of Vancouver, British Columbia. Teuton Resources Corp. is the operator of the project.

## Previous Work

The section on previous work has been excerpted from an assessment report prepared by Dino Cremonese in 1994:

"Exploration for metals began in the Stewart region about 1898 after the discovery of mineralized float by a party of placer miners. Sites which could be easily reached from Stewart were the first to be explored among which was the lower Marmot River area. This early phase of exploration culminated in 1910 when both Stewart and neighboring town of Hyder, Alaska boasted a population of around 10,000 people. Another boom period began in the early 1920's after the discovery of the very rich Premier gold-silver-lead-zinc mine in the Salmon River area, northwest of Stewart.

Although a number of gold and silver prospects were sporadically worked in the Marmot River region up to the early 1930's, only the Prosperity-Porter Idaho mine (at the head of Kate Ryan Creek, a tributary of the Marmot River) saw limited production. The prospect closest to the Port 20-21/Red 17 claims is the old Ficklin-Harder prospect located at the head of the Marmot River on the southern flank of Treble Mountain. It was explored by a few tunnels attempting to intersect high-grade quartz sulfide mineralization intermittently exposed on surface. Also exploration activities by Teuton crews have located large open cuts across sulfide bearing quartz stockworks along the upper east slopes of Treble Mountain. At this time the area covered by the property was probably mostly under snow and ice and hence unavailable for exploration by the "old-timers".

From 1940 to 1979 there was little activity in the region due to lackluster precious metal prices. However when silver and gold prices skyrocketed in the early 1980's, many of the old properties were re-examined by both small and large exploration companies. Success by a number of exploration companies, particularly in the Unuk River has led to continued exploration in the general area. The relatively recent discovery and ongoing development of the promising intrusive-related gold deposits at Red Mountain (1,000,000 ounces gold), located approximately 16 km east of Stewart, has again rekindled interest in the surrounding area."

During July to October 1994, an exploration program conducted by Teuton on the area of the present Clone property, consisted of reconnaissance geochemical rock and silt sampling in conjunction with prospecting and reconnaissance geological mapping.

Geological observations noted during sampling indicated that the property is underlain by a sequence of augite porphyry basalts, maroon clastic volcanics and argillites intruded by dykes of granodiorite and hornblende porphyry. These dykes which strike in a northwesterly direction vary from 2-10 meters in width.

Mineralization in the form of pyrite, plus/minus chalcopyrite, plus/minus magnetite and plus/minus molybdenite was observed in four different geological settings of potential economic significance.

Results of the geochemical program indicated highly anomalous gold, silver, copper, arsenic, molybdenum, tungsten, bismuth and cobalt values widespread throughout the area explored. Values as high as 1.786 opt Au, 8.32 opt Ag, 9.51% Cu, 0.75% As, 0.686% Mo, 0.144% W, greater than 1% Bi and 0.29% Co were obtained from different zones within a square kilometer of partially explored ground. Several anomalous lead and zinc values associated with pyrite bearing float rocks were located in an area of northerly trending shears.

During the period July to December 1995, Teuton conducted a follow-up program consisting of reconnaissance geochemical rock sampling, trenching and geological mapping on the Port 21 claim. This work led to the discovery of high grade gold values in parallel shears on the adjoining Clone 1 claim. In the period September to December 1995, work on the new discovery consisted of reconnaissance geochemical rock sampling, geological mapping, trenching, VLF and magnetometer surveys, diamond drilling and petrographic studies.

A total of 604 rock samples (218 grab and chip samples as well as 386 trench samples) were collected in the surveys and analyzed for metal content by ICP analysis (29 element package) and for gold using automatic absorption methods.

Results of the geochemical program indicate highly anomalous gold, silver, copper, arsenic and cobalt values throughout the Port 20, 21 and Clone 1 claim areas. Values as high as 8.66 opt Au, 15.71 opt Ag, 11.5% Cu, 15.75% As and 0.98% Co were obtained from different zones within the explored areas.

A total of 50.63 meters of trenching was completed in 13 trenches in the South Grid area.
Results of the trenching indicated significant gold veins (0.1 - 0.2 opt) over widths of 2 meters with locally higher grade zones across 1-2 meters. The best trench result in the above area included 1.6 meters of 1.433 opt Au (Trench 13).

A total of 463.2 meters of trenching was completed in 81 trenches in the North Grid area.
Results of the trenching indicated significant gold values over significant widths and lengths. The best trench result was from Trench 4 which yielded 3.59 opt gold across 5.5 meters. based on the trench results in conjunction with the geological mapping, four main gold bearing structures were outlined as follows:

| Structure | Mineralization Type | Width(m) | Length(m) | Grade(opt Au) |
|---|---|---|---|---|
| S-1 | Sulfide | 3.0 | 100 | 0.74 |
| S-2A | Sulfide/minor hematite | 2.3 | 365 | 0.71 |
| H-1 | Hematite | 5.2 | 191 | 0.74 |
| H-2 | Hematite | 1.5 | 18 | 2.62 |

In addition, trenching and geochemical sampling indicated an increase in cobalt values in the southeast portion of the above zones tested. Highest cobalt value in a trench was 0.71% across 1.5 meters in Trench 9, the most southerly trench.

A magnetometer and VLF EM survey were conducted over a portion of the established North Grid area. The contoured magnetic date shows a definite northeasterly orientation coincident with the general geological trend. One significant anomaly corresponds to magnetite mineralization present within the H-1 zone. A second anomaly is along the eastern edge of the survey area and is entirely underlain by ice. The plotted VLF EM data shows a general high coinciding with the general geology in the survey area.

A total of 1070.16 meters of drilling was completed in 13 holes located from a single pad east of Trench 47. The holes tested a 40 meter strike length of the H-1 structure along four different azimuths.

The most significant intersections were returned from the southeastern drill sections which tested the downdip extent of mineralization exposed in Trenches 4 (5.5 meters of 3.5 opt gold), 14 (3.11 meters of 3.77 opt gold) and 15 (7.5 meters of 0.76 opt gold). Hole 95-8 intersected 1.7 meters true width grading 1.67 opt gold at a drilled depth of 14 meters (beneath Trench 4) while hole 95-10 (beneath Trench 14) intersected 4.21 meters true width grading 1.85 opt gold at a 15 meter depth.

During the period May 17 to 19, 1996, an airborne geophysical survey (VLF EM and magnetic) was flown over two areas (a smaller close spaced survey inside a larger more widely spaced survey). A total of 72.3 kilometers and 524.5 line kilometers were surveyed in Zone 1 and Zone 2 respectively. The survey lines were orientated in a NE-SW direction, approximately at right angles to the overall NW geological trend for the Stewart area.

The program was conducted in order to evaluate any possible extensions to gold-magnetite-hematite and/or gold-pyrite-arsenopyrite bearing shear zones outlined in 1995 programs. In addition, the program was conducted to evaluate the surrounding claim areas peripheral to the gold discovery.

Results of the survey indicate numerous VLF anomalies throughout the surveyed area. Results for the magnetic survey show a close correlation between the underlying geology and magnetism. Unfortunately, the presence of highly magnetic mafic volcanic rocks just southwest of the gold-magnetite-hematite shears masks any trends for the shear zone.

## GEOLOGICAL SURVEYS

### Regional Geology

The Clone 1 property lies in the Stewart area, east of the Coast Crystalline Complex and within the western boundary of the Bowser Basin. Rocks in the area belong to the Mesozoic Stuhini Group, Hazelton Group and Bowser Lake Group that have been intruded by plugs of both Cenozoic and Mesozoic age.

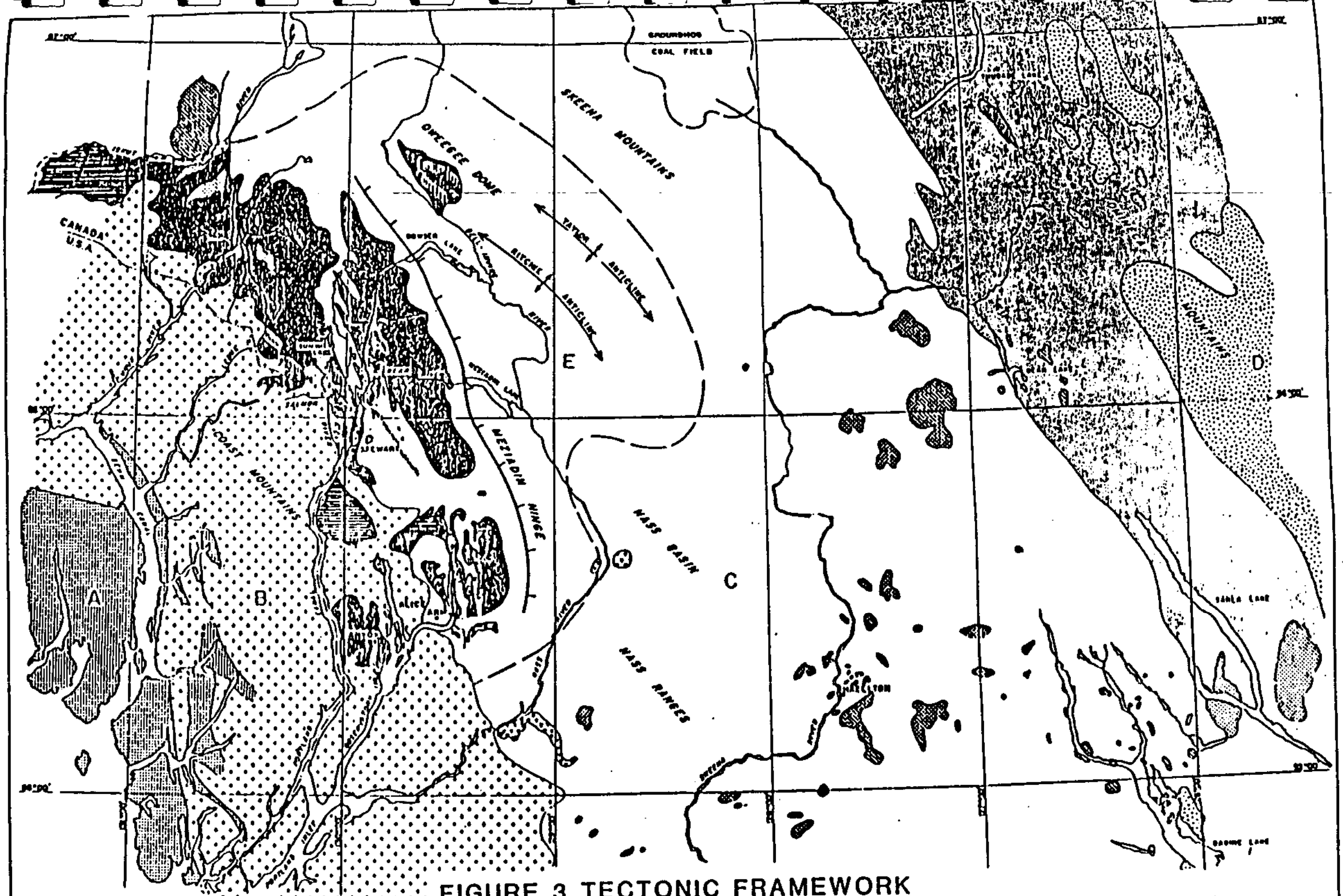
According to C.F. Greig, in G.S.C. Open File 2931, portions of the general Stewart area as well as the northern portion of the property are underlain by Triassic age Stuhini Group. The Stuhini Group rocks are either underlying or in fault contact with the Hazelton Group. These Triassic age rocks consist of dark gray, laminated to thickly bedded silty mudstone and fine to medium grained and locally coarse grained sandstone. Local heterolitic pebble to cobble conglomerate, massive tuffaceous mudstone and thick bedded sedimentary breccia and conglomerate also form part of the Stuhini Group.

At the base of the Hazelton Group is the lower Lower Jurassic Marine (submergent) and non-marine (emergent) volcaniclastic Unuk River Formation. This is overlain at steep discordant angles by a second, lithologically similar, middle Lower Jurassic volcanic cycle (Betty Creek Formation), in turn overlain by an upper Lower Jurassic tuff horizon (Mt. Dilworth Formation). Middle Jurassic non-marine sediments with minor volcanics of the Salmon River Formation unconformably overlie the above sequence.

The lower Lower Jurassic Unuk River Formation forms a north-northwesterly trending belt extending from Alice Arm to the Iskut River. It consists of green, red and purple volcanic breccia, volcanic conglomerate, sandstone and siltstone with minor crystal and lithic tuff, limestone, chert and coal. Also included in the sequence are pillow lavas and volcanic flows.

In the property area the Unuk River Formation is unconformably overlain by middle Lower Jurassic rocks from the Betty Creek Formation. The Betty Creek Formation is another cycle of troughfilling sub-marine pillow lavas, broken pillow breccias, andesitic and basaltic flows, green, red, purple and black volcanic breccia, with self erosional conglomerate, sandstone and siltstone and minor crystal and lithic tuffs, chert, limestone and lava.

The upper Lower Jurassic Mt. Dilworth Formation consists of a thin sequence varying from black carbonaceous tuffs to siliceous massive tuffs and felsic ash flows. Minor sediments and limestone are present in the sequence. Locally pyritic varieties form strong gossans.




# FIGURE 3 TECTONIC FRAMEWORK

## GEOLOGICAL FEATURES

in a portion of

Northwestern B.C. — Southeastern Alaska

SCALE 0 — 10 — 20 — 25 MILES

**SEDIMENTS - VOLCANICS**

- Stewart Complex - Triassic and Jurassic (undivided)
- Sustut Assemblage - Cretaceous and Tertiary (undivided)
- Paleozoic
- Tertiary and Recent Volcanics
- Bowser Assemblage — Middle Jurassic to Upper Jurassic (undivided)

**INTRUSIVES**

- Coast - undivided
- Omineca - Topley - undivided
- Skeena - undivided
- Dyke swarms - undivided

**MAJOR FEATURES**

- A Wrangell - Revillagigedo Belt
- B Coast Crystalline Belt
- C Bowser Basin
- D Omineca Crystalline Belt
- E Bear River Uplift
- Wrangell - Revillagigedo Metamorphics

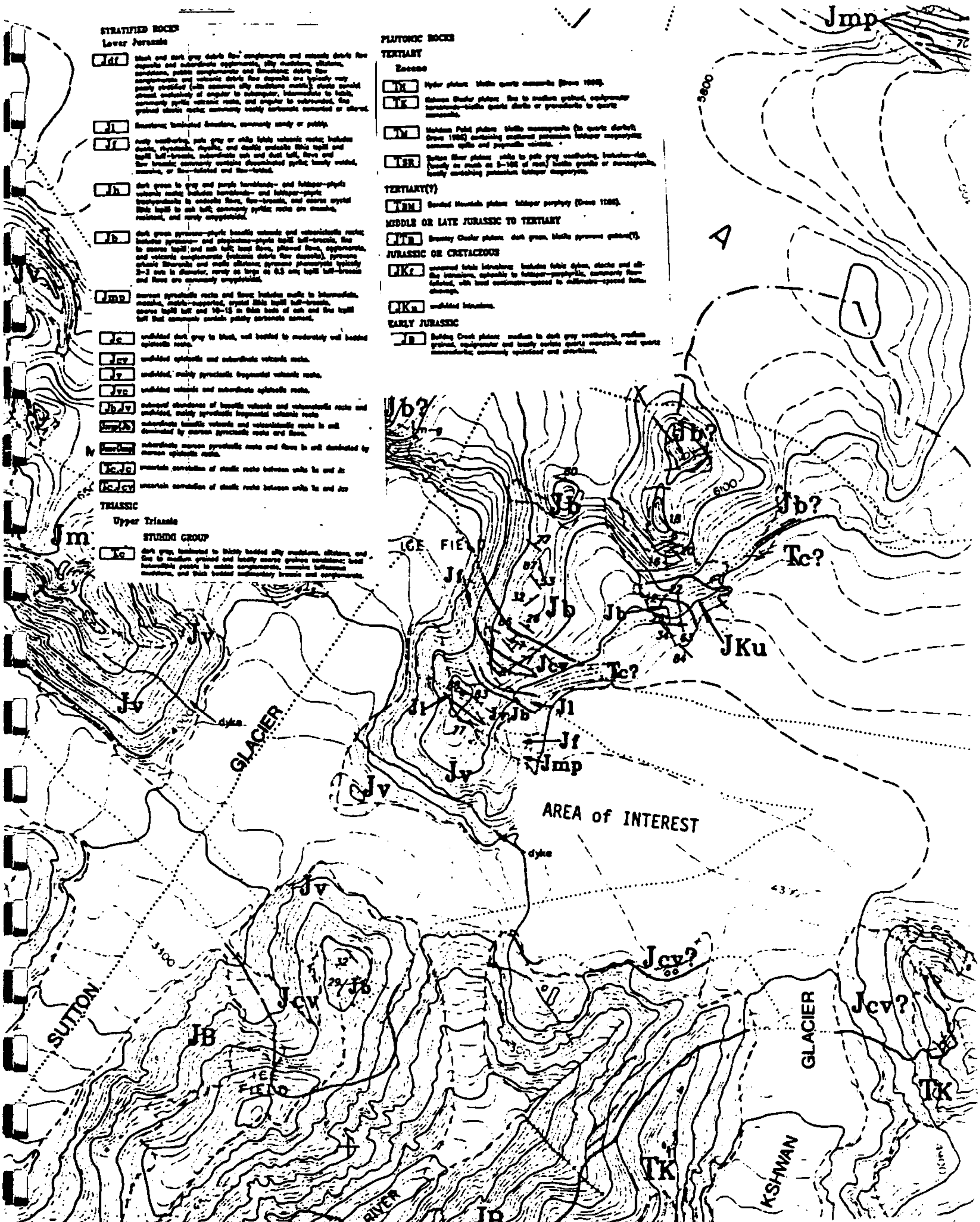



FIGURE 4 GEOLOGY MAP: after G.S.C. Open File 2931

The Middle Jurassic Salmon River Formation is a late to post volcanic episode of banded, predominantly dark colored siltstone, greywacke, sandstone, intercalated clarinet, minor limestone, argillite, conglomerate, littoral deposits, volcanic sediments and minor flows.

Overlying the above sequences are the Upper Jurassic Bowser Lake Group rocks. These rocks mark the western edge of the Bowser Basin and are also located as remnants on mountain tops in the Stewart area. These rocks consist of dark gray to black clastic rocks including silty mudstone and thick beds of massive, dark green to dark gray, fine to medium grained arkosic litharenite.

According to E.W. Grove, the majority of the rocks from the Hazelton Group were derived from the erosion of andesitic volcanoes subsequently deposited as overlapping lenticular beds varying laterally in grain size from breccia to siltstone (Figure 3).

D. Aldrick's work to the north of Stewart has shown several volcanic centers in the surveyed area. Lower Jurassic volcanic centers in the Unuk River Formation are located in the Big Missouri Premier area and in the Brucejack Lake area. Volcanic centers within the Lower Jurassic Betty Creek Formation are in the Mitchell Glacier and Knipple Glacier areas.

There are various intrusives in the area. The granodiorites of the Coast Plutonic Complex largely engulf the Mesozoic volcanic terrain to the west. East of these (in the property area), smaller intrusive plugs range from quartz monzonite to granite to highly felsic. Some are likely related to the late phase offshoots of the Coast plutonism, other are synvolcanic and tertiary. Double plunging, northwesterly - trending synclinal folds of the Salmon River and underlying Betty Creek Formations dominate the structural setting of the area. These folds are locally disrupted by small east-overthrusts on strikes parallel to the major fold axis, cross-axis steep wrench faults which locally turn beds, selective tectonization of tuff units and major northwest faults which turn beds. Figure 4 shows the regional geology of the Stewart area (Greig 1994 ).

**Local Geology(Nunatak)**

The geology of the nunatak was mapped by Rob McLeod, Keith Patterson and Andrew Kaip; geologists for Homestake (figure 5). This section is excerpted from a report by Kaip:

*"The geology underlying the Clone nunatak forms a homoclinal sequence of volcanic and sedimentary strata which strikes southeast, is subvertical and youngs to the southwest. From northeast to southwest the succession includes: a dominantly sedimentary sequence with lesser intercalated andesitic volcanics cut by a large diorite to gabbroic intrusion; a heterolitic sequence including a basal maroon volcanic breccia overlain by basaltic to andesitic breccias and siltstones and intruded by a series of hbl-bi porphyry sill like bodies; and, a dominantly volcanic package comprising mafic flows, sills and breccias. The strata are assigned to the Lower to Middle Jurassic Hazelton Group (Greig, 1995), and likely form part of the Pliensbachian Betty Creek Formation based on regional correlations's. The basal sedimentary sequence may be part of the underlying Stuhini Group.*

*A pyroxene and hornblende bearing porphyry is probably the deepest stratigraphic unit, partially covered by ice at the north end of the property. This unit may be an intrusive source for the thick pile of overlying mafic volcanic rocks. A package of siltstones, sandstones and rare conglomerates and limestones intercalated with andesitic ash, crystal and lapilli tuffs, underlies the zone geology. Volcanic conglomerates and debris flows, both homolithic and heterolithic, occur as extensive continual units within the sequence. The green and maroon heterolithic volcanic breccia that bounds the lower portion of the zone sequence is almost two kilometers in strike, but pinches out to the northeast; this unit is thickest where it dives under the Cambria Icefield on the western side of the nunatak. The stratigraphic rocks exhibit varying degrees of pervasive carbonate, sericite and K-spar alteration; argillites near the summit of the Clone nunatak often have up to 15% disseminated pyrite, otherwise sulphide mineralization is sparse. Continuous sill like bodies of a fine grained dark green mafics intrude the sediments and volcanics. These rocks exhibit strong chlorite alteration and weak pervasive magnetism. Cumulate subhedral plagioclase phenocrysts are locally observed.*

*Near the northwest margin of the nunatak, two irregular bodies of fine to medium grained monzonite to quartz monzonite occur. This unit is locally siliceous, and weakly carbonate altered; sericite or potassium feldspar alteration is not observed, and only local weak chlorite fracture filling. The Sutton West intrusive is lithologically similar, and occurs directly across the Sutton Icefield.*

*A right lateral fault, dipping north at 45 degrees bounds the mineralized zone volcanics from the overlying mafic volcanics. Since this structure parallels stratigraphy, and no cross-cutting structures observed, offset is unknown. An augite megacrystic package of massive amygdaloidal flows and volcanic conglomerates is footwall to the fault. Irregular subhedral feldspar phenocrysts are commonly observed. Irregular vesicles are filled with quartz, calcite and sericite; pervasive chlorite and patchy epidote increases in intensity towards the base. Strong pervasive magnetism occurs throughout. Discontinuous irregular medium grained diorite dykes commonly crosscut this unit. This unit appears fresh, but the fine grained porphyritic nature implies Jurassic origin.*

*The uppermost unit is a thick sequence of basalts and or andesitic basalts. Pillows and massive flows are intercalated with rare, thin tuffaceous sections, and narrow pyroxene porphyritic feeder dykes. Alteration consists of dominantly strong pervasive and fracture filling chlorite; moderate pervasive magnetism occurs throughout.*

*There are at least three episodes of Tertiary intrusion on the Clone property. The most significant is a coarse grained hornblende and biotite porphyritic granodiorite. This porphyry intrudes along most of the contact between the augite megacrystic volcanics and the overlying basalts and thickens dramatically at the Southwestern end of the property. A fine grained felsic dyke, possibly part of the Portland Canal Dyke Swarm cross cuts the nunatak, and continues* *trending northwest on the western side of the Sutton Glacier. Irregular north-to-south trending fine grained magnetic mafic dykes span the property, cross-cutting most units."*

**Zone Geology**

The zone geology was completed by Rob McLeod, Andrew Kaip, Ian Harrison and Keith Patterson; geologists for Homestake (figure 6-7). This section is excerpted from a report by Kaip as follows:

*"Detailed 1:500 scale mapping was completed along the strike of the H- and S- structures. From southwest to northeast the geology comprises black siltstone, andesitic to basaltic tuffs, hornblende-biotite porphyry and megabreccia. Facing indicators in the sedimentary strata, including graded and cross bedding suggest tops are to the southwest. Strata adjacent to the H- and S- structures is subvertical, strike northwest and is parallel to the foliation.*

*Stratified Rocks*

*The megabreccia forms a continuous unit which forms the stratigraphic lower most part of the zone geology. The unit consists of heterolithic and monolithic breccias with individual fragments measuring from pebble to boulder sized. Monolithic breccias are composed of hornblende and plagioclase porphyritic fragments within a matrix of similar composition. Heterolithic breccias also have abundant hornblende-plagioclase porphyritic fragments in addition to abundant exotics including malachite stained hematite fragments, granitoid, felsic volcanic and quartz clasts. The top of the sequence comprises well bedded ash and crystal-rich tuffs. The unit has a mottled red and green appearance with the red colored portions of the unit caused by abundant finely disseminated hematite with fragments typically exhibiting reaction rims. The transition between red and green colored portions of the unit are diffuse, typically occurring over several meters. The contact between overlying hbl-bi porphyry to the southwest and the megabreccia is typically sharp and irregular, and offset by minor faults with left lateral, reverse motion with less than 1 meter displacement.*

*Andesitic to Basaltic Tuffs*

*Overlying the megabreccia is a heterolithic volcanic sequence consisting of coarse grained pyroxene porphyritic breccias which grade vertically, and laterally into ash tuffs, plagioclase crystal-rich tuffs and green to maroon plagioclase porphyritic lapilli tuffs. In general, the pyroxene porphyritic breccias outcrop in the southern half of the map area and thins to the northwest where maroon to green plagioclase porphyritic lapilli tuffs are volumetrically dominant. Within the south half of the map area, several massive gabbro bodies were identified within the pyroxene porphyry breccias and are interpreted as sills within the volcanic sequence. Ash and plagioclase-rich tuffs are typically massive and are most abundant at the top of the tuffs sequence in contact with overlying siltstones of the upper sedimentary sequence.*

Upper Sedimentary Sequence

*To the southwest of the volcanic sequence is a northwest thinning sequence of strongly foliated, dominantly massive black siltstones, lessor cherty siltstones, and gritty limestone. At the base of the sedimentary sequence, the black siltstones interfinger with the underlying plagioclase-rich ash tuffs. Siltstones at the base of the sequence typically contain iron carbonate altered volcanic fragments derived from the underlying volcanics. In drill core the contact between the tuffs and siltstones is strongly foliated with the sediments exhibiting a maroon color likely from the addition of biotite, whereas the tuffs are pervasively sericite altered. Often the contact is diffuse with irregular pods of sericite altered volcanics within the sedimentary package, and the interleaving of this unit may impart be structural.*

*Limestone within the upper sedimentary sequence forms thin, discontinuous beds which are recrystallized and commonly re-mobilized along faults. Within the sedimentary strata, several discrete zones of coarse calcite are present. These zones exhibit irregular contacts and are interpreted to be secondary in origin.*

***Intrusive Rocks***

Hornblende-Biotite Porphyry

*The main portion of the hbl-bi porphyry forms a northwest elongate body which thins to the northwest and separates the megabreccia from the overlying tuff sequence. Cross cutting relationships between the megabreccia and the identification of dykes of the hbl-bi porphyry within the overlying andesitic to basaltic tuffs indicate that the hbl-bi porphyry forms a sill intrusive into the volcanic sequence. In outcrop, the hbl-bi porphyry is typically massive, fine grained and weathers white and contains up to 20 percent euhedral hornblende (< 4mm) and locally up to 10 percent euhedral biotite (< 3mm) within a groundmass of fine grained plagioclase. Between the trace of the H-1 zone and the megabreccia, and south of L21+00 N, the hbl-bi porphyry is commonly brecciated and contains fracture controlled and disseminated hematite which impart a red to pink color to the porphyry with the intensity of hematite greatest adjacent to the H-1 zone. Brecciation within the porphyry commonly form discrete zones of milled fragments and crackle breccias within a matrix of hematite and are interpreted to be primary textures. Volumetrically the most abundant style of brecciation within the hbl-bi porphyry are pseudobreccias formed from fracture controlled hematite alteration.*

Pyroxene Diorite

*In the center of the map area there is an irregular shaped intrusive unit which cuts both the andesitic to basaltic tuff unit and upper sedimentary unit. The intrusion is fine grained, massive and contains (> 2mm) euhedral pyroxene crystals within a groundmass of plagioclase. With the exception of the mafic phase, the pyroxene porphyry is texturally similar to the hbl-bi porphyry".*

Narrow diabase dykes, generally less than 1m occur along fracture zones at right angles to the prevailing geology. The dykes which weather a distinct brown, consist of feldspar phenocrysts in a fine grained groundmass. These dykes are post-mineralization and tend to pinch and swell along strike.

**Sutton Zone Geology**

The Sutton gold bearing zone is located within shear zones and along the contact of a hornblende diorite and andesite pyroclastics. The geological sequence is the same as that observed along the west side of the Clone 1 claim. The area is underlain by intermingled feldspar porphyritic andesite bordered to the north by a unit consisting of a reworked andesite tuff, siltstone and argillite which in turn passes into andesite lapilli tuff. All these rocks have been intruded by hornblende porphyritic diorite. A narrow zone of pyroxene porphyry is located between the andesite and hornblende porphyry. Figure eight shows the geology of the Sutton Zone as mapped by Rob McLeod.

Alteration in all rock types except those comprising the sedimentary package ranges from moderate to very strong with calcitization being the dominant type with lesser sericitization and chloritization. Mineralization is represented by pyrite with subordinate amounts of arsenopyrite and chalcopyrite which comprise two types of mineralized zones.

The first type of mineralized zone consists of sulfide rich lenses averaging 10 - 20% sulfides. These are located along narrow shear zones (small listric extension faults) as well as pods up to one M across. The second type contains less sulfides (3-7%) compared to the first type, but are usually larger, reaching widths up to 5m. The majority of these zones are hosted fracture controlled zones related to shearing at or near the intrusive contact.

Spatial relationship between the sulfide zones and hornblende porphyry strongly point to the latter as a source of mineralization.

**Alteration**

This section is excerpted from Kaip's report as follows:
Alteration is restricted to the area adjacent to the H- and S- structures and grades rapidly into weak propyllitic alteration comprising chlorite, sericite, calcite and minor epidote. Four main types of alteration have been identified within the main zone. These include, structurally controlled zones of fracture controlled and pervasive hematite and chlorite, pervasive potassium feldspar and sericite alteration. Overprinting all types of alteration are stockwork calcite veins and veinlets, calcite hematite chlorite veins.

Potassic alteration: restricted to the hb-bi porphyry and comprises the pervasive replacement of this unit by adularia, variable sericite and lessor quartz. In addition, potassic alteration contains 1 to 5 percent finely disseminated pyrite. Potassic alteration also forms selvages, 1 to 5 centimeters wide, to hematite and magnetite veinlets. Potassic alteration grades vertically and to the northwest into sericite alteration which is dominant above 23+00N along the trace of the zone.

Sericite alteration: developed at higher elevations, north of Line 23+00N, and forms structurally controlled zones of alteration in the Contact zone and along the fault which bounds the zone geology with basaltic breccias to the southwest, informally termed the Gulley faults (Figure 6a and b). Sericite alteration north of Line 23+00N comprises the pervasive replacement of host lithologies by fine grained muscovite, quartz, pyrite and minor calcite. The intensity of sericite alteration varies from moderate to strong with the strongest sericite alteration developed within zones of increased foliation. Sericite alteration in the Gully fault and Contact zone comprises strongly foliated and crenulated zones of intense pervasive sericite.

Hematite alteration: comprises both fracture controlled and pervasive hematite, chlorite, and minor sericite which overprints earlier formed potassic zones. Hematite alteration is most intense adjacent to H zones and comprises pervasive and fracture controlled hematite alteration. Immediately adjacent to the H-1 zone, hematite alteration is structurally modified, forming zones of "hematite streaming" (Plate 6a) where hematite veins are transposed into S1. Peripheral to the H zones, fracture controlled hematite alteration is variably developed cutting earlier potassic alteration (Plate 6b). Overall, the intensity of hematite alteration decreases away from the stratigraphic lower boundary of the porphyry where it is in contact with the mega breccia. The asymmetry of this style of alteration suggests that the hematite may in part be derived from the mega breccia.

At higher elevations, hematite alteration consists of hematite and calcite within strongly sericite altered shears. It contrasts the hematite alteration at lower elevations by the absence of chlorite in the assemblage.

Chlorite alteration: comprises pervasive and fracture controlled chlorite alteration which forms adjacent to S zones. To the northeast of the S-2A zone, chlorite alteration grades laterally into hematite alteration; to the southwest chlorite alteration grades laterally into propyllitic altered tuffs. Similar to hematite alteration, fracture controlled chlorite alteration adjacent to S zones is structurally modified forming zones of "chlorite streaming".

**Structure**

Based on his work and the Harrison structural study, Kaip describes this section as follows:

*"Strata on the Clone nunatak strikes southeast, dips subvertically and is sub parallel to the foliation. Along the eastern edge of the nunatak, the sedimentary sequence is folded about east*

*southeast plunging, isoclinal synclines. Axial planar foliations related to these folds strike west northwest and dip moderately to the northeast. Nunatak scale faults strike northwest to west northwest, and dip moderate to sub vertical to the northeast. Graded and cross bedding in the sedimentary strata consistently indicate that the sequence youngs to the southwest. Detailed studies of the structural setting of the H- and S-zones are presented in Appendix A.* (Appendix VII of this report)

*"In the vicinity of the H- and S- zones, foliations strike 132 degrees and dip sub vertical. Locally, a wedge cleavage is developed in the sedimentary strata to the west of the zone and in the vicinity of camp. Contact between the different units are sub parallel to the foliation and are commonly faulted. Coincident with the dominant foliation are a series of northwest and southeast striking, moderately dipping faults. These faults exhibit well developed mineral lineations, which trend to the northeast and southwest and indicate reverse movement. Tension gashes, which strike southeast and dip moderately southwest support an overall compressive regime.*

*Cross-cutting the foliation are a series of northeast striking faults which displace both the H- and S- zone with reverse (left lateral) motion. Mineral lineations along these fault planes trend 060 degrees to 080 degrees and indicate reverse motion. Displacement across these faults is minor (less than ten metres).*

*Based on detailed studies of the structure in the vicinity of the H- and S- zones, mineralization is interpreted to be structurally controlled (Appendix A). Mineralization is interpreted to have formed along planes of weakness during initial deformation, which later formed the shear zones. These planes of weakness are parallel to bedding and contact in the original package of rocks. The H-1 zone for example, roughly follows the tuff-porphyry contact. The fault planes appear to have formed as a response to the stress that created the shear zones. Mineral elongation directions on these faults indicate a principle compression direction perpendicular to foliation. Reverse movement indicators on the lineations are consistent with compression.*

*Because the lineations are aligned at 90 degrees to the shears, there would have been little or no strikeslip movement (as the rocks are seen now) along the shears. However, it is possible there was up-down displacement, as the lineations give no indication of the plunge of the principle compression direction. Indeed the structures within the shears indicate that they were formed by considerable movement along the shears, which would require the principle compression direction to be at an angle from the normal. However, as previously stated, these structures are not indicative of movement in any one direction as one would expect in the case of lateral shearing Whether it is possible for the cataclastic and mylonitic structures to have been formed by pure flattening with little lateral displacement along the shears is unknown.*

*It could be argued that the fracture set containing the elongation lineations was active at a different time than the shear zones and therefore, are not indicative of the stresses that formed the shears. However, most of the lineations appear to have formed during crystal growth, which* *only would have occurred at significant temperatures, as would have the ductile deformation within the shear zones. More conclusive evidence that the lineations formed at the same time as the shears is the occurrence of relatively undeformed clasts within the shears with lineated surfaces. These clasts are wrapped by the strongly deformed fabric within the shears. The lineations are similarly oriented to lineations outside the shear zones.*

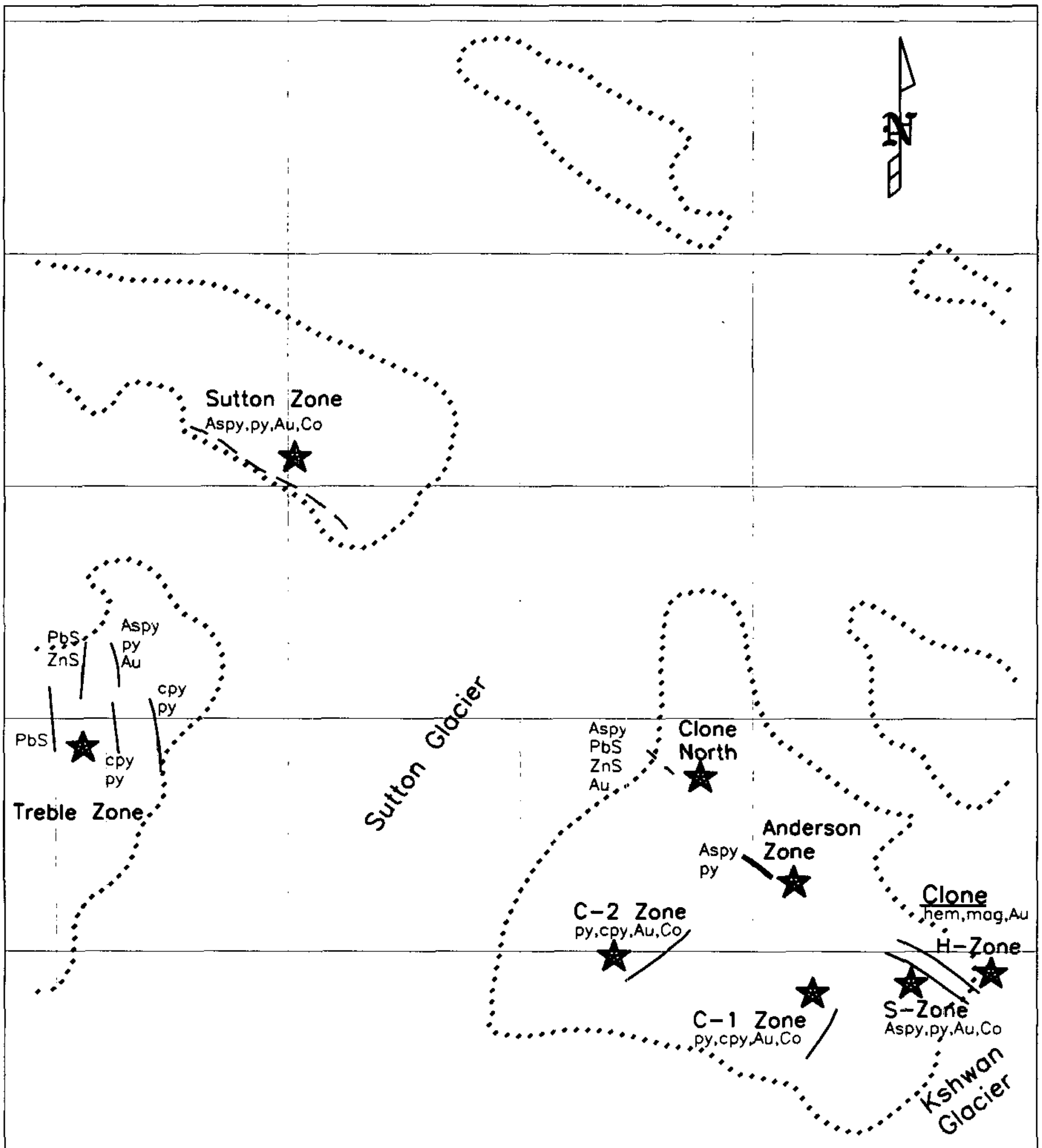
*The joints which cut foliation at 90 degrees are interpreted to post date the previous lineated fracture set. They do not seem to have any immediate link with the deformation that formed the shears. The dykes which are aligned parallel to these joints are undeformed except for small offsets on foliation parallel faults. These faults represent the last deformation event, and as mentioned above, could be related to the large fault which bounds the property west.*

*The geometry of the shear zones themselves is difficult to predict from the structural data shown here. The shears are pod like, and pinch and swell as a response to unknown factors. Faults undoubtedly cut the mineralized structures at depth as well as those which have been mapped on surface.*

*Between lines 23+00N and 27+00N several large scale faults, with apparent lift lateral (reverse motion) transpose the Zone geology up to 100 metres to grid west. In addition, this region is characterized by an increase in the penetrative foliation. Extensive trenching in this area failed to intersect significant mineralization. Based on detailed surface mapping, it appears that both the H-1 and S-2A zones terminate. Where S-2A zone mineralization is exposed, it typically forms narrow (less than 1 cm) sulphide stringers bounded by narrow chlorite selvages which are discontinuous over tens of metres. This region is interpreted as a compressional zone along the structure which hosts the H- and S- zones. If mineralization and the structures which define this compressive zone are cotemoral, it is likely that mineralization may terminate since mineralization typically forms in zones of dilation. This interpretation is supported by a lack of significant mineralization on surface".*

## Mineralization

Based on work to date, two main types of gold bearing structures have been identified on the Clone project. The two styles of mineralization include zones of iron oxides - gold - minor copper and iron sulfides (which include hematite, magnetite, specularite, native gold, minor chalcopyrite and pyrite, rare bornite, minor malachite on surface and fractures and traces tennantite) as well as sulfide - gold mineralization. The latter style includes pyrite, arsenopyrite, minor magnetite, and chalcopyrite, as well as a local massive hematite. Erytherite (pink cobalt bloom) has been noted in a number of trenches along the S-zones. The oxide bearing mineralization on the Clone 1 claim are labeled H-zones while the sulfide rich zones are labeled S-zones Strong chlorite alteration is associated with both mineralization types while K-spar alteration appears to be only associated with the H-type.. Detailed drilling as well as trenching has indicated that although there is two contrasting styles of mineralization the two different




SCALE 1:25,000

500 0 500 1000 1500

METERS

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types commonly occur together, particularly in zones between the above. The S-style of mineralization is predominately along the western - north western edge of a zone up to 75m wide while the H-style is primarily along the eastern-south eastern edge. It appears that the S-type of mineralization is later and has overprinted some portions of the H-type of mineralization. This is particularly true for DDH-96-25,30, and 95, where coarse arsenopyrite and pyrite are evident along the H-1 zone.

Based on the gold-arsenic-cobalt geochemistry of the S-type of mineralization, anomalous values have been obtained along strike with the above style for a distance of at least 5.5km. The H style of mineralization has been traced for a strike length of at least 500m. Detailed descriptions of the various zones are discussed in the following sections. Figure 9 shows the location of the various structures.

**Hematite Bearing Gold Zones, (H-1-3 Zones).**

The H-1 zone is by far the most continuous and widest of the three H structures identified to date. This zone forms a northwest striking zone exposed for 350metres from line 19+00 to 22+50N. Discrete zones of pervasive hematite located north of 22 + 50N likely correlate with the northern projection of the H-1 zone and extend the strike length of the zone 150 metres to the northwest for a total length of 500 metres. The H-1 zone is widest at its center, (up to 10m) gradually decreasing in thickness along strike, both to the north and south. The zone is cut by several north west striking reverse faults which show displacement of the zone to the west along lengths up to 15m. This is particularly evident in the area of trench 11 and trench20.

The H-1 zone is a complex structure including a wide zone of intense chlorite / hematite alteration containing sections of intense K-spar alteration, semi-massive to massive hematite and magnetite veins, lenses and stringers, local silicification as well as later quartz-calcite specularite veinlets. The alteration zone is very distinct on weathered surfaces as a mottled dark green red structure with banded pink to black veins. The mottled appearance is due to veinlets "wispy" stringers, micro veinlets, and interstitial blebs of hematite in intense chlorite alteration. The banded nature of the veins is due to alternating K-spar sections that weather pink and massive hematite that weathers black.

The veins along the H-1 structure are comprised of semi-massive to massive hematite and magnetite with lesser concentrations of pyrite, chalcopyrite, rare bornite and traces of tennantite, as well as local traces of visible gold. The banded textures within the H-1 zone are characteristic of an open space filling vein style of mineralization. Specularite-quartz-calcite veins with open space crystal growth, cut and strike parallel to the H zone, generally in a flay lying nature. Locally these late veinlets contain coarse native gold. The chalcopyrite which generally occurs in areas of massive hematite veins has abundant associated malachite along fractures on surface. About the H-1 structure, there is an asymmetry to the style of alteration with hematite move abundant east of and chlorite more abundant grid west of the trace of the zone. Locally, strongly pyrite chloritic-sericitic andesite is present on the west wall of the H-1 zone. The H-1 zone, with the exception of the massive hematite veins, is very calcareous.

Mapping of the H-1 zone on surface by Homestake geologist indicated the following distribution of the H-1 zone:

"In drill core and on surface, the H-1 zone is widest along the contact between the hb-bi porphyry and the volcanic tuffs grid west of the zone. Where the zone is hosted within volcanic tuffs between 20+50 and 21+50N it forms a series of narrow, discrete zones of H-1 style mineralization. The difference in the style of mineralization along the H-1 structure is attributed to competency differences in host lithology. The contact between the tuffs and porphyry likely represents a zone of competency difference where irregularities in the contact likely formed zones of dilation and subsequent mineralization. In contrast, narrow, discrete zones of H-1 mineralization hosted by the tuff units likely correspond to a more ductile style of deformation within a less competent unit which did not accommodate the development of large zones of dilation. Alternatively, the H-1 zone may have formed independent of lithology and exhibit a finite strike length which has been defined on surface."

On the ridge at the western edge of the Clone 1 claim, the hematite zones are predominantly calcite rich and do not exhibit the silicification noted in the central part of the zone. This may be due to the fact that the northern portions are much higher stratigraphically. In addition the zone is also hosted in sheared, chloritic rocks rather than the more massive, intensely chlorite altered rocks noted at lower elevations.

A paragenetic sequence for the various H zone mineralization likely involves initial hematization along with intense quartz and K-spar alteration followed by brecciation and hematite/magnetite infill. It is possible that these zones may have formed within dilational structures since semi-massive hematite zones display dendritic hematite crystal growth. Magnetite is followed by coarse pyrite and then very fine grained pyrite mineralization. Coarse pyrite forms isolated crystals, generally in wall areas, whereas very fine grained pyrite forms semi-massive concentrations in amporphorus silica. Minor chalcopyrite forms late overgrowths on magnetite, pyrite and in cross-cutting amorphous silica veins. Specularite-quartz-calcite veins cut massive hematite zones.

Two phases of gold mineralization are observed; early finely disseminated gold within semi-massive hematite magnetite and silicified zones, followed by coarse native gold mineralization within specularite-quartz-calcite veins. Specularite veins may represent gold mineralization within late extensional veins or the final stages of gold mineralization formed in tension gashes occurring in a flat lying nature.

Peripheral to semi-massive hematite-magnetite zones, small veins and veinlets of hematite, magnetite and minor pyrite with broad quartz with K-spar altered envelopes are observed well outward into zones of fracture controlled hematite and chlorite alteration. Amorphous silica veins containing bladed pyrite, after marcasite are also found peripheral to semi-massive zones. Rare erytherite was noted in the H-1 zone in the area of trench 11 (saw cut 19). It is unusual as there was no associated arsenopyrite with the above erytherite.

The H-2 zone has been outlined along a strike length of approximately 50m, just a short distance east of the H-1 zone. Narrow massive hematite stringers form 1cm - 0.5m are present in trenches 16, 55-56 and 85. Except for the top part of DDH - 96-38-39, the H-2 zone remains untested by drilling. The mineralization is similar to the H-1 zone in that it occurs within intense hematite / chlorite alteration. A strong quartz-calcite stockwork forms up to 15% of the rock on either side of the massive hematite. The zone has not been fully traced as the hematite stringer zone continues to the north for another 5m before being offset by a north easterly trending break.

The H-3 zone is situated at the southeast edge of the area of interest, right at the nunatak-ice break. This zone forms a broad structure of fracture controlled hematite and chlorite alteration cutting pervasive sericite-chlorite-hematite alteration. The zone measures up to 5m wide and is exposed for a strike length of 50 meters on surface. The zone is open to the southwest and terminates up against a cross structure in the vicinity of grid 19+25N. The veins in the zone are composed of semi-massive to massive hematite and magnetite in a quartz matrix, cut by late specularite chlorite, calcite quartz veins. Envelopes to these veins are characterized by an increase in the intensity of fracture controlled hematite and micro veinlets of magnetite adjacent to the veins. Correlation between drill sections suggest that the H-3 zone forms a series of discrete pods of semi-massive hematite and magnetite mineralization bounded by a sub-vertical zone of strong fracture controlled hematite and chlorite which strikes northwest, similar to the H-1 zone. Interpretation of drill sections indicate that intense fracture controlled hematite and chlorite, which envelope the H-3 veins widen at depth.

Surface trenching has indicated the presence of fine visible gold and chalcopyrite in the vein, particularly trench 100.

It should be noted that along the southeast edge of the nunatak the chlorite / hematite alteration zone has the widest expression. It is at least 75m wide at this location with the start of another H-zone at the western edge of this alteration zone. Trenches 105-107 and 110 indicate the presence of semi-massive hematite, silicified zones and minor chalcopyrite in this area. This may point to the existence of another potential gold bearing zone.

2. <u>Sulfide Bearing Gold Zones (S-Zones)</u>

The S zone, situated along the southwest edge of the hornblende porphyry near the contact with the Camp argillite, consists of a series of en echelon sulfide lenses and veins. The zone consists of narrow veinlets (<0.25m) and massive veins (up to 5m) of semi-massive pyrite, arsenopyrite and minor chalcopyrite, magnetite and hematite occurring along a strike length of 150m. The zones are bound by strong chlorite alteration envelopes that extend up to 1m on either side of the sulfide. Individual veins and lenses are generally from 15-20m long and occur intermittently along the S zone. Locally the S zones carry abundant erytherite, particularly in the area of trench 82 and 207. Diamond drilling has confirmed the lenticular nature of the S zone. However, further drilling should be directed at extending some of the zones detected by the 1996 work, particularly the intersection in DDH-96-18.

3. Mixed Zone (S-2A and S-2B zones)

The S-2 A zone has initially been identified as a mixed zone of hematite and sulfide paralleling the H-1 zone, north of the above S zone. However this initial interpretation may have over simplified the S-2A zone. It is now interpreted as strictly a sulfide bearing zone. The S-2A zone which appears to start in the vicinity of trench 18, adjacent to a hematite bearing zone (S-2B) in this area, extends far at least 500m to the north. The zone is distinctive in surface appearance due to the presence of clasts in a matrix of black chlorite and fine grained pyrite. Locally, intense "chlorite streaming" surrounds clasts as well as forming discrete zones up to several metres wide. In these localities the chlorite forms a schistose rock with fine grained pyrite 1-2%. Locally blocks of black/mudstone have been faulted into the S-2A structure. Mineralization in the zone consists of semi-massive to wispy dissemination's, patches and veinlets of pyrite, arsenopyrite and minor chalcopyrite within a gangue of chlorite, calcite and lesser quartz. The S-2A zone appears to be hosted by brecciated rock hosting intense, pervasive chlorite alteration corresponding to zones of increased deformation. Pervasive and "chlorite streaming" grade laterally away from the zone into a brecciated, fracture controlled zone of chlorite alteration. Similar to the H-1 zone, the S-2A structure appears to be best developed along the contact of the hornblende porphyry with andesitic to basaltic tuffs. Gold mineralization in the zone occurs late in the paragenetic sequence as native gold within fractures in arsenopyrite grains (Huggins - petrographic study).

In the central portions of the exposed S-2A zone, the zone ranges from 2-3 metres in width but thins to 1m above grid 23+00N and at its southern terminus where arsenopyrite - pyrite rich mineralization form discrete discontinuous zones (>5cm wide) bounded by pervasive chlorite alteration(up to 1 metre wide). In addition, drilling indicates that the zone pinches and swells both vertically and laterally. On surface, the zone varies from less than 0.1 to greater that 1opt Au across widths from1-4m.

The S-2B zone which appears to have features of both the S-2A and H-1 zones is located between the latter zones. The southern portion of the identified S-2A (hematite/chlorite rich) is in all likelihood a faulted off part of the S-2B zone. If this is the case, the S-2B zone would be traceable on surface along a strike length of 150m. The zone contains veinlets, veins and lenses of massive to semi-massive hematite / magnetite with minor chalcopyrite, It appears that overprinting of sulfide mineralization during formation of the later S-zones resulted in the presence minor arsenopyrite/pyrite along the wall zones in the S-2B zone. In the vicinity of trench 10, fine grained visible gold was noted in massive hematite. Based on the present interpretation, the S-2B is considered another H zone.

4. Camp Zone

The camp zone is located at the contact between the Camp argillite to the west and tuffs and andesites to the east along the western portion of the mineralized area.

The zone consist of pervasive sericite-minor chlorite alteration developed within a brittle ductile shear zone containing fragments of wall rock along the contact. This zone was noted over short distances in trench 24 as well as just west of trenches 200 - 203. In drill holes, the zone was traced for 100 metres between 2200N and 2300N. Mineralization is comprised of fine grained disseminated pyrite and minor arsenopyrite, chalcopyrite and sphalerite . Locally, coarse grained pyrite mineralization has been developed. Coarse grained pyrite exhibits milled and brecciated textures, likely formed from movement along the shear.

5. Stringer Zone

The stringer zone is located along strike with the S-2B zone and just northwest of the latter. It may well represent a northerly extension of the S-2B zone. Between trenches 123 and 164, the zone consists of narrow, lenticular stringers that can be trace for about 200m. On surface, the zones contain semi-massive hematite veinlets along narrow zones of chlorite alteration. Within the zones or in close proximity, narrow pyrite/arsenopyrite veinlets occur locally. The best result was obtained from trench 204 (1m of 0.339opt) across one of these stringer zones. It has also been traced to depth by DDH96-56-66.

6. Anderson Zone

The Anderson zone occurs along the ridge top above the main H-1 and S gold bearing structures. It occurs approximately 500m north of the present exploration. The zone consists of pyritic rich zones up to 3m wide exposed over a length of 100m. It is situated in an area of strong faulting; both in a northwest and westerly direction. As a result, small faults bound blocks and control the aerial extent of the zone. Mineralization in the structure consist of pyrite, and local arsenopyrite and local chalcopyrite in highly sericite and chlorite altered rocks. This mineralization has been faulted into juxtaposition to hematite/chlorite alteration along the ridge top. Extension to the south is controlled by faulting, steep bluffs prevented exploration to the north.

7. Sutton Zone

The Sutton zone is located approximately 5.5km north of the main zone of interest (H and S zones). It is exposed along a steep rock face over a distance of 1 kilometer. The zone occurs along the contact zone of a hornblende chlorite with volcaniclastics. (Similar to that for the main zone.) The mineralization consists of pyrite with subordinate amounts of chalcopyrite and arsenopyrite and associated enhanced cobalt values. Several different portions of the zone were tested by trenching. The first zone consisted of narrow shear zones and sulfide pods with 10-20% sulfide. The second zone consisted of sulfide lenses up to 5m wide but with short lesser sulfides general 3-7%. The spatial relationship between sulfide zones and diorite strongly point to the latter as the source of mineralization.

8. Clone North

The clone north consists of a zone of intense sericite alteration up to 30 metres wide containing strong pyrite mineralization as well as a quartz stockwork. Within the quartz, galena, chalcopyrite, pyrite and locally arsenopyrite stringers have been noted. Sulfides locally reach 10-30% over 1m widths. It appears that variety of sulfide content and alteration, particularly sericite alteration increase downhill and to the NW. This alteration may correspond to that found in the deeper portions of DDH-96-30.

9. C-1 and C-2 Zones

The C-1 and C-2 zones consist of sulfide lenses and veins along northeast trending fault zones located west of the Clone 1 claim area. Pyrite stringers with local chalcopyrite occur as pods and lenses within fault gouge. Strong chlorite alteration is associated with the above zones. The zones reach widths up to 2-3m locally. The C-1 zone has been explored by trenching in 1995. Very little work other than prospecting has been conducted on the C-2 zone. Grab sampling in 1996 has indicated gold values up to 0.45opt associated with high copper values. Further work is required to more fully evaluate the C-2 showing.

Based on work to date, there are many similarities of the hematite mineralization to the Olympic Dam deposit in Australia.

The Olympic Dam deposit is a polymetallic Fe, Cu, P, Au, U and RE deposit hosted in magnetite and/or hematite bearing discordant pod-like zones, veins, tabular bodies and stockworks. This deposit which has an estimated 2000 MT grading 1.6% Cu, 0.06% U308, 6 g/t Au occurs in veins and tabular zones extending horizontally and vertically for kilometers with widths ranging from metres to hundreds of metres. The deposit is spatially related to coincident gravity and magnetic anomalies and the breccias cross-cut or are conformable with, a wide variety of sedimentary and volcanic rocks as well as intrusive stocks. The most unusual features of the Olympic Dam deposit are:

1. Association of high concentrations of iron with copper and gold as well as high concentrations of other metals, i.e. U, F and RE.

2. The occurrence of all ore metals and reduced sulfur in rocks with high hematite content.

3. The occurrence of strata-bound mineralization in sedimentary rocks deposited in a very high energy environment.

The clone project has numerous mineral assemblages and associations that are analogous to the Olympic Dam environment. Although no strata-bound mineralization has been found to date on the Clone project, the occurrence of rare but large, weakly banded, massive hematite boulders in the debris flow (Betty Creek Formation deposited in a high energy environment) indicates the potential presence of this type of mineralization. In addition, highly sheared and chloritized fragments in the debris flow also carry from 1-3% Cu with associated high silver values.

The Clone has the following similarities to the Olympic Dam:

1. The association of massive hematite/magnetite plus or minus specularite veinlets with intense chlorite alteration. These iron rich veins carry varying amounts of copper and gold with elevated silver values.

2. The pervasive chlorite and K-feldspar alteration throughout the mineralized area.

3. Intense local sericite-pyrite alteration and widespread hematite alteration with increasing hematite towards the veins. Close to the veins, all rocks are highly chloritized with veinlets of hematite forming stockworks which cut all rock units.

4. Strong structural mineralization control with emplacement along faults or rock contacts. Locally the rocks are brecciated with fragments surrounded by black chlorite filling the voids between the clasts.

5. The geochemical signature with anomalously high Cu, Au, As and Co associated with Fe bearing zones over strike lengths up to 5.5km.

6. A strong linear magnetic anomaly traced for a least 0.5km along strike of the massive hematite/magnetite veins and stockwork zone.

7. Copper bearing sulfide (chalcopyrite, rare bornite and tennantite) in association with the massive Fe bearing zones.

8. Lead and zinc values are generally very low throughout the mineralized zones. This is a rarity for the Stewart area.

9. The presence of enhanced W, Mo. And Bi values in the areas surrounding the Clone mineralized zones.

## TRENCHING

### Clone Showings

Trenching was conducted on all zones of sulfide and or hematite rich zones encountered in mapping, geochemical sampling and prospecting. In addition trenches were completed across wide zones of sericite - pyrite alteration and along shear zones where clasts are matrix supported by black chlorite and fine grained pyrite. Most trench locations were outlined by E. Kruchkowski. A total of 1312.85m of trenching was completed in 141 trenches; 121.4m in 8 trenches on the Sutton zone and 1191.45m in 133 trenches in the main Clone Zone. These were excavated using a rock drill, explosives and hand tools, Figure 10-15 show the locations for the trenches, relative to grid lines on the Clone 1 claim. Figure 16 shows the locations for the trenches on the Sutton Zone within the Port 20 claim.

Results of the trenching indicate significant gold values over widths and lengths for the trenching on the Clone 1 claim. The significant results for each trench (>0.03 opt Au) are tabulated below and any values greater than 0.1 opt are in bold as follows:

**Table: Compiled Clone 1 Claim Area Trench Results**

| Trench No. | Zone Type | Width (m) | Gold (opt) | Cobalt (%) |
|---|---|---|---|---|
| 82 | H-type | 10 | 0.064 | 0.041 |
| 83 | H-type | 0.8 | 0.081 | 0.031 |
| 84 | H-type | 2.4 | 0.043 | |
| 85 | H-type | 0.6 | 0.037 | |
| 86 | S-type | 0.7 | **0.494** | 0.42 |
| 91 | H-type | 1.3 | 0.037 | 0.026 |
| | H-type | 0.75 | **0.966** | |
| 92 | H-type | 2.9 | **0.100** | |
| 93 | S-type | 3.0 | **0.501** | 0.034 |
| 94 | S-type | 1.4 | **0.141** | |
| 95 | S-type | 2.2 | **2.617** | 0.768 |
| 97 | S-type | 1.8 | **0.167** | 0.019 |
| 98 | S-type | 1.5 | 0.036 | |
| | S-type | 1.0 | 0.078 | 0.05 |
| 99 | S-type | 5.7 | **0.703** | 0.073 |
| 100 | H-type | 1.0 | **2.328** | |
| 101 | H-type | 1.2 | 0.045 | |
| 103 | H-type | 1.9 | 0.075 | 0.147 |
| 105 | H-type | 1.5 | 0.03 | |
| 105 | H-type | 1.5 | **0.102** | |

| | | | | |
|---|---|---|---|---|
| 110 | H-type | 3.0 | 0.05 | |
| 113 | H-type | 2.6 | 0.061 | |
| 114 | H-type | 1.4 | 0.046 | |
| | H-type | 2.7 | **0.115** | |
| 117 | H-type | 6.0 | **0.121** | |
| | H-type | 1.5 | **0.106** | |
| 123 | S-type (Anderson) | 1.5 | **0.156** | |
| 124 | S-type | 1 | 0.038 | |
| 126 | S-type (Anderson) | 2.8 | **0.585** | |
| 138 | S-type | 3 | 0.02 | 0.041 |
| 147 | S-type | 3 | 0.089 | |
| 148 | S-type | 3 | 0.074 | |
| | S-type | 1.8 | 0.034 | .120 |
| 150 | S-type | 1 | 0.041 | |
| 151 | S-type | 3 | 0.081 | 0.057 |
| 152 | S-type | 3.4 | **0.257** | 0.136 |
| 156 | S-type | 1 | 0.061 | |
| 158 | S-type | 1 | 0.068 | |
| 161 | S-type | 1 | 0.054 | 0.026 |
| 162 | S-type | 1 | | 0.043 |
| 163 | S-type | 1 | | 0.057 |
| 170 | S-type | 1 | 0.038 | |
| 172 | S-type | 1 | | 0.020 |
| 188 | S-type | 1 | 0.061 | 0.057 |
| 193 | S-type | 1 | **0.266** | 0.458 |
| 195 | S-type | 6 | **0.581** | 0.068 |
| 200 | S-type | 1.3 | **0.477** | 0.057 |
| 201 | S-type | 2 | **0.287** | 0.031 |
| 202 | S-type | 2 | **0.105** | 0.048 |
| | S-type | 1 | 0.049 | |
| 203 | S-type | 4.15 | **0.21** | 0.016 |
| 204 | S-type | 1 | **0.339** | |
| 205 | S-type | 1.4 | **.135** | 0.099 |
| | | 3.8 | **0.22** | 0.17 |
| | | 1 | 0.051 | |
| | | 5 | 0.069 | 0.27 |
| 206 | S-type | 3.1 | 0.072 | |
| 207 | | 8 | **.319** | .27 |
| 208 | S-type | 1.5 | | 0.066 |
| 209 | S-type | 1.5 | | 0.039 |
| 210 | S-type | 1 | **.255** | .027 |
| 211 | S-type | 1.5 | 0.062 | |
| 213 | S-type | 1.5 | **0.593** | |

| | | | | |
|---|---|---|---|---|
| 214 | S-type | 2.5 | **0.18** | |
| 215 | S-type | 2.5 | **0.21** | 0.03 |
| 216 | S-type | 1 | 0.034 | 0.088 |

Trench 82 tested an area southeast of Trench 81 with abundant erytherite in dark chloritic volcanic rock. Both Trench 82 and 83 indicate the presence of appreciable cobalt in the area of 1995 Trench 81.

Trench 85 tested the southeast extension of the H-2 zone outlined in the 1995 trenching program.

Trenching along strike south of Trench 1 indicates the extension of high gold-cobalt values outlined in the 1995 work.

Trenches 100-101m, 114, and 117 tested a new zone called H-3. This work indicated high values up to 2.328 opt gold occurs 1 meter. Trenches 105-113 tested a wide area of strongly magnetic, chlorite altered rocks southwest of Trench 81. Generally low gold-cobalt values were obtained from sampling in this area which contained abundant malachite over a fairly widespread area.

Trenches 121-149 and 154-160 were excavated along the ridge top at the western edge of the Clone 1 claim to test a series of hematite zones, sulfide-pyrite-arsenopyrite-minor chalcopyrite, bearing veins and sericite/pyrite alteration zones. The Anderson zone is a pyrite bearing zone up to 3m wide exposed for at least 100m of length. Trenches 123,126 and 148 have tested the Anderson zone.

Trenches 161-166, 204 and 211 have tested the stringer zone located north of DDH-31-33. The best result was in trench 204 which contained 1m of 0.339 opt gold.

Trenches 200-203, 213-216 tested the S-2A zone in the area of trenches 27-29, 31 and 34. The best result was from trench 202 which had 4.15m of 0.21 opt Au and 0.016% Co.

Trenches 193 and 195 indicated an extension of the S-2A zone approximately 100m north of the 1995 trenching. These trenches indicated 1m of 0.226 opt Au and 0.458% Co as well as 6m of 0.581 opt Au and 0.068% Co respectively.

## Sutton Zone

The Sutton zone had significant gold values associated with high arsenic and some cobalt values. It appears that this is an extension of the gold-cobalt system on the Clone 1 claim. The following tables show the compiled results for this trenching.

**Table 2: Compiled Trench Results - Sutton Zone**

| Trench No. | Width (m) | Gold (opt) | Cobalt (%) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| S-3 | 1.5 | 0.03opt | |
| | 2.5 | 0.174opt | |
| S-3a (trench along above zone of 0.174opt) | 6 | 0.282opt | |
| S-4 | 4 | 0.101opt | 0.11 |
| S-6A | 2.7 | 0.111opt | |
| S-7 | 1.0 | 0.041opt | |
| | 1.0 | 0.036 | |
| S-8 | 6 | 0.101 | |

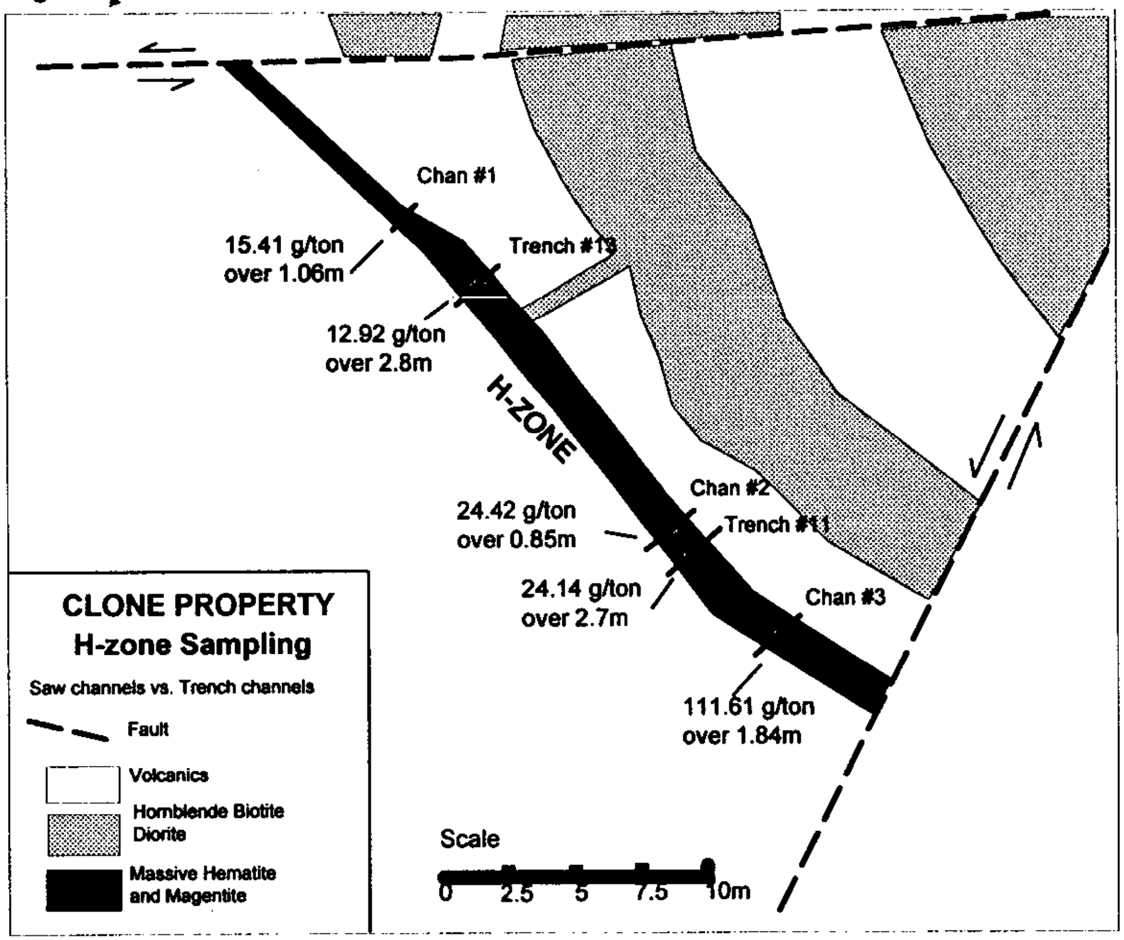
Much of the trenching has been at an oblique angle along the zones particularly trench S-3a. More trenching is required to more adequately evaluate the Sutton Zone.

## SAW-CUT SAMPLING

During the course of the exploration program, saw-cut sampling was conducted in the immediate area of camp, in the vicinity of trench 10-13, 23 and between trenches 21 and 25. Figure 17 show the location of the saw-cut areas. A gas powered saw with a diamond blade was utilized to complete cuts up to 6 cm deep and 6 cm wide. The sampling was conducted to confirm 1995 trench results (chip sampling) as well as check sulfide - hematite rich zones that could not be blasted due to the proximity of camp. In total 25.78m of saw-cut was completed in 22 separate cuts by Teuton personnel and 3.75m of saw-cut was completed in 3 separate cuts by Homestake personnel. The latter three cuts were located in the vicinity of trenches 11 and 13 to provide a comparison to the 1995 chip sampling. Trench 11 and 13 yielded 2.7m of 0.71opt Au and 2.8m of 0.38opt respectively. The saw-cuts sampling yielded 15.41 gpt Au over 1.06m in Channel 1 (vs 12.92 gpt Au in Trench 13), 24.42gpt Au over 0.85m in channel 2 (vs 21.14 gpt Au over 2.7m in Trench 11), and 111.61 gpt over 1.84m in Channel 3 below and south of Trench 11. These results confirm the validity of 1995 chip sampling in the two trenches. Figure 18 shows the values and locations of the Homestake sampling.

The sampling by Teuton was completed in six different areas. The first area tested contained narrow, discontinuous veins (Stringer zone) with semi-massive hematite and occasional arsenopyrite veinlets. A total of five cuts were completed over a series of parallel stringers. The best result obtained yielded 0.116 opt Au across 1.1m in SC-N0. 4. The second area tested was on the S-2A zone just downhill from trench 23 which yielded 2.5m of 0.809 opt Au. A total of six short cuts were placed over the S-2A zone in the vicinity of the collar of DDH-96-123-126. Significant gold values were obtained in five of the six cuts. Averaging the values obtained in the five cuts yielded 3.4m of 0.151 opt Au. This value is not entirely accurate as some sampling

Figure 18


Chan #1
15.41 g/ton
over 1.06m
Trench #13
12.92 g/ton
over 2.8m
H-ZONE
Chan #2
24.42 g/ton
over 0.85m
Trench #11
24.14 g/ton
over 2.7m
Chan #3
111.61 g/ton
over 1.84m
CLONE PROPERTY
H-zone Sampling
Saw channels vs. Trench channels
Fault
Volcanics
Hornblende Biotite
Diorite
Massive Hematite
and Magentite
Scale
0
2.5
5
7.5
10m

overlap occurs between separate saw-cuts. It is felt that the average would be higher if only one continuous sample had been obtained.

Three separate saw-cuts were completed in the east wall area of trenches 11 and 13. These cuts were located in order to test semi-massive hematite stringers in the wall area of the H-1 zone. Sampling indicated gold values up to 0.096 opt Au over widths of 0.375m as well as 0.065 - 0.085 opt Au across widths of approximately 0.5m. This sampling indicated significant gold values in narrow stringers paralleling the main zone.

Saw-cut area 4 tested the north extension of the H-1 zone in the area of trench 13, just before the zone is obscured by a low angle reverse fault that offsets it to the north west. In saw-cut 18, massive hematite contains minor erytherite, the only location where the cobalt bloom is seen in the absence of arsenopyrite. This work returned lower values for the H-1 zone than that obtained in trench 13. Saw-cut 18 yielded 2m of 0.13 opt Au while saw-cut 19 returned 1m of 0.097opt Au.

Saw-cut area 5 tested stringers mineralized with hematite between the S-2B and H-1 zone in the vicinity of trench 10 and 13. The work indicated that some of the stringers between the main veins carry gold value. The best result was in SC-16 which yielded 0.099opt Au across 0.36m. In addition sampling was conducted just south of trench 10 to confirm the high results obtained in the 1995 trenching. Saw-cut 20 confirmed the 1995 results, yielding a value of 5.202 opt across 0.9 metres.

Saw-cut area 6 tested the wall to the H-1 zone north of trench 20 between it and trench 21. Low gold values were obtained for sampling in the wall area of the H-1 zone.

All sample results are tabulated on the appropriate tables for each saw-cut in figures 19-21.

## GEOCHEMISTRY

### Introduction

Reconnaissance rock geochemical were taken from zones of interest, including gossaned areas, mineralized shear zones and any unusual rock types exposed on the Port 18-21, 23, Red 12, 17, Norge 7 and Clone 1-2 claims. Sample location index maps are shown in figure 22-25 in relation to the claim lines, prepared at a scale of 1:5000. Icefield boundaries have been taken from government topographic maps, however these are often inaccurate: pronounced ablation in Stewart during the past years have exposed much new rock outcrop and reduced the size of snow and icefields considerably.

Altogether 392 rock samples were taken: 46 chip, 326 grab and 20 float samples. Location for the samples were fixed in the field by reference to a base map prepared from a topographic map.

## Field Procedure and Laboratory Technique

Rock samples were taken in the field with a prospector's pick and collected in standard plastic sample bag. Grab samples were taken to ascertain character of mineralization at any specific locality. These samples consisted generally of three to ten representative pieces with total sample weight ranging between 0.5 to 2.0 kgs. Chip samples were taken across the strike of mineralized structures and generally weighed about 1.0 to 2.0 kgs. Interval samples from chip lines were carefully taken to ensure a balanced weighting of sub-samples along the interval length. Complete descriptions of the rock samples, in terms of type, noted mineralization and relationship to nearby features are located in Appendix I. In addition, any determined anomalous values are noted ( in bold ) along with the descriptions.

All rock samples were analyzed at the Eco-Tech facilities in Kamloops, British Columbia and Pioneer Labs in Vancouver, British Columbia. Rock samples were first crushed to minus 10 mesh using jaw and cone crushers. Then 250 grams of the minus 10 mesh material was pulverized to minus 140 mesh using a ring pulverizer. For the gold analysis a 10.0 gram portion of the minus 140 mesh material was used. After concentrating the gold through standard fire assay methods, the resulting bead was then dissolved in aqua regia for 2 hrs at 95 degrees Celsius. The resulting solution was then analyzed by atomic absorption. The analytical results were then compared to prepared standards for the determination of the absolute amounts. For the determination of the remaining trace and major elements Inductively Coupled Argon Plasma (ICP) was used. In this procedure a 1.00 gram portion of the minus 140 mesh material is digested with aqua regia for 2 hours at 95 degrees Celsius and made up to a volume of 20 mls prior to the actual analysis in the plasma. Again the absolute amounts were determined by comparing the analytical results to those of prepared standards.

Specific samples were subjected to further analysis where the Au, Ag, Cu, As and Co values obtained exceeded certain threshold levels (Greater than 1000 ppb for Au and greater than 30 ppm for Ag and greater than 10,000 ppm for the next 2 metals and greater than 100 ppm for cobalt). Wet chemistry methods and AA were used for follow-up analysis of base metals and silver (where values were too high for quantitative measurement by ICP). Appendix II gives the results of all analyses.

## Statistical Treatment

A cumulative frequency plot to determine background and threshold values (greater than threshold is considered anomalous) was not conducted for the results. Gold values greater than 100 ppb gold, silver values greater than 3.2 ppm, arsenic values greater than 110 ppm, copper values greater than 360 ppm and cobalt values greater than 100 ppm, were considered anomalous based on previous surveys. Figures 22-25 show the location plots for all sampling conducted with the values for Au, Ag, As, Cu and Co listed in a table for the appropriate samples in any of the individual diagrams.

**Anomalous Zones**

The geochemical program was successful in outlining three main areas of gold mineralization in the surveyed portions of the property. The first area outlined included the Sutton gold zone and surrounding rocks on the Port 19 and 20 claim. The zone includes stringers, veins and stockworks of sulfide (pyrite-lesser chalcopyrite/arsenopyrite) along shears within hornblende porphyry and along the contact of the above intrusive with andesitic rocks. Based on the 1996 sampling, the Sutton zone has been traced for a minimum of 1 kilometer along the southern edge of an exposed rock face. Values in the main area of interest included gold values up to 0.769 opt, silver values up to 1.23 opt, copper values up to 1.14 %, arsenic up to 6.65 % and cobalt up to 0.199 % The zone shows gold associated with overall enhanced arsenic and copper values but generally local enhanced cobalt. If possible, all occurrences of the vein should be mapped and sampled in order to determine distribution and control. Just NE of the zone, on the same nunatak, an area of sampling indicates possible extensions of the above mineralization or possible parallel structures. Values approximately 1 kilometer NE of the Sutton zone indicate gold values up to 0.18 opt across a 0.2m chip, silver values up to 1.65 opt, copper values up to 3.09 %, arsenic up to 9.12 % and cobalt up to 0.039 %. It is recommended that trenching across long intervals be excavated in the area of samples A96-55-56,D96-35-37 and MM96-54

The second area with outlined significant metal values was located along the C-1 structure. In this area, high gold values are associated with enhanced silver, copper. arsenic and cobalt values. The mineralization consists of quartz stringers and sulfide lenses (pyrite/chalcopyrite) along a NE trending shear zone. At the NE edge of the exposed zone, gold values up to 0.319 opt Au are associated with very weakly enhanced silver, no arsenic, high copper up to 1.66 % and little cobalt. At the south western edge, narrow quartz and pyrite/chalcopyrite veins carry up to 1.885 opt Au with weakly anomalous silver. In the middle of the C-1 zone, chip sampling across 1.2m (A96-206) indicated 0.153 opt Au, 1.95 % Cu and 0.16 % Co with moderately anomalous silver. Descriptions of the zone in this area indicate that the structure is at least 0.7 to 1.2 m wide in this locality. Unfortunately most of the zone was covered by snow and an adequate evaluation was not possible. Further trenching and sampling is required for this area.

The third area of anomalous values included the area on the western slopes of the Clone nunatak. Extensions of the Clone mineralization appear to strike into this area. Sampling indicated up to 0.398 opt Au, 3.53 % Cu with generally low silver, arsenic and cobalt values. Extensive trenching is recommended for this area, particularly on any zones of sulfide and/or chlorite.

## GEOPHYSICAL SURVEYS

### Downhole IP Survey

Downhole induced polarization surveys (DHIP surveys) were performed at the Clone Project, during the period, September 21-30, 1996 by Scott Geophysics Ltd.. Five drill holes were surveyed using an axial gradient for the directional downhole induced polarization survey. Initially drill hole 96-18 and 96-95 were selected for survey. However due to downhole caving, it was not possible to get the probe into these holes. As a result drill holes 96-19 and 96-925 were used as replacement holes. As well, due to caving the complete lengths of drill hole 30 and 43 were not surveyed. The following table summarizes the location of the surface electrodes and depth of survey for each borehole.

**Table 3 Downhole IP Surveyed Holes and Depths Tested**

| DDH | True Azimuth | Grid Azimuth | Inclination | Depth Surveyed |
|---|---|---|---|---|
| C1-96-19 | 220 | 265 | -65 | 15-165m |
| C1-96-25 | 65 | 110 | -80 | 15-165m |
| C1-96-29 | 245 | 290 | -75 | 15-165m |
| C1-96-30 | 65 | 110 | -70 | 15-270m |
| C1-96-43 | 245 | 290 | -75 | 15-215m |

The DIHP survey was a preliminary evaluation which was successful in identifying IP anomalies that appear to be coincident with mineralization. The responses are summarized in a table as follows:

**Table 4 DHIP Responses**

| | Depth | Response |
|---|---|---|
| DDH-96-19 | Top of Hole | Strong, high IP-target near surface and to the west |
| | 100m | Broad, moderate IP, target at depth and to the west |
| | 140m | Broad, weak IP, target to the south and east. |
| DDH-25 | 55m | Broad, weak IP, target to the south and east |

| | | |
|---|---|---|
| | 90m | Weak IP response, target to the south |
| | 130m | Broad, moderate IP target lies at same depth to north and east |
| DDH-29 | 85m | Broad, moderate IP No preferred orientation established |
| DDH-30 | 90m | Moderate IP High target lies SE at same elevation |
| | 150m | Narrow, strong IP High target to the SE |
| | 210m | Strong IP Target lies to east of hole at same elevation |
| DDH-96-43 | Top of Hole | Strong IP, Target is near surface source extending west of the hole |
| | 110m | Broad, moderate IP target to north and west |
| | 130m | Broad weak IP target to south and east |
| | 195m | Broad weak IP no preferred direction |

The strong IP response at the top of DDH-19 may likely correspond with the H zone intersected at 11-15m in that hole. The broad moderate high obtained at 100m shows the target at depth and to the west. This target may correspond with the wide zone of sulfides intersected at 100 - 130m in DDH 18, just above DDH-19. This would imply a north westerly plunge to the mineralized zones. The broad weak IP response at 140m indicating a target to the south and east may correspond to the semi-massive sulfide zone intersected at depth in DDH-43 (194.5 - 208m).

In DDH-25 a weak IP response at 55m with a preferential direction to the south probably corresponds to the S-2A zone which was intersected at 53-55m. The weak IP response at 90m with a preferential direction to the south corresponds with the H-1 zone which was intersected at 90.41 - 91.66m. The broad -moderate IP response obtained at 130m with a target to the north and east probably reflects the presence of the H-2 zone at depth.

In DDH-29, a broad moderate IP zone with no preferred orientation at 85m probably corresponds to the H-1 zone present at 76-78m in the drill hole. The weak IP response at 140m indicates that a target lies at that depth to the NW of CL-96-29. This response may correspond with the trace of the S-2A zone (CL-96-29 terminated NE of the S-2A zone).

DDH-96-30 showed a number or responses with a moderate one at 90m indicating a target lying to the SE at the same elevation. This response may indicate the presence of S-type mineralization in this area as the depth corresponds with the trace of the S-zone encountered in the hole. AT 150m, a narrow strong IP response may indicate an extension to the SE of semi-massive mineralization related to the S-zone. A strong IP response at 210m corresponds with the H-1 zone at 213-221m. The IP survey shows a potential extension to the east for the H-1 zone mineralization.

In DDH-96-43 a strong IP response at the top of the hole probably corresponds with the H-1 zone encountered at 20-40m. The broad moderate IP target at 110m corresponds to a zone with 15% fine grained pyrite at 110-114m in the drill hole. Extension of this mineralization appears to be to the north and west. A broad, weak response at 130m likely related to S-type mineralization. The response at 195m is related to a zone of semi-massive pyrite/arsenopyrite at 194.5 - 208m.

It would appear that the IP survey is able to trace the H and S zones. A large surface IP program is recommended to outline potential drill targets and provide greater control in following up on 1996 results. Appendix X gives a full description of the survey.

## Magnetometer Survey

In the period June to early August, 1996, a magnetometer survey was conducted on a grid overlying the Hand S zone mineralization. The purpose of the survey was to determine if the magnetics could be used to extend the known units of the magnetite bearing H zone. The survey tested beneath glacial ice to the south and to the north into an area partly covered by ice as well as being underlain by faulted geology.

The survey was done on a 25m square grid covering an area about 2.5 km long and 750m wide. An area measuring approximately 1km long by 750 was surveyed on Kshwan glacier in order to delineate any possible south extension to the H zone. The instrument used for the survey was an Omni system manufactured by Scintrex capable of reading to an accuracy of one gamma. A base station was established near the camp and was used to provide data for correcting the magnetic data influenced by any diurnal variation. Appendix IX shows the corrected magnetic readings obtained for the survey. Figure 26 shows the contoured magnetic data obtained in the survey.

The magnetometer survey included over 65.3 line kilometers of grid; approximately 30.3 line km on Kshwan glacier and 35 line km on the Clone nunatak. In addition, east of lines 18+25N to 27+00N, at approximately 20+00N to 21+00E, glacial ice obscures the underlying geology and therefore influences the magnetic reading. Readings varied from a low of 49,813 to a high of 51,542nT. A factor of 49,800nT was subtracted from all the reaching and the resultant data was contoured at 100nT. This contoured data shows a linear magnetic high approximately 400m long and 25m wide located between line 17+75N and 21+25N and roughly between 19+50 and 20+00E. This anomaly shows a good correlation with the H-1 zone outlined in this area. Based on the magnetic data, it appears that there is a strong fault affect at a NW-SE direction located 18+75N just below trench 81. It appears that the H-1 zone may have been offset along a distance up to 50m in length. The strongest magnetite content appears to be located at 19+25 to 19+50N at 19+75E. This would correspond to the area trenches 74 and 78 along the H-1 zone. Trench 78 (8m at 0.9opt Au) shows a wide zone of magnetic bearing rocks. However, the area of trench 74 shows little magnetism associated with the H-1 zone. The data may suggest the presence of magnetite at depth.

In the area of line 20+50N, a magnetic anomaly extends from 19+25E to 19+75E. This is in all likelihood a reflection of the metal and equipment present within the camp area in this location.

A long linear anomaly on lines 17+00N to 16+00N extending from 18+00E to 25+00E appears to represent spurious data or reflects a sharp break in shape beneath the ice.

The magnetic data was not successful in following the H-1 zone beneath the ice. This is probably due to the presence of ice thickness in the range of 100-300m; a short distance south of the bedrock exposure at 18+25N.

Along the western edge of the survey, a weak magnetic anomaly at 30+00N and 30+25N at 19+00 to 20+NE corresponds to a hematite altered zone with minor magnetite. This is an area where the hematite zone strikes roughly NE-SW due to intense faulting.

## PETROGRAPHIC STUDIES

A petrographic study was undertaken by Chris Huggins, as part of a under graduate thesis study at the University of British Columbia. A summary of this work is excerpted from Appendix VI as follows:

*"Analysis of polished thin section was instrumental in gaining an understanding of the mineral associations and textures because of the fine grained nature of the sulfides.*

***General Mineral Characteristics:***
*In all samples studied, there are a number of observations that are consistent throughout the sample suite:*

- *microbrecciation / brittle fracturing of pyrite and arsenopyrite*
- *initial arsenopyrite growth, with pyrite overgrowths common*
- *pyrite and arsenopyrite usually occur in bands of dominantly one mineral or the other, and rarely evenly disseminated throughout*
- *mineral zoning seen only in surface samples, not in core*
- *late chalcopyrite fracture filling within py and aspy grains, and along grain boundaries*
- *amoeboid chalcopyrite blebs within magnetite, and occasionally around sulphides*
- *late magnetite fracture filling along grain boundaries*
  *late gold precipitation*
- *gold in arsenopyrite more often than in pyrite; commonly in contact with*
- *chalcopyrite/magnetite*
- *gangue (qtz, chl, cc) often forms radiating growth zones around sulfide grains, and does not show any significant grain rotation*

***PARAGENETIC SEQUENCE:***

| | ***early*** | | ***(brittle def'm)*** | ***late*** |
|---|---|---|---|---|
| *arsenopyrite* | ----= = = = ------ | | | |
| *pyrite* | | -= = = = = ------- | -------= = = = = - | |
| *chalcopyrite* | | | ---------------------- | |
| *magnetite* | | | --------- | ----- |
| *gold* | | | | -------- |

## STRUCTURAL STUDY

A structural study was undertaken on the Clone 1 mineralization (S and H zone) by Ian Harrison ( Appendix VII ). Results of work are included:

*"Planes of weakness would have developed during initial deformation, which later formed the shear zones. These planes of weakness are parallel to bedding and contacts in the original package of rocks. The H1 zone for example roughly follows the tuff-porphyry contact.*

*The lineated fracture planes appear to have formed as a response to the stress that created the shear zones. Mineral elongation directions on these fractures indicate a principle compression direction perpendicular to foliation (see schematic sketch). Reverse movement indicators on the lineations are consistent with compression.*

*Because the lineations are aligned at 90 degrees to the shears, there would have been little or no stripe-slip movement (as the rocks are seen now) along the shears. However it is possible there was up-down displacement, as the lineations give no indication of the plunge of the principle compression direction. Indeed the structures within the shears indicate that they were formed by considerable movement along the shears, which would require the principle compression direction to be at an angle from the normal. However, as previously stated, these structures are not indicative of movement in any one direction as one would expect in the case of lateral shearing. Whether it is possible for the cataclastic and mylonitic structures to have been formed by pure flattening with little lateral displacement along the shears is unknown.*

*It could be argued that the fracture set containing the elongation lineations was active at a different time than the shear zones, and therefore are not indicative of the stresses that formed the shears. However most of the  appear to have formed during crystal growth, which only would have occurred at significant temperatures, as would have the ductile deformation within the shear zones. More conclusive evidence that the lineations formed at the same time as the shears is the occurrence of relatively undeformed clasts within the shears with lineated surfaces. These clasts are wrapped by the strongly deformed fabric within the shears. The lineations are similarly oriented to lineations outside the shear zones.*

*The joints which cut foliation at 90 degrees are interpreted to post date the previous lineated fracture set. They do not seem to have any immediate link with the deformation that formed the shears. The dykes which are aligned parallel to these joints are undeformed except for small offsets on foliation parallel faults. These faults represent the last deformation event, and as mentioned above, could be related to the large fault which bounds the property to the west.*

*The geometry of the shear zones themselves is difficult to predict from the structural data shown here. The shears are pod like, and pinch and swell as a response to unknown factors. Faults undoubtedly cut the mineralized structures at depth as well as those which have been mapped on surface."*

## DIAMOND DRILLING

A total of 11,487.14 m of diamond drilling was completed in 113 holes utilizing a modified J.K. Smit 300 drill provided by J.T. Thomas Drilling. This total included 7652.44 m of BTW size core and 3834.7 m of NQ2 size core. The drilling mainly tested the H-1, S, S-2A and newly discovered H-3 zone. Figure 26 shows the location of all the drill holes relative to the gold bearing mineralized structures. All hole collars were surveyed relative to the grid established on the property. Holes 14-79 were principally logged by R. McLeod while holes 80-126 were logged by E. Kruchkowski. Core recovery was in excess of 95 % and all core is presently stored on the property in the immediate area of the camp site. Three holes were lost due to caving, resulting in drill rod, drill bit and core barrel loss. Table 5 shows the drill hole locations, azimuths, inclinations and zones tested.

**Table 5**
**- Drill Hole Locations, Azimuths, Inclinations, Depths and Zones Tested**

| Drill Hole No. | Location (Grid Location) | True Azimuth | Inclination | Depth (m) | Zones Tested |
|---|---|---|---|---|---|
| 14 | 18+92N, 20+01E | 225 deg. | -45 deg. | 157.08 | H-1, S-Zone |
| 15 | 18+92N, 20+01E | 225 deg. | -55 deg. | 216.55 | H-1, S-Zone |
| 16 | 18+92N, 20+01E | 225 deg. | -65 deg. | 182.39 | H-1, S-Zone |
| 17 | 19+85N, 20+05E | 200 deg. | -45 deg. | 182.88 | H-1, S-2a |
| 18 | 19+85N, 20+05E | 200 deg. | -55 deg. | 196.9 | H-1, S-2a |
| 19 | 19+85N, 20+05E | 200 deg. | -65 deg. | 181.66 | H-1, S-2a |
| 20* | 19+85N, 20+05E | 200 deg. | -75 deg. | 36.88 | H-1 |
| 21 | 20+29N, 19+68E | 45 deg. | -45 deg. | 100.58 | H-1 |
| 22 | 20+29N, 19+68E | 45 deg. | -55 deg. | 106.68 | H-1 |
| 23 | 20+29N, 19+68E | 45 deg. | -65 deg. | 124.97 | H-1 |
| 24 | 20+29N, 19+68E | 45 deg. | -75 deg. | 164.59 | H-1 |
| 25 | 20+29N, 19+68E | 45 deg. | -80 deg. | 177.51 | H-1 |
| 26 | 21+05N, 20+15E | 225 deg. | -45 deg. | 94.55 | H-1, S-2a |
| 27 | 21+05N, 20+15E | 225 deg. | -55 deg. | 116.81 | H-1, S-2a |
| 28 | 21+05N, 20+15E | 225 deg. | -65 deg. | 124.74 | H-1, S-2a |
| 29 | 21+05N, 20+15E | 225 deg. | -75 deg. | 182.88 | H-1, S-2a |
| 30 | 20+23N, 19+07E | 45 deg. | -69 deg. | 362.71 | H-1, S-2a |
| 31 | 22+62N, 19+67E | 225 deg. | -45 deg. | 44.20 | S-2a |
| 32 | 22+62N, 19+67E | 225 deg. | -55 deg. | 33.21 | S-2a |
| 33 | 22+62N, 19+67E | 225 deg. | -65 deg. | 42.36 | S-2a |
| 34 | 22+60N, 19+67E | 195 deg. | -45 deg. | 41.76 | S-2a |
| 35 | 21+62N, 19+68E | 240 deg. | -45 deg. | 42.67 | S-2a |
| 36 | 21+62N, 19+68E | 240 deg. | -55 deg. | 57.30 | S-2a |
| 37 | 21+62N, 19+68E | 240 deg. | -65 deg. | 55.17 | S-2a |
| 38 | 20+02N, 20+59E | 205 deg. | -55 deg. | 243.54 | H-1, H-2, S-2a |
| 39 | 20+02N, 20+59E | 205 deg. | -62 deg. | 260.91 | H-1, H-2, S-2a |
| 40 | 19+39N, 20+08E | 225 deg. | -45 deg. | 153.92 | H-1, S-zone |
| 41 | 19+39N, 20+08E | 225 deg. | -55 deg. | 175.56 | H-1, S-zone |
| 42 | 19+39N, 20+08E | 225 deg. | -65 deg. | 206.18 | H-1, S-zone |
| 43 | 19+39N, 20+08E | 225 deg. | -75 deg. | 223.63 | H-1, S-zone |
| 44 | 19+39N, 20+08E | 225 deg. | -60 deg. | 171.72 | H-1, S-zone |

| | | | | | |
|---|---|---|---|---|---|
| 45 | 20+64N, 20+37E | 225 deg. | -55 deg. | 222.5 | H-1, S-2a |
| 46 | 20+64N, 20+37E | 225 deg. | -62 deg. | 230.73 | H-1, S-2a |
| 47 | 18+25N, 19+97E | 225 deg. | -45 deg. | 196.29 | Magnetic anomaly |
| 48 | 18+25N, 19+97E | 225 deg. | -55 deg. | 245.67 | Magnetic anomaly |
| 49 | 18+21N, 20+23E | 45 deg. | -45 deg. | 77.72 | H-3 |
| 50 | 18+21N, 20+23E | 45 deg. | -55 deg. | 106.69 | H-3 |
| 51 | 18+21N, 20+23E | 45 deg. | -65 deg. | 129.29 | H-3 |
| 52 | 18+57N, 20+37E | 45 deg. | -45 deg. | 53.44 | H-3 |
| 53 | 18+57N, 20+37E | 45 deg. | -55 deg. | 70.71 | H-3 |
| 54 | 18+57N, 20+37E | 45 deg. | -65 deg. | 86.56 | H-3 |
| 55 | 18+57N, 20+37E | 45 deg. | -70 deg. | 116.43 | H-3 |
| 56 | 21+48N, 14+15E | 225 deg. | -50 deg. | 179.83 | H-1, S-2a |
| 57 | 21+48N, 14+15E | 225 deg. | -61 deg. | 206.70 | H-1, S-2a |
| 58* | 21+46N, 19+33E | 40 deg. | -45 deg. | 22.25 | S-2a |
| 59 | 21+46N, 19+33E | 40 deg. | -45 deg. | 91.75 | H-1, S-2a |
| 60 | 21+46N, 19+33E | 40 deg. | -61 deg. | 140.21 | H-1, S-2a |
| 61 | 22+01N, 20+44E | 225 deg. | -45 deg. | 113.39 | H-1, S-2a |
| 62 | 22+01N, 20+44E | 225 deg. | -60 deg. | 118.37 | H-1, S-2a |
| 63 | 22+52N, 20+41E | 225 deg. | -45 deg. | 128.02 | H-1, S-2a |
| 64 | 22+52N, 20+41E | 225 deg. | -60 deg. | 188.98 | H-1, S-2a |
| 65 | 23+03N, 20+39E | 225 deg. | -45 deg. | 128.02 | H-1, S-2a |
| 66 | 23+03N, 20+39E | 225 deg. | -60 deg. | 182.88 | H-1, S-2a |
| 67 | 23+97N, 20+51E | 225 deg. | -45 deg. | 153.62 | H-1, S-2a |
| 68 | 20+83N, 19+84E | 43 deg. | -45 deg. | 15.24 | H-1 |
| 69 | 20+83N, 19+84E | 43 deg. | -50 deg. | 15.24 | H-1 |
| 70 | 20+83N, 19+84E | 43 deg. | -55 deg. | 21.34 | H-1 |
| 71 | 20+83N, 19+84E | 43 deg. | -60 deg. | 25.91 | H-1 |
| 72 | 20+83N, 19+84E | 43 deg. | -70 deg. | 35.05 | H-1 |
| 73 | 20+83N, 19+84E | 43 deg. | -85 deg. | 99.06 | H-1 |
| 74 | 20+92N, 19+82E | 43 deg. | -45 deg. | 16.46 | H-1 |
| 75 | 20+92N, 19+82E | 43 deg. | -55 deg. | 21.64 | H-1 |
| 76 | 20+92N, 19+82E | 43 deg. | -65 deg. | 25.91 | H-1 |
| 77 | 20+92N, 19+82E | 43 deg. | -75 deg. | 33.53 | H-1 |
| 78 | 20+92N, 19+82E | 43 deg. | -85 deg. | 41.15 | H-1 |
| 79 | 20+92N, 19+82E | 43 deg. | -80 deg. | 30.48 | H-1 |
| 80 | 21+05N, 19+77E | 40 deg. | -45 deg. | 21.34 | H-1 |
| 81 | 21+05N, 19+77E | 40 deg. | -55 deg. | 27.43 | H-1 |
| 82 | 21+05N, 19+77E | 40 deg. | -65 deg. | 37.80 | H-1 |
| 83 | 21+05N, 19+77E | 40 deg. | -75 deg. | 51.51 | H-1 |
| 84 | 21+05N, 19+77E | 40 deg. | -85 deg. | 91.14 | H-1 |
| 85 | 21+05N, 19+77E | 40 deg. | -80 deg. | 75.29 | H-1 |

| | | | | | |
|---|---|---|---|---|---|
| 86 | 21+26N, 19+77E | 36 deg. | -45 deg. | 15.24 | H-1 |
| 87 | 21+26N, 19+77E | 36 deg. | -55 deg. | 24.38 | H-1 |
| 88 | 21+26N, 19+77E | 36 deg. | -65 deg. | 33.53 | H-1 |
| 89 | 21+26N, 19+77E | 36 deg. | -75 deg. | 44.20 | H-1 |
| 90 | 21+26N, 19+77E | 36 deg. | -85 deg. | 89.75 | H-1 |
| 91 | 20+47N, 19+89E | 218 deg. | -45 deg. | 18.29 | H-1 |
| 92 | 20+47N, 19+89E | 218 deg. | -55 deg. | 25.91 | H-1 |
| 93 | 20+47N, 19+89E | 218 deg. | -65 deg. | 38.10 | H-1 |
| 94 | 20+47N, 19+89E | 218 deg. | -75 deg. | 65.84 | H-1 |
| 95 | 20+47N, 19+89E | 218 deg. | -85 deg. | 105.46 | H-1 |
| 96 | 19+08N, 19+41E | 225 deg. | -45 deg. | 71.93 | S-zone |
| 97 | 19+08N, 19+41E | 225 deg. | -55 deg. | 76.20 | S-zone |
| 98 | 19+08N, 19+41E | 225 deg. | -65 deg. | 109.42 | S-zone |
| 99 | 19+08N, 19+41E | 225 deg. | -75 deg. | 106.58 | S-zone |
| 100 | 19+08N, 19+41E | 225 deg. | -85 deg. | 154.23 | S-zone |
| 101 | 19+09N, 19+40E | 241 deg. | -45 deg. | 68.28 | S-zone |
| 102 | 19+09N, 19+40E | 241 deg. | -55 deg. | 94.18 | S-zone |
| 103 | 19+09N, 19+40E | 241 deg. | -65 deg. | 107.29 | S-zone |
| 104 | 19+09N, 19+40E | 241 deg. | -75 deg. | 155.14 | S-zone |
| 105 | 18+74N, 19+87E | 195 deg. | -45 deg. | 33.53 | S-zone |
| 106 | 18+74N, 19+87E | 195 deg. | -55 deg. | 60.96 | S-zone |
| 107 | 18+74N, 19+87E | 195 deg. | -65 deg. | 62.18 | S-zone |
| 108 | 18+74N, 19+87E | 170 deg. | -45 deg. | 60.96 | S-zone |
| 109 | 18+74N, 19+87E | 170 deg. | -55 deg. | 60.66 | S-zone |
| 110 | 20+40N, 19+91E | 225 deg. | -45 deg. | 21.35 | H-1 |
| 111 | 20+40N, 19+91E | 225 deg. | -55 deg. | 43.59 | H-1 |
| 112 | 20+40N, 19+91E | 225 deg. | -65 deg. | 46.63 | H-1 |
| 113 | 20+40N, 19+91E | 225 deg. | -75 deg. | 69.49 | H-1 |
| 114 | 20+40N, 19+91E | 225 deg. | -85 deg. | 106.36 | H-1 |
| 115 | 20+32N, 19+87E | 225 deg. | -45 deg. | 23.17 | H-1 |
| 116 | 20+32N, 19+87E | 225 deg. | -55 deg. | 48.84 | H-1 |
| 117 | 20+32N, 19+87E | 225 deg. | -65 deg. | 48.77 | H-1 |
| 118 | 20+32N, 19+87E | 225 deg. | -75 deg. | 67.50 | H-1 |
| 119 | 20+32N, 19+87E | 125 deg. | -80 deg. | 93.57 | H-1 |
| 120* | 20+06N, 19+60E | 45 deg. | -72 deg. | 55.17 | H-1 |
| 121 | 20+06N, 19+60E | 45 deg. | -72 deg. | 124.36 | H-1 |
| 122 | 20+06N, 19+60E | 45 deg. | -76 deg. | 121.92 | H-1 |
| 123 | 20+06N, 19+60E | 45 deg. | -80 deg. | 137.16 | H-1 |
| 124 | 21+06N, 19+56E | 45 deg. | -72 deg. | 123.74 | H-1 |
| 125 | 21+06N, 19+56E | 45 deg. | -76 deg. | 159.71 | H-1 |
| 126 | 21+06N, 19+56E | 45 deg. | -80 deg. | 175.56 | H-1 |

* - abandoned hole

The 1996 drill program was carried out in order to further delineate the structures containing the high grade gold and gold/cobalt mineralization discovered in late 1995. Drilling was basically concentrated in a zone 75m wide by approximately 400m long. In addition to intersecting the various gold bearing structures, namely H-1, H-3, S, S-2a and possibly S-2b the holes encountered five main and two lesser rock types. The first and generally main rock type encountered in the drilling was a hornblende/biotite porphyry. The rock is usually light grey, typically massive, fine grained with up to 20-25% euhedral to subhedral hornblende (< 4mm) and locally contains up to 10 percent euhedral biotite (< 3mm). The unit is locally auto-brecciated with strong "chlorite streaming" in the fractured rock. Calcite veinlets form a weak to strong pervasive irregular stockwork and fracture filling. Near the H-1 zone and the hematite rich megabreccia, the intrusive is a mottled red to green unit with varying amounts of hematite and chlorite. Where hematite is fracture controlled, pseudo-liesegang rings have formed. The H-1 zone appears to occur along or near the megabreccia and hornblende porphyry contact. The hornblende porphyry unit appears to occur as a sill-like intrusion along the contact of the above megabreccia and andesite to basaltic tuffs overlying the breccia.

The second most abundant unit encountered in the drilling was an andesitic to basaltic tuff sequence labeled volcaniclastic in the drill logs. In many of the drill hole intersections, it is difficult to discern the auto-brecciated porphyry from the volcaniclastic. Clasts of the hornblende porphyry commonly occur within the volcanic sequence. In drill core, the rock which is generally light grey has clasts that are matrix supported, ranging in size from 1 to 5 cm. The unit has been variably chlorite and locally sericite altered with generally strong calcite veinlets and fracture fillings near sulfide bearing shears. The unit appears to be overlain by a very thin ash tuff that is extensively sericite altered.

The third main rock type encountered in drilling consisted of the megabreccia. This unit appears as a red to green mottled rock in drill core due the pervasive hematite and chlorite. Fragments are difficult to discern due to the fact that the breccias are composed of hornblende and plagioclase porphyry fragments within a matrix of similar composition. The unit contains angular to rounded fragments that vary from pebble to boulder size.

Drilling encountered irregular dykes and possible sills of a pyroxene porphyry identified as pyroxene diorite in surface mapping. The unit is generally dark grey, homogeneous to massive and contains euhedral (< 2mm) pyroxene crystals within a groundmass of plagioclase. It appears that the unit may be post mineralization as it appears to displace mineralized zones particularly below the area of DDH-95-1-6. The unit has little if any calcite veining or fracture filling.

Along the west side of the drilled area, holes encountered a black argillite/mudstone unit. The rock consists of a thinly banded, foliated unit that contains lenses of sericite altered tuff. The rock contains weak pyrite occurring as fine disseminations or as fine laminations parallel to banding and/or foliation.

The drilling encountered two units that appear to have limited occurrences. The first of these is minor diabase that occurs as dykes that strike at roughly 045° and may be up to 1m wide. In surface exposure, approximately 6-7 of these dykes have been observed over an area 500m long. In drill core, the rock is a homogenous, dark grey, fine grained rock with euhedral to subhedral feldspar phenocrysts in a fine grained groundmass. Feldspar form 50% of the rock which appears devoid of sulfides and any strong fracturing. Very weak, late calcite veinlets form up to 2% of the unit.

The second of these minor units consists of a tuff unit occurring as lenses along the contact between the argillite and volcaniclastic unit. The rock is usually highly sericite altered and highly foliated. Banding in the tuff is generally 1-5mm and the rock appears calcareous.

DDH 14-16, drilled off the same pad and along the same azimuth, were designed to test the downdip extension of trench 81 (9m of 0.340 opt Au and 0.18% Co). The holes failed to extend trench 81 mineralization downdip and just south of its location. The trench 81 mineralization may have been offset by a strong lineament along the face of the trench. Figure 28 shows the geology of DDH-96-14-16.

DDH-96-14 (azimuth 225 deg, dip - 45deg) intersected hornblende and biotite porphyry from surface to 120.25m. A volcaniclastic unit occurs from 136.4-148.85m which in turn is underlain by a tuff unit from 148.85-157.08m. The hole encountered 10% hematite from 1.17-3.40m and local pyrite with 1% arsenopyrite as irregular patches and disseminations. A zone of intense "chlorite streaming" occurs at 3.4-4.6, 36.5-39.30 and 129.10-129.7m. At 11-13.1m, mineralization containing 5% hematite, 1% specularite and trace pyrite and chalcopyrite was intersected. At 28.84-29m, 29.01-36.50m and 48.75-48.85, hematite specularite-chlorite veins occur. At 39.6-40.6m, a zone of semi-massive hematite with lesser specularite, magnetite and chalcopyrite occur. Minor disseminated pyrite from 2-4% and trace arsenopyrite occur from 64.5-120.25m.

DDH-96-15 (azimuth 225 deg, dip-55 deg) intersected hornblende/biotite porphyry from 0-134.65m, then volcaniclastic from 134.65m-168.97m, tuff from 168.97-189.83m and pyroxene porphyry from 189.83 to 216.55m. The hole intersected hematite with minor magnetite from 1.16 to 5.50m. At 8.80-22.50 and 47.7-49.1m, the hole encountered varying amounts of hematite mineralization with local chalcopyrite. Sulfide-hematite veins containing pyrite in amounts up to 2% were intersected at 4.85-4.95, 22.65-23.4 and 40.2-41m. From 73.35-78.50m, an S zone was intersected that contained up to 6% pyrite and 2% arsenopyrite. Pyrite with minor arsenopyrite stringers were encountered at 80.1-81.50, 90.4-90.6 and 98.6-134.65m. From 138-145, the core contains strong, local pyrite in amounts up to 10%. At 203.75 to 204.2, the core contained pyrite and 2% chalcopyrite.

DDH-96-16 (azimuth 225 deg, dip-65 deg) intersected hornblende/biotite porphyry from 0-152.31m, tuff from 152.31 to 157.3m, a fault from 157.3 to 158.1m, then hornblende porphyry from 158.1-182.3m. From 5 to 32.94m, the core contained 2% pyrite as irregular veins up to 10cm wide, but more commonly 5mm wide with hematite approximately every 1-2m. At 33-55.30m, the core had trace pyrite within calcite/hematite veins. From 73-82.9m, 2-3% pyrite occurred as veins up to 1cm wide associated with pervasive and veined magnetite as well as 2-5% hematite. At 108-123m, trace to 3% pyrite occurs with 1% disseminated hematite crystals. From 129.3 to 147.75m, 6% pyrite as wisps and disseminations occurs with trace arsenopyrite.

DDH-17-20 were drilled off the same pad along the same azimuth to test the downdip extension of trench 78 (8m of 0.90 opt Au). All holes intersected the H-1 zone with varying amounts of semi-massive hematite, minor magnetite and specularite. Figure 29 shows the geology of DDH-96-17-20.

DDH-96-17 (azimuth 200 deg, dip-45 deg) encountered hornblende porphyry at 0-17.5, 22-34.3, 64.45-112.98, 115.26-122.86, 127.02-136.37 and 141.87-155.1m. The H-zone was intersected at 17.5-22m while the S-2A zone was intersected at 34.30-45.75m. The core contained pyroxene porphyry at 45.75-64.45, 122.86-127.02 and 136.37-141.87m while mudstone occurred from 112.98-115.26m. The H-1 zone consisted of vein hematite, minor magnetite and specularite while the S-2A zone contained autobrecciated intrusive containing wispy hematite, patchy pyrite and trace pyrite.

DDH-96-18 (azimuth 200 deg, dip-45 deg) intersected the H-1 zone at 14.50-23.75m, massive sulfide at 123.75-128.01m (S-zone) as well as "chlorite streaming" at 68.03-74.2 and 83-84.90m. The core from 0-83, 84.90-123.75 and 128.01-196.90m consisted of hornblende/biotite porphyry. The H-zone contained intense pervasive hematite, locally semi-massive hematite, strong patchy K-spar, local patchy silicification, weak magnetite and local specularite. Local sections with minor chalcopyrite were observed from 23.75 to 44.82m. From 100 to 130m, the hole encountered zones of pyrite/arsenopyrite stringers, "chlorite streaming", minor magnetite as well as a massive pyrite/arsenopyrite/magnetite vein from 123.75 to 128.01m.

DDH-96-19 (azimuth 200 deg, dip-65 deg) intersected the H-1 zone at 11.20-27.8m, hornblende porphyry from 0-11.2, 27.8-144.25 and 151.7-181.66m. From 144.25 to 151.70m, the core contained volcaniclastic. In the 0-11.2m section, the core contained local sections up to 1m thick having 15-20% hematite and trace specularite and chalcopyrite. The H-1 zone contained intense hematite flooding with lesser hematite stockworks and veins, local magnetite and specularite with traces of chalcopyrite and visible gold. From 85-86m the hole hit an S-zone consisting of 50% pyrite and 3% arsenopyrite. A second S-zone was encountered at 136.40-144.25m containing up to 10% arsenopyrite locally, minor chalcopyrite and pyrite up to 25 %. Local sections of 2-5 % pyrite occur in narrow zones from 151.7-181.86m.

DDH-96-20 (azimuth 200 deg, dip-75deg) was abandoned at 36.88m after the rods got stuck and broke off. The hole hit a series of semi-massive hematite zones related to the H-1 zone at 0.44-1.28, 12.80-14.19 and 19.9-33.0m. The hole hit volcaniclastic at 1.28-12.80, 14.19-29.90 and 33-36.88m.

DDH-96-21-25 were drilled off the same pad in the same azimuth to test below the area of trench 14 (7.3m at 1.50 opt Au) as well as testing below DDH-95-12 and 13 which had yielded no significant values in previous drilling. The holes were collared just at the east edge of the S-2a zone. Drilling confirmed the presence of the H-1 zone in all holes and indicated that holes 95-12 and 13 carried low gold values due to intersecting diabase dykes at right angles to the zone which had displaced the zone. Figure 30 shows the geology of DDH-96-21-25.

DDH-96-21 (azimuth 45 deg, dip-45deg) intersected volcaniclastic from 1.64-16.60m, the H-1 zone at 16.60-18.50m, and the hornblende porphyry at 18.5-100.58m. The H-1 zone contained minor semi-massive hematite veins. In the interval between the S-2A and H-1 zone, the hole encountered local patchy pyrite and wispy magnetite as well as wispy hematite stringers.

DDH-96-22 (azimuth 45 deg, dip-55 deg) intersected the H-1 zone at 26.53 to 36.00m, volcaniclastic from 1.4-16.80m and hornblende/biotite porphyry at 36-106.68m. From the S-2A zone to the H-1 zone, the hole indicated the presence of local patchy pyrite. The H-1 zone was generally weak with strong hematite sheeting, patchy silica, K-spar and chlorite alteration.

DDH-96-23 (azimuth 45 deg, dip-65deg) indicated hornblende/biotite porphyry from 0.16-15.35 and 44.71 to 124.97m. A fault was encountered at 27.85-28.50m with volcaniclastics from 15.35-27.85 and 28.5-40m while the H-1 zone was intersected at 40.85-44.71m. The H-1 zone contained a massive hematite vein at 44-44.71m associated with strong magnetite. Strong "chlorite streaming" was encountered at 54.30-54.9, 66.65-69.95 and 109.9-111.2m. It appears the hole hit the H-2 zone at 111.2-121.45m containing semi-massive hematite, strong pervasive magnetite and local specularite veins.

DDH-96-24 (azimuth 45 deg, dip-75 deg) intersected hornblende/biotite porphyry from top to bottom except for the H-1 zone at 70.75-80.50m. This zone contained massive hematite veins up to 20cm as well as lesser micro-fracture controlled chlorite, minor local chalcopyrite and traces of visible gold. Arsenopyrite and pyrite occur along a narrow section from 80.16-80.33m. Local zones of "chlorite streaming" occur at 2.7-4.20, 44.2-49, 55-62, 68.5-72.62, 90.6-92.3 and 104.7-106.5m.

DDH-96-25 (azimuth 45 deg, dip-80 deg) intersected volcaniclastic from 0.72-42.03m, then hornblende/biotite porphyry from 42.03 to 177.39m with several H-zones from 72.34-84 and 90.41-91.66m. From the S-2A zone to the H-1 zone, the hole encountered narrow pyrite/chlorite rich sections. From 72.34-84m, the H-1 zone contained strong to semi-massive hematite mineralization with good chalcopyrite and pyrite locally as well as traces of visible gold. At 90.41 to 91.66m, the hole indicated massive sulfides comprised of intense magnetite up to 75%, coarse grained pyrite and 10% hematite. "Chlorite streaming" was intersected at 111.4-115.75 and 128-130m. Below the H-1 zone, the hole encountered strong sericite alteration with local strong pyrite mineralization and minor chalcopyrite.

DDH-96-26-29 were drilled off the same pad along the same azimuth to test the H-1 zone below trench 13 (2.8m of 0.38 opt Au). All the holes encountered the H-1 zone, some encountered the S-2a zone as well. Figure 30 shows the geology of DDH-96-26-29.

DDH-96-26 (azimuth 225 deg, dip-45 deg) intersected biotite/hornblende porphyry at 0.16-91.14m with the H-1 zone at 38.9-40.38m, the S-2B zone at 56.22-56.70m and mudstone at 91.14-94.48m. The hole failed to intersect the S-2A zone. The H-1 zone consisted of disseminated chalcopyrite associated with pyrite and moderate wispy hematite as well as local intense chlorite. The S-2B zone consisted of semi-massive hematite with approximately 1% chalcopyrite. "Chlorite streaming" was encountered at 1.2-2.4, 28.7-33 and 33.91-35.10m.

DDH-96-27 (azimuth 225 deg, dip-55 deg) intersected biotite/hornblende porphyry at 0.84-50.3m, then the H-1 zone from 50.3-59.20m, hornblende porphyry from 59.20m to 67.36, the S-2B zone from 67.36 to 73.3m, hornblende porphyry from 73.3 to 101.9, then mudstone from 101.9-104, biotite/hornblende porphyry from 104-116 and volcaniclastics from 116-116.74m. The H-1 zone contained narrow massive hematite veins with generally weak to locally intense magnetite, disseminated pyrite and minor chalcopyrite. The S-2B zone consisted of several massive hematite veins up to 1m each with minor specularite and traces of visible gold in one. Between the above 2 zones, narrow massive hematite stringers and veins are present. "Chlorite streaming" occurs at 23.75-26, 36.65-37.5 and 74-78m.

DDH-96-28 (azimuth 225 deg, dip-65 deg) intersected biotite/hornblende porphyry from top to bottom, except for the H-1 zone at 87.94-93.45 and fault gouge at 56.6-56.90m. The H-1 zone consists of semi-massive hematite with minor semi-massive sulfides. "Chlorite streaming" occurs at 6.80-6.95, 64-67 and 101.7-102.1m.

DDH-96-29 (azimuth 225 deg, dip-75 deg) intersected biotite/hornblende porphyry 0-123.25m, a weak H-1 zone at 123.25-151.5m, hornblende porphyry 151.5-160.5m, then tuff from 160.5-182.88m. The H-1 zone contains weak wispy hematite and local fine grained pyrite. "Chlorite streaming" was noted at 6.55-6.75, 15.08-15.47, 61.6-62.06, 73-73.85, 106.3-107.15 and 118.15-123.25m.

DDH-96-30 (azimuth 45 deg, dip 69 deg) was drilled to intersect at depth below the gold bearing section in drill hole 25. This hole which totaled 362.71m is the deepest drilled on the property. Figure 30 shows the geology of DDH-96-30. The hole intersected volcaniclastics from 0.6-42, 47.3-71.35, 108.75-213.00, 221.5-248 and 295-362.71m. Hornblende porphyry was encountered at 42-47, 78.9-83.98, 86.42-108.2, 213-221.5 and 248-295m. Narrow diabase dykes were intersected at 71.35-78.9 and 83.98-86.42m. Narrow gabbro dykes were noted in the volcaniclastics. The hole is interesting in that the little hematite alteration is encountered. It appears that intense sericite-pyrite alteration is present at depth below the H-1 zone in the vicinity of trenches 14-15 and DDH-96-21-25, 115-119. This may indicate an alterations zone peripheral to an intrusive body at depth. From 42-47.30, the hole intersected an S- zone containing semi-massive pyrite-arsenopyrite with sulfides up to 50% locally. A narrow sulfide vein at 109.79-109.93 contains 30% pyrite and 15% arsenopyrite. At 213-221.50m, the hole intersected the H-1 zone consisting of local massive pyrite-arsenopyrite veins and local massive hematite. Minor magnetite and chalcopyrite are associated with this zone. Narrow pyrite veinlets generally form 2-5% of intensely sericite altered rock below the H-1 zone. "Chlorite streaming" was noted at 13.8-16.4 and 219.25-221.2m.

DDH-96-31-33 and 34 were drilled off the same pad but at different azimuths to test for extensions of the S-2A zone in trenches 27-29 (2m of 0.49 opt Au, 2m of 1.15 opt Au and 2.65 m of 0.96 opt Au respectively). The holes failed to produce the kind of type gold values in the S-2A zone that the trenching had encountered. Figure 32 shows the geology of DDH-96-31-33.

DDH-96-31 (azimuth 225 deg, dip-45 deg) intersected biotite/hornblende porphyry from 0-26.75m, then mudstone from 26.75-44.2m. The S-2a zone consists of weak pyrite and arsenopyrite mineralization generally less than 4%.

DDH-96-32 (azimuth 225 deg, dip-65 deg) intersected biotite/hornblende porphyry from 0.76-29.90m as well as mudstone at 29.9-33.22m. The S-2A zone was intersected at 28.1-28.33m and contained 10% pyrite in intense "chloride streaming". Other "chlorite streaming" encountered was at 5.4-6.5 and 17.0-18.1m.

DDH-96-33 (azimuth 225 deg, dip-65 deg) intersected biotite/hornblende porphyry at 0.97-36.5m with mudstone from 36.5-42.37m. The S-2A zone consisted of a narrow section of "chlorite streaming" with approximately 6% fine grained pyrite.

DDH-96-34 (azimuth 195 deg, dip-45 deg) intersected biotite/hornblende porphyry from 0.24-29m, then mudstone at 29-41.76m. Figure 33 shows the geology of DDH-96-34. The S-2A zone is hard to detect but appears to occur at 24-25m. Minor "chlorite streaming" occurs at 4.05-4.10m associated with weak wispy hematite.

DDH-96-35-37 were drilled off the same pad and along the same azimuth to test below the S-2A zone in the area of trenches 25-26 (3.0m of 1.03 opt Au and 1.75m of 0.45 opt Au respectively). Figure 34 shows the geology of DDH-96-35-37.

DDH-96-35 (azimuth 240 deg, dip-45 deg) intersected biotite/hornblende porphyry at 0.2-28.87 and 34.16-37.44 interbanded with mudstone from 29.87-34.16 and 37.44-42.67m. The hole intersected the S-2A zone from 7-12m consisting of patchy irregular pyrite, minor chalcopyrite, rare arsenopyrite and hematite. At the contact of the mudstone and porphyry, the hole intersected the Camp zone, an irregular mineralized zone along the above contact. It consisted of strong "chlorite streaming" with 3% patchy disseminated pyrite and traces of arsenopyrite. In addition, the lower porphyry unit contained a narrow section from 34.6-35.3m carrying up to 25% pyrite, up to 10% arsenopyrite and trace chalcopyrite.

DDH-96-36 (azimuth 240 deg, dip-55 deg) intersected hornblende porphyry at 0-34.29m, then mudstone from 34.29-40.88 followed by tuff from 40.88-44.20 and mudstone from 44.20-57.91m. A weak S-2A zone was intersected at 10.9-12.63m consisting of narrow sulfide veinlets, "chlorite streaming" and weak wispy hematite. The Camp zone along the porphyry/mudstone contact contained pyrite as coarse patches, traces of wispy chalcopyrite and traces arsenopyrite.

It is possible that the above first mudstone unit encountered has been faulted into the S-2A structure and that the Camp zone is truly part of the S-2A. In the surface area of trench 25 a wedge of mudstone has been faulted into the S-2A structure and replaces sulfide mineralization.

DDH-96-37 (azimuth 240 deg, dip-65 deg) contained hornblende porphyry from 0-41.85m, then mudstone from 41.85-55.47m. A weak S-2A zone was noted at 23.5-24.40m containing minor pyrite, traces arsenopyrite as well as chalcopyrite. "Chlorite streaming" was noted at 0.51-1.9m containing 2 fine disseminated pyrite.

DDH-96-37-39 were drilled off the same pad and along the same azimuth to test below trench 78 and DDH-96-17-20. Both holes failed to intersect any strong hematite mineralization and the H-1 zone was not identified. In addition the holes did not intersect any sulfide mineralization similar to that found in the above drill holes. Figure 35 shows the geology of DDH-96-38-39.

DDH-96-38 (azimuth 205 deg, dip-55 deg) intersected hornblende porphyry from 0-202m, then gabbro from 202-217.5m, hornblende porphyry at 217.5-233m and tuff from 233-243.55m. Massive but narrow sulfide veins containing pyrite and rare chalcopyrite were noted at 36-36.5, 82.6-83.45, 83.8-84.6,90.3-90.50, 127.85-127.95, 136.5-139.05, 144.6-144.83 and 152.5-159.50m. The vein at 127.85m contained rare galena as well as chalcopyrite. The zone of sulfide at 82.6-84.6m may represent the H-1 zone while the section at 152.5-159.5 is likely a S-zone. "Chlorite streaming" was noted at 88.5-88.9, 92.4-84.6 and 133.2-135.7m.

DDH 39 (azimuth 205 deg, dip-62 deg) contained hornblende porphyry from 0-248.5, then tuff from 248.5-260.91m. A narrow section of sericite/pyrite alteration was noted at 163.78-165.71m. The hole had semi-massive hematite from 73.5-74.6m that had strong magnetite and traces chalcopyrite. At 106-106.5, a massive sulfide vein carried patchy pyrite, traces arsenopyrite as well as chalcopyrite. At 217.5-218.11 a sulfide vein contained pyrite, minor arsenopyrite and trace chalcopyrite. "Chlorite streaming" was noted at 92.35-92.7 and 154-157.8m.

DDh-96-40-44 were drilled off the same pad to test at depth between trenches 1 and 7 (3.3m at 0.71 opt Au and 2.9m at 1.65 opt Au respectively). The holes 41 and 44 intersected a H-1 zone that is not seen at surface and that corresponds to trenches 70 and 91, located to the south and downhill. In addition, the holes had wide zones of sulfide stringers that may be an extension of mineralization intersected in DDH-96-18. Figure 36 shows the geology of DDH-96-40-44.

DDH-96-40 (azimuth 225 deg, dip-45 deg) intersected hornblende porphyry from 0-116.6m with narrow sections of volcaniclastic at 10-10.65 and 14.3-18.45m. A fault zone at 116.6-117m places pyroxene porphyry in juxtaposition to the above hornblende porphyry. Semi-massive hematite with disseminated magnetite, specularite and fine disseminated pyrite was noted at 46.55-46.95m. This appears to represent a narrow H-1 zone in this location. At 54.9-55.20m, a narrow zone of foliation contains intense chlorite, hematite and minor magnetite associated with about 1% arsenopyrite and minor pyrite.

DDH-96-41 (azimuth 225 deg, dip-55 deg) intersected hornblende porphyry from 0-174 containing narrow sections of volcaniclastic at 109.2-128.88 and 156-162.13m. Mudstone was intersected at 174-176.31m while gabbro was intersected at 176.31-184.1m. From 50.85 to 57.68. The hole encountered the H-1 zone consisting of three separate sections containing massive hematite and sulfide separated by hornblende porphyry. The mineralization consisted of massive hematite and magnetite with up to 1% fine grained pyrite. A narrow zone of semi-massive hematite, fine grained pyrite up to 5% and magnetite up to 2% was intersected at 73.45-74.7m. From 94.7-97.43, the hole intersected an S-zone containing up to 5% pyrite and 1% arsenopyrite. S-zone mineralization was also encountered at 110.3-112.30 consisting of pyrite in amounts up to 20% along with traces chalcopyrite. From 139.37-139.57, semi-massive pyrite and arsenopyrite were intersected. At 166.16 to 166.35m, a zone of intense chlorite alteration and wispy pyrite and arsenopyrite mineralization was noted.

DDH-96-42 (azimuth 225 deg, dip-65 deg) intersected hornblende porphyry from 0-161.2m with several volcaniclastic sections at 115.05-122.3 and 143.15-154.45m. Volcaniclastic is present at 161.2-200.0m while mudstone occurs from 200.1-202.5m, then gabbro is present at 202.5-206.05m. The strong H-1 zone encountered in DDH-96-41 was not noted in this hole. From 63.5-112.05m narrow veinlets of pyrite occur along with chlorite in zones generally less than 1m with the veinlets usually 2-3cm wide.

DDH-96-43 (azimuth 225 deg, dip-75deg) intersected hornblende porphyry from 0-227.3m with several fault zones at 43-48.5, 123.5-128.4 and 208-211m and a section of volcaniclastic at 110.8-135.9m. From 227.30-233.48, the hole intersected tuff. Massive to semi-massive sulfide was intersected at 195.45-198.5m. At 59.8-64.8 mineralization consisting of disseminated arsenopyrite generally less than 1% and 2-3% pyrite was noted. From 71-119.8m, narrow pyrite veinlets similar to those in DDH-96-42 were noted. At 149.18-195.45m, wispy arsenopyrite less than 1% and 5% pyrite occur as irregular granular patches and fine veinlets. This zone appears to form a halo to the massive to semi-massive sulfide at 195.45-198.5m that contains 75% fine grained pyrite and 2%medium grained arsenopyrite. From 198.5-208m, the core contained narrow sections of semi-massive pyrite and minor arsenopyrite. It is interpreted that a S-zone is present from 195.4-208m. "Chlorite streaming" is present at 29.9, 35.5-41.15 and 184-185m.

DDH-96-44 (azimuth 225 deg, dip-60 deg) was drilled to confirm the mineralization intersected in DDH-96-41. The hole intersected hornblende porphyry from 0 to 116.35m, then volcaniclastics from 116.35 to 171.6m with a section of porphyry at 121.8-139m. Minor disseminated arsenopyrite and pyrite occur at 33-37m and 50.7-63.12m. The hole intersected the H-1 zone at 63.12-67m consisting of massive hematite, magnetite, some specularite as well as arsenopyrite, pyrite and chalcopyrite. A weak S-zone was intersected at 83.5-87.90m containing minor pyrite as well as trace arsenopyrite and chalcopyrite. From 100.9-114.95, narrow sections of pyrite veinlets with traces chalcopyrite and rare arsenopyrite were noted. Another S-zone at 129.08-137.0m contains pervasive magnetite, 5% coarse pyrite and traces chalcopyrite. Abundant "chlorite streaming" was noted at 37.9-39.15, 45.3-50.7, 71.74, 75.5-79.8, 105.5-106.3 and 113.35-113.60m.

DDH-96-45-46 were drilled off the same pad and in the same direction to test below trench 12 (6.7m at 0.56 opt Au) and DDH-95-3-6. The holes appeared to intersect a fault block containing abundant gabbro and argillite. The H-1 zone was not identified in these holes. Figure 37 shows the geology of DDH-96-45-46.

DDH-96-45 (azimuth 225 deg, dip-55 deg) intersected biotite/hornblende feldspar from 0 to 127m with a section of volcaniclastic at 95.8-104.8m. Fault zones were intersected at 127.3-133.3, 198.4-203 and 219.73-221.98m. The hole intersected volcaniclastic at 133.3-148.5m, then mudstone from 148.5-164.8m, tuff from 164.99-196.4m, mudstone again from 196.4-198.4m, diorite from 20333-219.79m and finally gabbro at 221.28-222.50m. Semi-massive hematite was encountered at 2.74-6.50, 24.18-33.1, 41-50.5, 51.95-52.2 and 67.75-69m. Minor sulfide rich sections were noted in the upper sections from 33.1-91.65m. The section at 89.9-91.65 is interpreted as a S-zone that contains 5% pyrite as granular patches as well as traces chalcopyrite. At 166.45-203, narrow pyrite sections carry local black sphalerite. "Chlorite streaming" occurs at 94-95.8 and 118.6-120m.

DDH-96-46 (azimuth 225 deg, dip-62 deg) intersected hornblende porphyry at 0-116.5m, then diabase at 116.5-149.89, mudstone from 149.89-173.46 with a section of porphyry at 151.03-163.68, then porphyry from 173.46-221.78 followed by gabbro at 224.64-230.43. Several fault zones were noted at 58.7-64.7 and 221.78-224.64m. Semi-massive hematite was noted at 20.5-24, 35.3-38.35, 60.6-60.9, 65.3-65.9, 87.8-88.35, and 96.6-97.4m. A very narrow pyrite arsenopyrite vein was encountered at 157.7-157.80m. Strong pervasive sericite at 173.46-221.78m carried local fine grained disseminated pyrite as well as occasional sphalerite. Semi-massive hematite was noted at 210.96-211.85 and 217.5-218.45m with pyrite mineralization between the above zones. "Chlorite streaming" was encountered at 87.1-87.6m.

DDH-96-47-48 were drilled off the same pad and along the same azimuth to test a magnetic anomaly. Both holes failed to detect the source of the anomaly. Figure 38 shows the geology of holes 96-47-48.

DDH-96-47 (azimuth 225 deg, dips-45 deg) intersected hornblende/biotite porphyry at 0-177.64m with a section of diabase at 132.59-134.7m and volcaniclastics at 148.6-163m. Tuff was intersected at 177.64-180.18m followed by a fault zone at 180.18-184.5m and then gabbro at 184.5-196.24m. Semi-massive hematite at 0.34-6.2m contained weak malachite in fractures as well as traces disseminated pyrite. Semi-massive hematite veinlets are present at 46.14-48.40m. Narrow veinlets of pyrite, local chalcopyrite and rare sphalerite are present throughout the hole. Veinlets are generally 1-2cm wide in sections less than 1m thick. "Chlorate streaming" occurs at 16.10-16.9, 94.15-94.2, and 109.97-110.55m.

DDH-96-48 (azimuth 225 deg, dip-55 deg) intersected semi-massive hematite at 1.43-2.10m, then biotite/hornblende porphyry from 2.10-136m, tuff from 136-145m, volcaniclastics from 145-155m; hornblende porphyry from 155-162.98, diabase at 162.98-163, volcaniclastics 163-190.90, tuff at 190-199.2, a fault zone at 199.22-203.61 and pyroxene porphyry at 203.61-245.67m. About 3-5% wispy pyrite associated with hematite was noted in the section from 14.8-16.60m and 33.5-34.40m with the latter section containing intense magnetite. At 43.08-43.45, disseminated fine grained chalcopyrite is associated with malachite on fractured surfaces. Semi-massive hematite occurs at 46.3-48m as well as at 81.9-83.30 and 92.95-99m with minor associated magnetite. From 59.9-70.3m, local wispy chalcopyrite and pyrite in amounts from 1-4% was noted. At 86.6-89.50, minor chalcopyrite, magnetite and pyrite are associated with wispy hematite. From 111-118, the hole intersected an S-zone containing minor arsenopyrite up to 3% and locally up to 20% pyrite. At 195.8-205.4 and 221.75-222.15 the hole intersected a zone of 2-4% fine grained pyrite associated with 1-4% sphalerite.

DDH-96-49-51 were drilled off the same pad as 96-47-48 but at a different azimuth to test the H-3 zone below trench 117 (6m at 0.122 opt Au and 1.5m of 0.106 opt Au). The hole intersected strong hematite/chlorite alteration but failed to intersect similar type mineralization to that found in trench 117. Figure 39 shows the geology of DDH-96-49-51.

DDH-96-49 (azimuth 45 deg-45 deg) intersected biotite hornblende porphyry from 0-77.72m. Massive to semi-massive hematite was intersected at 49.83-49.97 and 64.55-66.90m.

DDH-96-50 (azimuth 45 deg, dip-55 deg) intersected hornblende/biotite porphyry from 0-62m, then the H-3 zone at 62-70.8m and porphyry from 70.8-106.69 with a narrow section of diabase at 96.8-97.3m. Semi-massive hematite was encountered at 0.26-1m, hematite veinlets occur at 20.45-20.70m and minor chalcopyrite with malachite was noted at 41.7-41.8. A semi-massive hematite zone associated with massive hematite/magnetite veinlets up to 20cm wide and dark green black chlorite at 50.87-52.3 is probably part of the H-3 zone. The H-3 zone noted above consists of sections of semi-massive hematite associated with chlorite. Semi-massive hematite at 73.6-74.90 is probable a stringer associated with the above H-3 zone. "Chlorite streaming" was noted at 66.7-67.55m.

DDH-96-51 (azimuth 45 deg, dip-65 deg) intersected hornblende/biotite porphyry from 0-118m with a section of semi-massive hematite at 34-41m, volcaniclastics at 58-68.50m and diabase at 100.6-101.50m. From 118-139.29, the hole intersected a series of volcaniclastic. Semi-massive hematite zones are noted at 0.2-1.10m, 34.41m, 72-73 and 82.25-85.85m. The zone at 34.41m which may be a faulted extension of the H-3 contains semi-massive to massive pervasive hematite, traces chalcopyrite as well as minor specularite.

DDH-96-52-55 were drilled off the same pad along the same azimuth to test the H-3 zone below trench 100 (1m of 2.328 opt Au). The holes failed to define any strong H-3 zone. Figure 40 shows the geology of DDH-96-52-55.

DDH-96-52 (azimuth 45 deg, dip-45 deg) has hornblende/biotite porphyry from 0-53.34m. From 4.6-6.4, minor pyrite is associated with traces chalcopyrite. Semi-massive hematite occurs at 7.65-7.99, 30.05-35.3 and 36.6-48.7m while a hematite vein occurs at 11.85-11.89. The section at 36.6-48.7m is probably the H-4 zone. "Chlorite streaming" occurs at 49.25 to 50.5m.

DDH-96-53 (azimuth 45 deg, dip-55 deg) intersected hornblende/biotite porphyry from 0-76.5m with local narrow volcaniclastic sections. Semi-massive hematite occurs at 8.15-10.5, 48.75-53.1 and 70.1-70.7m.

DDH-96-54 (azimuth 45 deg, dip-65 deg) intersected hornblende/biotite porphyry from 0-82.50m, then a fault from 82.5-83.10 with volcaniclastics from 83.1-86.56m. Semi-massive hematite was intersected at 9.92-10.35, 12.25-15, 26-26.78, 29.1-29.35, 42.12-42.4 and 48-52.5. "Chlorite streaming" occurs at 62-64.05m. Fine grained chalcopyrite and minor pyrite occur within the fault zone.

DDH-96-55 (azimuth 45 deg, dip-75 deg) intersected hornblende/biotite porphyry at 0-62.5 and 88.27-108.5m. The hole encountered a fault zone at 33.25-38.7, volcaniclastics at 62.5-86.07 and 108.5-116.43 and semi-massive hematite at 86.07-88.27m. At 14-18.35m, a zone of strong hematite stringers contains rare magnetite with some chlorite. A strong hematite stockwork from 75.3-88.27 may represent the H-3 zone. The zone contains weak to strong magnetite, locally strong chlorite as well as minor pyrite. "Chlorite streaming" occurs at 29.9-30.15m.

DDH-96-56-57 were drilled off one pad and along the same azimuth to test the H-1 zone and S-2A zone in the area of trench 21 and 23 (2.35m of 0.41 opt Au and 2.5m of 0.09 opt Au respectively). Figure 41 shows the geology of DDH-96-56-57.

DDH-96-56 (azimuth 225 deg, dip-50 deg) intersected the megabreccia at 0-17.07m, then biotite/hornblende porphyry from 17.07-153.50m with volcaniclastics from 35-37.70 and semi-massive hematite at 37.7-54.00 and 121.41-122.61m. A fault zone was intersected at 153.5-162.44m with mudstone at 162.44-163.5 and 168.62-171.20m and tuff at 163.5-168.62 and 171.2-179.83m. Minor disseminated pyrite with magnetite occurs along narrow zones at 31.9-33.22m. The semi-massive hematite at 37.7-54m probably represents the H-1 zone. This intersection contains local specularite, minor local chalcopyrite and some chlorite veins. At 93.85-94.60 a hematite vein contains magnetite and specularite as well as 3% pyrite as coarse grained patches. From 97.6-97.72, massive coarse grained pyrite forms 30% of the rock. The S-2B zone was intersected at 121.41-122.61 consisting of strong veined chlorite, magnetite, hematite, pyrite and arsenopyrite. From 122.61 to 135.94, local, patchy, coarse grained pyrite is associated with minor local arsenopyrite. At 136.45 to 141.85, the S-2A zone, consisting of local coarse pyrite up to 6% and arsenopyrite up to 5%, was encountered. "Chlorite streaming" was noted at 69.1-70.25m.

DDH-96-57 (azimuth 225 deg, dip-62 deg) intersected the megabreccia at 0-22.12m, then volcaniclastic from 22.12-40.47m with biotite/hornblende porphyry at 40.47-170.87 except for volcaniclastic at 44.8-49.32 and semi-massive hematite at 121.5-123.54m. Tuff was encountered at 170.87-171.03m, a fault zone at 171.03-172.21m and volcaniclastics from 172.21 to 206.70m. Approximately 3% coarse to fine grained disseminated pyrite occurs from 28.7-37.15m and 54.3-59.65m. At 82.5-89.90, the hole intersected a weak H-1 zone consisting of strong pervasive hematite with local K-spar and silicification. A massive hematite vein at 110.9-111.60m may be the S-2B zone. It contains magnetite with associated intense pervasive dark green chlorite. From 117.1-121.5, wispy hematite and pyrite up to 3% form a halo zone to a semi-massive hematite zone at 121.5-123.54m. The hematite zone contains coarse patchy pyrite and locally up to 1% chalcopyrite. Narrow pyrite, chalcopyrite and arsenopyrite stringers occur at 142.2-152.7m. At 152.0-155.7m, the S-2A zone carries 3% coarse grained pyrite and minor arsenopyrite.

DDH-96-58-60 were drilled off the same pad and along the same azimuth to test the H-1 and S-2A structures below trench 21 and 23 as well as between the DDH-96-56-57 intersections. DDH-96-58 was abandoned after the rocks got struck. Both holes 96-59-60 intersected the H-1 and S-2A zones. Figure 41 shows the geology of DDH-96-57-60.

DDH-96-58 (azimuth 40 deg, dip-45 deg) intersected mudstone from 0-14.8m then tuff from 14.80-20.65 with a fault zone at 20.65-22.25m. The S-2A zone was intersected at 19.5m and the hole was lost in the zone.

DDH-96-59 (azimuth 40 deg, dip-45 deg) was re-drilled along the same dip as DDH-96-58. It intersected mudstone at 0.37-15.63m, then tuff from 15.63-22.92m with biotite/hornblende porphyry from 22.92 to 91.75m except for fault gouge at 55.8-55.9m and a sulfide-hematite vein at 63.64-64.51m. The S-2A zone which was encountered at 19.28-22.92 consisted of about 3% pyrite and local "chlorite streaming". From 42.1-55.8m, narrow wispy pyrite occurs along with local wispy hematite. The S-2B zone at 61.56 to 64.51 consists of arsenopyrite, pyrite, magnetite and chalcopyrite in the wall of a massive hematite/magnetite vein containing minor pyrite, arsenopyrite and chalcopyrite. The hole does not appear to have been drilled deep enough to intersect the H-1 zone.

DDH-96-60 (azimuth 40 deg, dip-62 deg) intersected mudstone from 0-24.72m, tuff from 24.72-26.69m and biotite/hornblende porphyry at 26.69-140.21m except for 32.94-35.31 and 90.15-101.5m. The hole intersected the S-2a zone from 32.94-35.31m, consisting of breccia with chlorite and sulfide rich matrix. A zone from 63.55-71.80 contains minor pyrite, arsenopyrite and chalcopyrite. From 91.5-101.5, the hole intersected the S-2b zone and associated mineralized stringers, both containing strong chlorite, pyrite, hematite and local chalcopyrite. The H-1 zone at 111.2-140.21 consisted of a weakly mineralized section containing weak hematite/magnetite stringers with minor "chlorite streaming".

DDH-96-61-62 were drilled off the same pad along the same azimuth to test a section of the H-1 and S-2A zone north of trenches 21-25. This section is covered by permanent ice and snow. Both holes hit the above zones. Figure 42 shows the geology of DDH-96-61-62.

DDH-96-61 (azimuth 225 deg, dip-45 deg) intersected megabreccia at 4.27 to 32.46m, then volcaniclastic at 32.46-42.70 with hornblende/biotite porphyry from 42.7-113.39m. Fault zones were noted at 81.5-82.25 and 111.09-113.39m. The hole intersected the H-1 zone at 45.72-46.76m consisting of "chlorite streaming" and minor hematite veinlets. A zone at 60-81.5m consists of narrow stringers of hematite, pyrite, "chlorite streaming", arsenopyrite and chalcopyrite generally 3-4cm wide. From 86.75 to 93.45m, the hole encountered the S-2A zone comprised of patchy pyrite and arsenopyrite with minor chalcopyrite. "Chlorite streaming" was noted at 84.95-85.35m.

DDH-96-62 (azimuth 225 deg, dip -60 deg) intersected the megabreccia from 4.27-16.61m, then hornblende/biotite porphyry at 16.61-159.65 with a section of volcaniclastics at 31-55.5m as well as several fault zones at 72.6-81.3m and 131.8-138.23m. From 159.65-188.37, the hole encountered volcaniclastics. The H-1 zone occurs at 62.48-72.6m consisting of weak hematite alteration and minor pyrite. From 81.3-97.81m, the hole contained narrow, wispy, fine grained pyrite as well as traces arsenopyrite. From 159.65-176m, the hole contained disseminated and veined pyrite; up to 4% locally with traces of sphalerite.

DDH-96-63-64 were drilled off the same pad along the same azimuth, 50m north of 63-64 in an ice covered area. Both holes hit the H-1 and S-2A zones. Figure 43 shows the geology of DDH-96-63-64.

DDH-96-63 ( azimuth 225 deg, dip-45 deg) intersected volcaniclastic from 7.32-44.25 with a section of hornblende porphyry at 30.3-39m. The porphyry is present from 46.5-103.61m with fault gouge at 4.25-46.5 and 48.55-49.77m. From 103.61-125m, the hole intersected tuff, then mudstone from 125-128.02m. The hole intersected massive hematite at 66.41-66.72m that is likely the H-1 zone. The section contained magnetite, specularite, trace chalcopyrite as well as trace visible gold. The S-2A zone was encountered at 73.75-76.8m consisting of patchy pyrite and arsenopyrite. The hole had minor pyrite and arsenopyrite from 81-81.6m as well as at 103.61-111.85m.

DDH-96-64 (azimuth 225 deg, dip-60 deg) intersected the megabreccia from 6.4-10.05m, then volcaniclastic from 10.05-48.3m and pyroxene porphyry at 48.3-49.20m. Hornblende porphyry is present at 49.2-144m with fault zones at 49.7-51.9, 128-129.5 and 132.5-132.75m. From 144-185.03m volcaniclastics are underlain by tuff from 156.7-187.16 and then mudstone at 187.16-188.98m. A narrow H-1 zone at 70.26-70.48m contains massive hematite/magnetite with traces chalcopyrite and visible gold. From 89.95-103.75m, wispy fine grained pyrite is present in narrow zones. It is possible that the S-2A zone is represented by these stringers.

DDH-96-65-66 were drilled off the same pad and along the same azimuth to test the H-1 and S-2A zone; 50m north of DDH-96-63-64. Both holes intersected the H-1 and S-2A zones. Figure 44 shows the geology of DDH-96-65-66.

DDH-96-65 (azimuth 225 deg, dip-45 deg) intersected pyroxene porphyry at 9.75-26.55, semi-massive hematite at 26.55-28.95, megabreccia at 28.95-33.9, volcaniclastic at 33.9-44.5, biotite/hornblende porphyry at 44.5-70.00, volcaniclastic at 70-126.16 with a section of hornblende porphyry at 91.14-123.65 and mudstone at 126.16-128.02m. The H-1 zone occurs at 44.5-56.15m and 60-61.9m with narrow hematite/specularite veinlets and local magnetite in the first section and massive to semi-massive hematite/magnetite containing traces chalcopyrite and visible gold in the second section. The S-2A zone is present at 69.5-70m consisting of 10% pyrite and 5% arsenopyrite. Narrow pyrite stringers were noted in the section from 70-85.7m. At 108.6-112.75 and 124.65-126.16 the core contained up to 4% pyrite in the first section and coarse arsenopyrite and pyrite in the second section.

DDH-96-66 (azimuth 225 deg., dip - 60 deg.) intersected megabreccia from 8.53-65.1m, then hornblende porphyry at 65.1-124, volcaniclastics at 124-145.32, tuff at 145.32-177.57, mudstone at 177.57-178.42. and tuff at 178.42-182.88m.

The H-1 zone which was intersected at 73.5-79.3m consisted of a hematite stockwork zone containing minor pyrite and local arsenopyrite. The S-2A zone at 93.75-101.7m contained local disseminated pyrite up to 5% with local minor arsenopyrite. From 124.5-140.97, minor local pyrite veinlets are associated with minor chalcopyrite. At 149.55-156.6, minor pyrite is associated with traces of sphalerite.

DDH-96-67 was drilled 50m north of DDH-96-65-65 to test for extension of the H-1 and S-2A mineralization. The hole hit a reverse fault that may have offset the above mineralization. Figure 45 shows the geology of DDH-98-67.

The hole intersected the megabreccia from 6.51-69.00m with a section of volcaniclastics at 57.75-64.65m. Volcaniclastics are present from 69-111.6, then tuff at 113.2-126.85, mudstone at 126.85-135.5 and then volcaniclastics at 135.5-153.62. A fault zone was intersected at 111.6-113.2m at 57.75-64.65, the core contained disseminated pyrite with traces of arsenopyrite. The H-1 zone which may possibly be present at 82.42-91.30 contains narrow sections of hematite with local chalcopyrite. At 113.2-124m, disseminated pyrite in amounts up to 5% contains minor chalcopyrite at 122.8-123.15, wispy pyrite is associated with minor sphalerite.

DDH-96-68-73 (start of NQ2 drilling) were drilled off the same pad and along the same azimuth to detail test the H-1 zone below trench 11 (2.7m at 0.71 opt au). All holes were successful in intersecting the above zone. Figure 46 shows the geology of DDH-96-68-73.

DDH-96-68 (azimuth 43 deg. dip -45 deg.) intersected volcaniclastics at 1.89-15.24m with the H-1 zone at 5.5-8.2m. The zone consisted of semi-massive to massive hematite/magnetite with some visible gold and local malachite.

DDH-96-69 (azimuth 43 deg., dip -50 deg.) intersected volcaniclastics at 0.23-15.24m with the H-1 zone at 6.60-7 and 8-8.7m. The zone consisted of intense chlorite alteration, semi-massive to massive hematite/magnetite, minor chalcopyrite and irregular quartz/calcite/specularite veining.

DDH-96-70 (azimuth 43 deg. dip -55 deg.) intersected the volcaniclastics from 0.68-21.34m with the H-1 zone at 8.61-9.75m. In this hole, the H-1 zone consisted of semi-massive hematite with local intense chlorite.

DDH-96-71 (azimuth 43 deg., dip -60 deg.) intersected volcaniclastic at 0.28-25.91m with the H-1 zone at 9.83-10.88m. This hole contained strong hematite mineralization with weak magnetite.

DDH-96-72 (azimuth 43 deg., dip -70 deg.) intersected volcaniclastic from 0.2-35.05m with several sections of hematite forming the H-1 zone at 14.53-15.11 and 22.46-22.91m. The first section contained massive hematite/magnetite while the second section contained massive hematite/magnetite, strong patchy silica with trace pyrite and trace visible gold. Narrow pyrite and chalcopyrite stringers are present between the above two zones.

DDH-96-73 (azimuth 43 deg., dip -85 deg.) intersected volcaniclastics from 0.2-37.42m with hornblende porphyry at 37.42-99.06m. From 25.6-36m, the hole intersected narrow veined and disseminated sulfide sections that may represent the H-1 zone. These generally have up to 4% pyrite associated with wispy hematite. At 39.5-46.5, the core contains 5% pyrite associated with hematite and traces of chalcopyrite. "Chlorite streaming" was noted at 15.5-18.4, 52.3-54.1 and 67.75-71.4m.

DDH-96-74-79 were drilled off the same pad and along the same azimuth to test the H-1 zone between trench 11 and 13. Figure 47 shows the geology of DDH-96-74-79. All holes intersected the H-1 zone.

DDH-96-74 (azimuth 43 deg., dip -45 deg.) intersected volcaniclastic from 0-16.46m with the H-1 zone at 2.5-3.93m. This zone consists of massive hematite, lesser magnetic, minor specularite, trace visible gold and wispy chalcopyrite.

DDH-96-75 (azimuth 43 deg. dip -55 deg) intersected volcaniclastic from 6-31.64m with the H-1 zone at 5.09-7.35m. This zone consists of massive hematite/silica veins, minor magnetite and traces specularite.

DDH-96-76 (azimuth 43 deg., dip 65 deg.) intersected volcaniclastic from 6-24.99m with the H-1 zone at 6.4-10.59m and hornblende porphyry at 24.99-25.91m. The H-1 zone consisted of hematite/silica veins up to 16cm with intense green chlorite and traces of visible gold.

DDH-96-78 (azimuth 43 deg., dip -85 deg.) intersected volcaniclastic from 6-41.15m with the H-1 zone at 17.8-18.5m. The zone consists of massive hematite veins associated with intense green chlorite.

DDH-96-79 (azimuth 43 deg., dip -80 deg.) intersected volcaniclastic at 0-30.48m with the H-1 zone at 15.23-16.50m. The zone consists of strong hematite veining with strong pervasive chlorite.

DDH-96-80-85 was drilled off the same setup and along the same azimuth to test below trench 11 and above holes DDH-96-26-29. All the holes intersected the H-1 zone. Figure 31 shows the geology of DDH-96-80-85.

DDH-96-80 (azimuth 43 deg., dip -45 deg.) intersected volcaniclastics from 0-14.93m, then the H-1 zone at 14.93-15.9m and hornblende porphyry at 15.9-21.34m. Narrow pyrite micro-veins occur at 2-3.60m. The H-1 zone consists of semi-massive hematite in black chlorite stringers and patches as well as minor magnetite patches.

DDH-96-81 (azimuth 43 deg. dip -55 deg.) intersected volcaniclastics at 0-27.43m with the H-1 zone at 17.75-19.52m. The zone consists of semi-massive hematite with a 5cm vein of massive magnetite containing coarse visible gold as well as malachite in vuggy sections. "Chlorite streaming" occurs at 3.25-4.80m and contains wispy hematite and up to 5% pyrite.

DDH-96-82 (azimuth 43 deg. dip -65 deg.) intersected volcaniclastics at 0-30m except for the H-1 zone at 19.36-21.5m and hornblende porphyry at 30-37m. The H-zone is a mottled pink to black with minor massive magnetite and massive chlorite stringers.

DDH-96-83 (azimuth 43 deg. dip -75 deg.) intersected volcaniclastics from 0-51.51m. The H-1 zone was not readily apparent in this hole due to the lack of massive hematite/magnetite.

DDH-96-84 (azimuth 43 deg. dip -85 deg.) intersected volcaniclastic from 0-19.8m, then hornblende porphyry from 79.8-91.14 except for the H-1 zone at 27-31.4m and a faulted off extension of the H-1 zone at 64.4-78.60. It appears that a shallow dipping north westerly trending fault has created an offset of 15m. The first H-1 zone intersected consists of patches and semi-massive veins of hematite with strong chlorite and magnetite as well as coarse gained pyrite as veinlets. The second zone encountered consisted of massive hematite veining with abundant specularite veinlets, visible gold as numerous fine grained specks, local intense silicification and minor pyrite veinlets. "Chlorite streaming" was noted at 4.3-8.00, 80.5-11.3, 24-27 and 77-78m, generally with fine grained pyrite up to 3-5%.

DDH-96-85 (azimuth 43 deg. dip -80 deg.) intersected volcaniclastic from 0-25.5m and hornblende porphyry from 25.5-75.29 with the H-1 zone at 50.5-57.8m. This zone consists of narrow hematite stringers with local abundant malachite. "Chlorite streaming" with minor pyrite occurs at 0-3.6, 15.5-18 and 30.3-30.6m. A narrow shear zone was noted at 57.5-57.6m.

DDH-96-86-90 were drilled off the same pad and along the same azimuth to test the H-1 zone just north of trench 20 (3.5m of 0.21 opt Au.). All the holes encountered varying thickness of the H-1 zone. Figure 48 shows the geology of DDH-96-86-90.

DDH-96-86 (azimuth 36 deg., dip -45 deg.) intersected volcaniclastic from 0-15.24m with the H-1 zone at 10-11.2m. This zone consisted of minor hematite stringers and a massive pyrite vein at 10.26-10.51m.

DDH-96-87 (azimuth 36 deg., dip -55 deg.) intersected volcaniclastic from 0-24.38m with the H-1 zone occurring at 14.87-15.85m. The H-1 zone is brecciated in appearance with pink calcite fragments in highly chloritic rock. Hematite stringers are offset up to 1 cm along calcite veinlets. "Chlorite streaming" occurs at 2.7-3.30m in association with abundant hematite and pyrite veinlets.

DDH-96-88 (azimuth 36 deg., dip -65 deg.) intersected volcaniclastic from 0-26.80m, then the H-1 zone at 26.8-27.2m and hornblende porphyry at 27.2-33.53m. The narrow H-zone is comprised of generally narrow semi to massive hematite veins, strong chlorite, 6-7% pyrite, 1% chalcopyrite and 3% magnetite.

DDH-96-89 (azimuth 36 deg., dip -75 deg.) intersected volcaniclastic from 0-36m with the H-1 zone at 25.5-29.4m and hornblende porphyry at 36-44.2m. The H-1 zone consists of weak hematite stringers in strong pervasive chlorite.

DDH-96-90 (azimuth 36 deg., dip -85 deg.) intersected volcaniclastic from 0-89.92m with the H-1 zone at 40.07-42m. This zone consists of abundant black chlorite veinlets, intense hematite stringers and 7% coarse pyrite, trace chalcopyrite and 2% magnetite patches. "Chlorite streaming" occurs at 5.7-24m with minor pyrite.

DDH-96-91-95 were drilled off the same pad along the same azimuth to test the H-1 zone beneath trench 4 (5.5m at 3.590 opt Au.). The holes all hit the H-1 zone except for DDH-96-94 which encountered an andesite dyke cutting the zone. Only part of the H-1 zone was tested in this hole. Figure 49 shows the geology of DDH-96-91-95.

DDH-96-91 (azimuth 218 deg. dip -45 deg.) intersected volcaniclastics from 0-18.29m with the H-1 zone at 1.5-9.80m. This zone consisted of semi-massive to massive hematite stringers and veins in highly chloritized, locally silicified K-spar altered rocks. Traces of chalcopyrite and 1-2% magnetite were noted in the zone.

DDH-96-92 (azimuth 218 deg. dip -55 deg.) intersected volcaniclastic from 0-25.91m with the H-1 zone at 2.65-14.40m. The zone consisted of hematite stringers in intensely K-spar altered rocks. It contained chlorite and rare magnetite stringers, traces of chalcopyrite and local pyrite associated with intense "chlorite streaming".

DDH-96-93 (azimuth 218 deg., dip -65 deg.) intersected volcaniclastics from 6-35.5m with the H-1 zone at 7.95-20.6m and diabase at 35.5-38.1m. The H-1 zone consisted of massive hematite veins with magnetite in association with specularite, visible gold and coarse grained pyrite veins up to 40cm.

DDH-96-94 (azimuth 218 deg., dip -75 deg.) intersected volcaniclastic from 0-65.84m with a partial H-1 zone at 50.6-56.16m and a series of diabase dykes at 32.75-43.87, 56.16-61.10 and 61.6-61.75m. This hole is most likely just intersecting the edge of the dyke noted at surface just a short distance from trench 4. The H-1 zone consisted of minor massive hematite veins in intensely chlorite altered rocks.

DDH-96-95 (azimuth 218 deg., dip -85 deg.) intersected volcaniclastics from 0-105.46m with the H-zone at 90-95.92m, diabase dykes at 33.75-45.05 and 60.27-63m and tuff at 81.5-90m. The H-1 zone consists of massive pyrite, arsenopyrite and hematite/magnetite forming up to 30-40% of the zone.

DDH-96-96-100 were drilled off the same pad and along the same azimuth to test trenches 93 and 95 (3m at 0.5 opt Au and .06% Co and 2.3m at 2.91 opt Au and .74% Co respectively). The holes failed to intersect any mineralization bearing the above gold values. Figure 50 shows the geology of DDH-96-96-100.

DDH-96-96 (azimuth 195 deg., dip -45 deg.) intersected volcaniclastic from 0-71.93m. Very narrow pyrite stringers with occasional arsenopyrite and trace chalcopyrite were intersected, especially at 8-5-8.6, 17-20 and 52.9-54.7m.

DDH-96-97 (azimuth 195 deg., dip -55 deg.) intersected volcaniclastic from 0-13.2m, then mudstone at 13.2-15.03m and volcaniclastic at 15.03-76.26m with a section of pyroxene porphyry at 47.1-67.5m from 6-13.2m, the core contained 1-2% disseminated pyrite with minor bleb arsenopyrite.

DDH-96-98 (azimuth 195 deg., dip -65 deg.) intersected volcaniclastics from 0-109.42 with mudstone at 13.63-19.1m and pyroxene porphyry at 48.92-66.07, 69.06-79.95 and 86.1-99m. At 9.43-10.48m, the hole encountered 1-2% pyrite and 1% arsenopyrite as coarse patches.

DDH-96-99 (azimuth 195 deg., dip -75 deg.) interested volcaniclastics from 0-58.5m with mudstone at 29.3-30m and gabbro at 58.5-106.58m. From 9.95 to 12.6m, narrow pyrite veinlets contain minor coarse arsenopyrite blebs.

DDH-96-100 (azimuth 195 deg., dip -85 deg.) intersected volcaniclastic from 0-154.23m with semi-massive sulfides at 47.95-50.59m. From 17.37-18.65, the core contains up to 7% pyrite and 2% arsenopyrite. The section at 47.95-52.20 contains up to 20% pyrite and 10% arsenopyrite.

DDH-96-101-104 were drilled off the same pad and along the same azimuth to test below trench 1 (3.3m at 0.71 opt Au). This panel of holes utilized the same pad as DDH-96-96-100. Figure 51 shows the geology of DDH-96-101-104.

DDH-96-101 (azimuth 241 deg. dip -45 deg.) intersected volcaniclastics from 0-68.28m interbedded with mudstone at 13.9-15.54, 22.5-23.5 and 49.6-50.65m. From 6.5-11m a weak S zone was intersected containing up to 6% pyrite. Rare pyrite veinlets were encountered from 29.05 to 68.28m.

DDH-96-102 (azimuth 241 deg., dip -55 deg.) intersected volcaniclastics from 0-53.05 with mudstone at 12-16.95 and 51.15-52.3m and pyroxene porphyry at 16.95-42.37m. A fault zone occurs at 53.05-54.89m and pyroxene porphyry at 54.89-94.18m. From 4.40-16.95, a weak S zone locally contains up to 5% pyrite. Narrow widely spaced pyrite veinlets occur below the above S zone from 16.95-71.7m. A semi-massive sulfide zone containing pyrite and arsenopyrite associated with black chlorite was intersected at 71.7-72.3m.

DDH-96-103 (azimuth 241 deg., dip -65 deg.) intersected volcaniclastic at 0-15.05, 17-45, 50.5-55.1 and 68-69m, mudstone at 15.05-17m and pyroxene porphyry at 45-50.5, 55.1-68 and 69-107.25m. A weak S-zone is present at 5.76-13.70m with minor pyrite and abundant limonite on weathered fractures. A narrow pyrite/arsenopyrite vein was intersected at 68.15-68.3m.

DDH-96-104 (azimuth 241 deg. dip -75 deg.) intersected volcaniclastic from 0-155.14m with mudstone at 20.1-25.95 and 134.21-148.5m, pyroxene porphyry at 66.75-84 and 94.5-102.1 and a fault zone at 148.5-150.1m. A weak S. zone was intersected at 5.96-19.19m with narrow pyrite veinlets associated with black chlorite.

DDH-96-105-107 were drilled off the same pad along the same azimuth to test below trench 205 (1.4m at 0.135 opt Au and 0.099% Co, 3.8m at 0.22 opt Au and 0.17% Co and 8m of 0.069 opt Au and 0.27% Co). The holes failed to intersect mineralization similar to that in trench 205. Figure 52 shows the geology of DDH-96-105-107.

DDH-96-105 (azimuth 236 deg. dip -45 deg.) intersected volcaniclastic from 0-33.63m.

DDH-96-106 (azimuth 236 deg. dip -55 deg.) intersected volcaniclastics from 6-60.96m. The hole encountered semi-massive hematite at 16.7-17.2m, chlorite streaming at 44.96-48.77m and narrow pyrite/arsenopyrite veinlets at 53.8-53.87m.

DDH-96-107 (azimuth 236 deg. dip -65 deg.) intersected volcaniclastic at 0-62.18m.

DDH-96-108-109 were drilled off the same pad and along the same azimuth to test below trench 8 (5.3m at 0.16 opt Au.). This panel was drilled off the same set up as DDH-96-105-107. Figure 53 shows the geology of DDH-96-108-109.

DDH-96-108 (azimuth 215 deg. dip -45 deg) intersected volcaniclastics from 0-60.96m with "chlorite streaming" at 40.85-43.5 and a fault zone at 56.2-60.06m. The section from 0-25.91 contained 3% pyrite, traces of chalcopyrite and minor limonite.

DDH-96-109 (azimuth 215 deg. dip -55 deg.) intersected volcaniclastics at 0-60.66m with "chlorite streaming" at 45.2-49.1m. Semi-massive hematite zones were encountered at 13.05-15.6 and 34.9-35.05m.

DDH-96-110-114 were drilled off the same pad and along the same azimuth to test the H-1 zone below trench 15 (7.5m at 0.76 opt Au.). The holes all intersected the above zone. Figure 54 shows the geology of DDH-96-110-114.

DDH-96-110 (azimuth 225 deg. dip -45 deg.) intersected volcaniclastic from 0-21.34m with the H-1 zone at 3.94-12.9m and a zone of "chlorite streaming" at 15.8-16.8m. The H-1 zone consisted of local K-spar altered and silicified sections containing semi to massive hematite veins carrying fine visible gold.

DDH-96-111 (azimuth 225 deg. dip -55 e.g.) intersected volcaniclastic from 0-43.59m with the H-1 zone at .5-25.82m and a section of "chlorite streaming" at 22.56-24.1m. The H-1 zone consists of intense chlorite alteration containing semi-massive hematite veinlets with minor chalcopyrite and rare bornite.

DDH-96-112 (azimuth 225 deg., dip -65 deg.) intersected volcaniclastics from 0-46.63m with a general weak H-1 zone at 18-32.40m. This zone consists of minor massive hematite veinlets, local intense "chlorite streaming" and local malachite staining. A zone of "chlorite steaming" at 44.2-46.63m contains local hematite rich fragments and 3% pyrite as local patches.

DDH-96-113 (azimuth 225 deg., dip -75 deg.) intersected volcaniclastics from 0-69.49m with the H-1 zone at 39.5-41.3m and a fault zone at 48.6-53.34m. The H-1 zone consists of a narrow section of massive hematite stringers plus intense "chlorite streaming".

DDH-96-114 (azimuth 225 deg., dip -85 deg.) intersected volcaniclastics from 0-106.36m with the H-1 zone at 68.5-89m. This zone consists of local semi to massive hematite stringers, local magnetite and local pyrite.

DDH-96-115-1119 were drilled off the same pad and the same azimuth to test the H-1 zone below trench 14 (7.3m at 1.5 opt Au.) All the holes encountered a varying thickness of the zone. Figure 55 shows the geology of DDH-96 115-119.

DDH-96-115 (azimuth 225 deg., dip -45deg.) intersected volcaniclastic from 0-23.17m with a H-1 zone at 17.3-19.63m. This zone is a weak zone of K-spar alteration with minor semi-massive hematite.

DDH-96-116 (azimuth 225 deg., dip -55 deg.) intersected volcaniclastics from 0-40.84m with a weak H-1 zone at 18.9-23.18m. It consists of hematite patches, minor chlorite zones and minor massive sulfide as well as malachite.

DDH-96-117 (azimuth 225 deg., dip -65 deg.) intersected volcaniclastic from 0-48.77m with a weak H-1 zone at 24.50-41.10m. This zone contains a strong hematite stockwork with local massive pyrite veinlets and strong local "chlorite streaming".

DDH-96-118 (azimuth 225 deg., dip -75 deg.) intersected volcaniclastic from 0-67.05m with a weak H-zone at 31.03-50.29m. The zone consists of generally weak hematite stringers, local intense K-spar alteration/silicification and local intense "chlorite streaming". At 35.08-38.15m, pyrite veinlets along fractures form up to 15% of the section.

DDH-96-119 (azimuth 225 deg., dip -85 deg.) intersected volcaniclastic from 0-93.57m with a weak H-zone from 42.9-62.2m. The zone consists of local strong K-spar alteration. Locally narrow hematite stringers, minor pyrite veinlets and local strong chloritic zones.

DDH-96-120-123 were drilled off the same pad along the same azimuth to test the H-1 zone below DDH-96-68-73. DDH-96-120 was abandoned after the rods just stuck. The holes were collared west of the S-2B zone and all three holes intersected both the S-2b and H-1 zones. Figure 45 shows the geology of DDH-96-120-123.

DDH -96-120 (azimuth 45 deg., dip -72 deg.) intersected volcaniclastics from 0-55.17m with the S-2b zone at 5.2-6.3m. The core was logged but not assayed and DDH-96-121 was drilled as a replacement hole.

DDH-96-121 (azimuth 45 deg., dip -72 deg.) intersected volcaniclastic 0-124.38m with the S-2B zone 10.06-11m and the H-1 zone at 67.9-79.2m. The S-2B zone consists of a section of black chlorite and hematite stringers along with blebs of coarse pyrite in brecciated chloritic rocks. The H-1 zone is generally weakly mineralized section with narrow hematite and pyrite stringers in locally intense chlorite alteration. Narrow hematite stringers and pyrite veinlets are present between the two zones.

DDH-96-122 (azimuth 45 deg., dip -76 deg.) intersected volcaniclastic from 0-121.97m with the S-2B zone at 8-9.25m and the H-1 zone at 71.2-88.92m. The S-2B zone consists of fine hematite veinlets in K-spar altered and foliated chloritic rock. The H-1 zone contains generally weak semi-massive hematite in intensely K-spar and silicified rock. A semi-massive hematite zone at 85.2-86.92m is part of the H-1 zone and is divided from the H-1 zone at 71.2-74m by a section of volcaniclastic.

DDH-96-123 (azimuth 45 deg., dip -80 deg.) intersected volcaniclastic at 0-6.2, 11-20.90, 41.8-63.6, 68.4-85 and 90.2-121.8m, hornblende porphyry at 20.94-41.8, 63.6-68.4 and 121.8-137.16m, the S-2B zone at 9.64 to 11m and the H-1 zone at 77.8-79.1m and 85-90.2m. The S-2b zone consists of semi-massive hematite bound on both sides by zones of "chloritic streaming" at 6.2-9.64 and 12-14m. Narrow semi-massive pyrite veinlets occur between the S-2B and H-1 zones. The latter zone consists of intense K-spar alteration with minor hematite as stringers and veinlets.

DDH-96-124-126 were drilled off the same pad along the same azimuth to test the H-1 zone beneath holes 26-29 and 80-86. The holes were collared in the S-2A zone and all intersected the H-1 zone. Figure 45 shows the geology of DDH-96-124-126.

DDH-96-124 (azimuth 45 deg., dip -72 deg.) intersected volcaniclastic from 0-68.1m, the H-1 zone at 68.1-85m and hornblende porphyry at 85-123.74m. The S-2A zone at 4.1-13.8m was only partially tested with the section intersected consisting of strongly brecciated rock with strong "chloritic streaming". The H-1 zone consists of massive pyrite veins, massive to semi-massive hematite stringers and zones of intense K-spar alteration. Abundant "chlorite streaming" was noted at 19.6-70, 65.6-68.1 and 119-121.8, generally with minor coarse pyrite patches.

DDH-96-125 (azimuth 45 deg., dip -76 deg.) intersected hornblende porphyry from 0-159.71m with the S-2A zone at 4.88-7.23m and the H-1 zone at 109.5-111.2m. The S-2A zone consists of intensely K-spar altered rocks, brecciated with black chlorite and pyrite in the matrix. The H-1 zone is weakly K-spar altered with narrow massive hematite veinlets. Abundant "chloritic streaming" was noted at 4.88-7.23, 12.5-16.6, 68.5-77, 88.4-91.2, 109.5-111.2 and 125.5 124.8m. A narrow semi-massive hematite veinlet was noted at 134.9-135.15m.

DDH-96-126 (azimuth 45 deg., dip -80 deg.) intersected hornblende porphyry from 0-18.7, 30.1-163.57 with volcaniclastic from 18.7-30.1 and 163.57-175.56m. Strong "chloritic streaming" is found throughout with sections at 3.41-11.93, 54.38-57.2, 92.1-96.3, 101.5-102.56, 119.00-123.05 and 145.90-146.9m. A narrow shear zone was noted at 118.5-119m. The S-2A zone consists of intensely K-spar. The altered clasts in black chloritic matrix and pyrite as stringers and patches. The H-1 zone is a narrow zone of K-spar alteration with stringers of pyrite and minor chalcopyrite associated with moderate hematite veining at 145.9-149.8m.

Appendix III shows the compiled drill logs for DDH-96-14-126 including assay intervals and results. For holes DDH-96-14-46, the entire holes were assayed with intervals either reflecting lithology or mineralization. The maximum interval analyzed was generally 1.5m in length. For DDH-96-47-126, sampling was more selective with un-mineralized material or certain lithologies not being assayed. Based on the results of the analyses assay results greater than 1 gpt are compiled in Appendix V. Figures 55-84 show the compiled assay results with greater than 1 gpt Au. Assay results that show greater than 2 gpt gold and significant cobalt intersections (greater than 0.01%) are compiled in the table below.

## TABLE 6

## Compiled Assay Intersections in the Drill Holes

| Drill Hole | Azimuth | Dip | Zone | From (m) | To (m) | Width (m) | Au (g/t) | Au (opt) | Co% | Au Equivalent (opt) |
|---|---|---|---|---|---|---|---|---|---|---|
| CL96-14 | 225 | -45 | S | 40 | 41 | 1 | 25.32 | 0.74 | 0.01 | 0.75 |
| CL96-15 | 225 | -45 | S | 73 | 78.5 | 5.5 | 6.29 | 0.18 | | |
| including | | | | 73 | 74.5 | 1.5 | 15.12 | 0.44 | 0.07 | 0.51 |
| | | | | 99 | 100.5 | 1.5 | 8.44 | 0.25 | 0.26 | 0.51 |
| CL96-16 | 225 | -65 | H-1 | 14.5 | 20.5 | 6 | 2.79 | 0.08 | | |
| including | | | | 19 | 20.5 | 1.5 | 6.28 | 0.18 | | |
| CL96-18 | 200 | -55 | S | 100 | 130 | 30 | 12.32 | 0.36 | 0.09 | 0.45 |
| including | | | | 123 | 128 | 5 | 61.32 | 1.80 | 0.31 | 2.11 |
| CL96-19 | 200 | -65 | H-1 | 11 | 13 | 2 | 9.13 | 0.27 | | |
| including | | | | 12 | 13 | 1 | 13.22 | 0.39 | | |
| CL96-23 | 45 | -65 | H-1 | 27.5 | 29 | 1.5 | 28.83 | 0.84 | | |

| Drill Hole | Azimuth | Dip | Zone | From (m) | To (m) | Width (m) | Au (g/t) | Au (opt) | Co% | Au Equivalent (opt) |
|---|---|---|---|---|---|---|---|---|---|---|
| including | | | H-1 | 40 | 41 | 1 | 17.26 | 0.50 | | |
| CL96-24 | 45 | -75 | H-1 | 72 | 73 | 1 | 16.63 | 0.49 | 0.06 | 0.55 |
| including | | | | | | | | | | |
| CL96-25 | 45 | -80 | H-1 | 88 | 91.66 | 3.66 | 21.87 | 0.64 | 0.08 | 0.72 |
| including | | | | 90.41 | 91 | 0.59 | 80.32 | 2.34 | 0.20 | 2.54 |
| CL96-27 | 225 | -55 | H-1 | 49 | 55 | 6 | 4.88 | 0.14 | 0.02 | 0.16 |
| including | | | S-2b | 59 | 65 | 6 | 1.29 | 0.04 | 0.02 | 0.06 |
| CL96-28 | 225 | -65 | H-1 | 88 | 90.68 | 2.68 | 5.56 | 0.16 | 0.08 | 0.24 |
| CL96-30 | 45 | -69 | | 358.5 | 361.5 | 3 | 3.95 | 0.12 | 0.00 | 0.12 |
| CL96-32 | 225 | -55 | S-2a | 27 | 29.9 | 2.9 | 5.32 | 0.16 | 0.00 | 0.16 |
| including | | | | | | | | | | |
| CL96-35 | 240 | -45 | S-2a | 7 | 10 | 3 | 4.16 | 0.12 | 0.01 | 0.13 |
| including | | | | 27 | 29.87 | 2.87 | 4.09 | 0.12 | 0.00 | 0.12 |
| CL96-40 | 225 | -45 | H-1 | 36.5 | 39.5 | 3 | 2.01 | 0.06 | 0.01 | 0.07 |
| including | | | S | 46.5 | 46.95 | 0.4 | 20.2 | 0.59 | 0.00 | 0.59 |
| | | | | 83 | 84 | 1 | 5.88 | 0.17 | 0.04 | 0.21 |
| CL96-41 | 225 | -55 | | 25 | 26 | 1 | 13.03 | 0.38 | 0.02 | 0.40 |
| including | | | H-1 | 50.85 | 55.27 | 4.42 | 15.42 | 0.45 | 0.08 | 0.53 |
| | | | S | 73.5 | 14.7 | 1.22 | 12.68 | 0.37 | 0.01 | 0.38 |
| | | | S | 947 | 98 | 3.3 | 2.74 | 0.08 | 0.02 | 0.10 |
| | | | S | 110.35 | 112.3 | 1.97 | 3.63 | 0.11 | 0.02 | 0.13 |
| | | | S | 118 | 118.8 | 0.8 | 18.51 | 0.54 | 0.01 | 0.55 |
| | | | S | 162.13 | 163.5 | 1.37 | 5.91 | 0.17 | 0.05 | 0.22 |
| CL96-43 | 225 | -75 | S | 190.06 | 206.06 | 16 | 3.41 | 0.10 | 0.02 | 0.12 |
| including | | | | 198 | 299 | 1 | 16.3 | 0.69 | 0.06 | 0.75 |
| CL96-44 | 225 | -60 | H-1 | 63.12 | 67 | 3.89 | 6.85 | 0.20 | 0.12 | 0.32 |
| including | | | S | 65 | 66 | 1 | 14.05 | 0.41 | 0.34 | 0.75 |
| | | | S | 128 | 137 | 8 | 3.08 | 0.09 | 0.09 | 0.18 |
| | | | S | 129 | 130 | 1 | 14.7 | 0.43 | 0.21 | 0.64 |
| CL96-56 | 225 | 50 | S-2a | 120 | 122.61 | 2.61 | 2.57 | 0.075 | 0.019 | 0.094 |
| | | | S | 137 | | 140 | 2.23 | 0.63 | - | 0.063 |
| CL96-57 | 225 | 60 | S-2a | 86 | 89 | 3 | 2.32 | 0.67 | 0.019 | 0.086 |
| | | | S | 110 | 110.9 | 0.9 | 4.01 | 0.117 | 0.035 | 0.152 |
| CL96-58 | 40 | Lost | | | | | | | | |
| CL96-59 | 40 | 45 | S-2a | 19 | 20.5 | 1.5 | 3.32 | 0.097 | - | 0.097 |
| | | | S-2b | 60 | 66 | 6.0 | 3.87 | 0.113 | 0.032 | 0.145 |
| CL96-60 | 40 | 60 | S-2a | 32.5 | 35.81 | 2.81 | 4.82 | 0.140 | - | 0.140 |
| | | | S-2b | 69.75 | 71.22 | 2.07 | 1.69 | 0.055 | 0.030 | 0.085 |
| | | | H-1 | 91.5 | 95 | 4.5 | 1.71 | 0.050 | - | 0.050 |
| CL96-61 | 225 | 45 | H-1 | 45.73 | 46.91 | 2.81 | 4.01 | 0.117 | - | 0.117 |
| | | | S-2a | 59.82 | 60.55 | 0.73 | 8.80 | 0.259 | 0.123 | 0.382 |
| | | | S | 73 | 74 | 1 | 2.29 | 0.067 | - | 0.067 |
| CL96-63 | 225 | 45 | H-1 | 48 | 51 | 3 | 5.95 | 0.173 | - | 0.173 |
| | | | S-2a | 74 | 77 | 3 | 2.12 | 0.062 | 0.023 | 0.085 |
| | | | S | 107.5 | 112 | 4.5 | 3.28 | 0.092 | - | 0.092 |
| CL96-64 | 225 | 60 | H-1 | 70 | 71 | 1 | 4.12 | 0.120 | - | 0.120 |
| CL96-65 | 225 | 45 | H-1 | 60 | 60 | 1 | 3.42 | 0.100 | - | 0.100 |
| | | | S-2a | 108.5 | 111 | 2.5 | 2.66 | 0.078 | - | 0.078 |
| | | | S | 123.5 | 124 | 0.5 | 30.67 | 0.894 | - | 0.894 |
| CL96-66 | 225 | 60 | S-2a | 96.89 | 101 | 4.11 | 1.76 | 0.033 | 0.060 | 0.093 |
| CL96-68 | 43 | 45 | H-1 | 5.5 | 8.2 | 2.7 | 44.32 | 1.293 | | 1.293 |
| CL96-69 | 43 | 50 | H-1 | 6 | 8.7 | 2.7 | 11.12 | 0.32 | | 0.32 |
| CL96-71 | 43 | 60 | H-1 | 9.83 | 16.5 | 0.73 | 23.82 | 0.69 | | 0.69 |
| CL96-72 | 43 | 70 | H-1 | 14.53 | 22.91 | 8.4 | 13.02 | 0.38 | | 0.38 |
| CL96-74 | 43 | 45 | H-1 | 2 | 3.93 | 1.93 | 10.37 | 0.30 | | 0.30 |
| CL96-75 | 43 | 55 | H-1 | 5.5 | 7.5 | 2 | 10.18 | 0.297 | | 0.297 |
| CL96-76 | 43 | 65 | H-1 | 6.5 | 8.5 | 2 | 9.16 | 0.26 | | 0.26 |
| CL96-77 | 43 | 75 | H-1 | 10 | 16.07 | 6.07 | 10.86 | 0.317 | | 0.317 |

| Drill Hole | Azimuth | Dip | Zone | From (m) | To (m) | Width (m) | Au (g/t) | Au (opt) | Co% | Au Equivalent (opt) |
|---|---|---|---|---|---|---|---|---|---|---|
| CL96-78 | 43 | 85 | H-1 | 17.8 | 22 | 4.2 | 6.68 | 0.195 | 0.027 | 0.222 |
| CL96-79 | 43 | 80 | H-1 | 145 | 20 | 5.5 | 3.15 | 0.092 | 0.054 | 0.146 |
| CL96-80 | 40 | 45 | H-1 | 14.93 | 15.82 | 0.89 | 4.36 | 0.127 | 0.039 | 0.168 |
| CL96-81 | 40 | 55 | H-1 | 17.75 | 18.75 | 1 | 20.09 | 0.588 | 0.114 | 0.700 |
| CL96-82 | 40 | 65 | H-1 | 19.45 | 20.5 | 1.05 | 11.36 | 0.331 | 0.022 | 0.353 |
| CL96-84 | 40 | 85 | H-1 | 27 | 30 | 3 | 1.90 | 0.055 | - | 0.055 |
| | | | | 625 | 66 | 3.5 | 32.16 | 0.901 | 0.053 | 0.954 |
| CL96-85 | 40 | 80 | H-1 | 54.5 | 62 | 7.5 | 11.51 | 0.044 | 0.032 | 0.076 |
| CL96-86 | 36 | 45 | H-1 | 10 | 11 | 1 | 4.2 | 0.122 | 0.049 | 0.171 |
| CL96-87 | 36 | 55 | H-1 | 14.87 | 16.5 | 1.68 | 3.38 | 0.102 | 0.077 | 0.179 |
| CL96-91 | 218 | 45 | H-1 | 2.5 | 18 | 15.5 | 7.6 | 0.223 | - | 0.223 |
| including | | | | 2.5 | 7 | 4.5 | 18.44 | 0.538 | - | 0.538 |
| CL96-92 | 218 | 55 | H-1 | 3.5 | 11 | 7.5 | 6.06 | 0.177 | - | 0.177 |
| CL96-95 | 218 | 85 | H-1 | 90 | 96 | 6 | 8.23 | 0.240 | 0.131 | 0.371 |
| CL96-96 | 225 | 45 | S | 23 | 24 | 1 | 3.58 | 0.104 | 0.076 | .18 |
| CL96-98 | 225 | 65 | S | 9.45 | 10.45 | 1 | 5.11 | 0.149 | 0.024 | 0.151 |
| CL96-100 | 225 | 85 | S | 17.37 | 18.65 | 1.02 | 5.18 | 0.151 | 0.03 | 0.18 |
| | | | S | 47.95 | 52 | 4.05 | 14.05 | 0.41 | 0.17 | 0.58 |
| | | | S | 76 | 78 | 2 | 4.03 | 0.117 | 0.01 | 0.127 |
| CL96-102 | 241 | 55 | S | 5 | 6 | 1 | 11.94 | 0.348 | | 0.348 |
| CL96-105 | 195 | 45 | S | 10 | 11 | 1 | 5.28 | 0.154 | 0.03 | 0.184 |
| CL96-106 | 195 | 55 | S | 27 | 28 | 1 | 4.14 | 0.12 | | 0.12 |
| CL96-110 | 225 | 45 | H-1 | 3 | 13 | 10 | 43.81 | 1.278 | | 1.278 |
| includes | | | | 7 | 10.5 | 3.5 | 116.2 | 3.34 | | 3.34 |
| CL96-111 | 225 | 55 | H-1 | 15 | 18 | 3 | 4.39 | 0.128 | | 0.128 |
| CL96-113 | 225 | 75 | H-1 | 40.5 | 44 | 3.5 | 1.71 | 0.05 | | 0.05 |
| CL96-115 | 225 | 45 | H-1 | 19 | 19.6 | 0.6 | 14.22 | 0.415 | | 0.415 |
| CL96-116 | 225 | 55 | H-1 | 22 | 24 | 2 | 8.67 | 0.253 | | 0.253 |
| CL96-118 | 225 | 75 | H-1 | 42 | 46 | 4 | 4.01 | 0.117 | | 0.117 |
| CL96-121 | 45 | 72 | H-1 | 73 | 78 | 5 | - | - | 0.054 | 0.054 |
| CL96-122 | 45 | 76 | H-1 | 72 | 73 | 1 | 7.54 | 0.22 | 0.036 | 0.26 |
| | | 76 | H-1 | 85.2 | 88 | 2.8 | 3.29 | 0.096 | 0.086 | 0.18 |
| | | 76 | H-1 | 112 | 113 | 1 | 18.85 | 0.55 | 3 | 0.85 |
| CL96-123 | 45 | 80 | S-2b | 12 | 13 | 1 | 18.85 | 0.55 | | 0.55 |
| CL96-124 | 45 | 72 | S-2a | 9.6 | 14 | 4.4 | 5.75 | 0.168 | | 0.168 |
| | | | S-2b | 22 | 23 | 1 | 4.45 | 0.130 | | 0.130 |
| | | | H-1 | 75 | 82 | 7 | 14.63 | 0.427 | | 0.427 |
| CL96-125 | 45 | 76 | S-2a | 2 | 3 | 1 | 7.74 | 0.226 | | 0.226 |
| | | | S-2a | 4.88 | 7.23 | 2.34 | 4.49 | 0.131 | | 0.131 |
| | | | S-2b | 18 | 20 | 2 | 12.93 | 0.377 | | 0.377 |
| | | | | 25.9 | 28 | 2.1 | 7.34 | 0.214 | | 0.214 |
| CL96-126 | 45 | 80 | S-2a | 3.4 | 4.4 | 1.0 | 38.87 | 1.134 | | 1.134 |
| | | | S-2a | 7.9 | 12 | 4.1 | 4.83 | 0.141 | | 0.141 |
| | | | S-2b | 33 | 35 | 2 | 4.49 | 0.131 | | 0.131 |
| | | | | 54.4 | 56.6 | 2.2 | 8.02 | 0.234 | | 0.234 |
| | | | H-1 | 99 | 102.6 | 3.6 | 5.96 | 0.174 | | 0.174 |
| | | | | 146 | 147 | 1 | 6.85 | 0.2 | | 0.2 |

The drill hole intersections of the various gold bearing zones indicates that the structures pinch and swell along strike and dip. In addition, analyses indicate that gold values can be quite variable along the structures ranging from high multi-ounce assays over meters down to hundreds of ppb over narrow intervals. Drilling has indicated that gold value occur along discrete zones within the structures, generally with shallow dips to the NW. This is certainly true for DDH 96-41 and 44, where a massive hematite/magnetic/sulfide intersection appears to correspond with mineralizing in trenches 70 and 91. Another case where this appears to be true is in DDH-96-26-27 and 59 and 60 which intersected the S-2b zone to the north and below the zone exposure in trenches 10 and saw cut 20. In addition, the Down Hole IP survey indicates that extension to some of the zones is to the west of the drill holes, particularly for the S-zone in DDH-96-18 and the S-2a zone in DDH-96-29.

Overall, the drilling successfully extended the H-1 zone to depth, particularly in the area of DDH-96-25 and 30. It appears that the H-1 zone becomes more sulfide rich and more hematite poor at depth as indicated by holes DDH-96-25, 30, 95 and 126. Unfortunately, not enough holes tested the H-1 zone at depth and to the south of trench 78.

Wide spaced holes, both along strike and long section tested the S-structures. More holes are required, particularly in the area of DDH-96-18 and 43 to further test the S-zone.

Drilling indicated that the S-2a zone is present over a strike length of 300m and to a depth of at least 150m. The holes are too widely spaced on this structure at present and more drilling is required in the area of the S-2a zone.

Drilling also indicated the existence of a stringer zone in some of the holes located to the north of DDH-96-86-90 and trenches 20-23.

This stringer zone has yielded spotty gold values over widths of u to 1m in surface trenching and saw cuts. Values of 1-3 gpt gold were obtained in sections up to 2m in some of the drill holes, particularly DDH-96-61-66. It may well be that the above zone is a northward extension of the S-2b structure as it is present between the H-1 and S-2a zones.

The drilling also indicated the possible existence of an intrusive at depth below DDH-96-25 and 30. In this area sericite/pyrite alteration is located below intensely hematite altered at surface.

These are the only holes that show this type of alteration over large intersections.

It is recommended that further drilling be conducted to more adequately define the gold bearing zones within the various structures. A total of 10,000m is required for the area of the main zones with another 5,000m required to test other structures in the property area.

## RESERVES

A preliminary resource calculation was undertaken on the various zones, principally the H-1 and S-2a as well as the S and S-2b structures. The calculation was completed using the 126 completed drill holes, the surface trenching and some of the saw cut sampling. The date enables a mineral resource to be "blocked out" in the drill indicted and geologically inferred categories.

These blocks are shown in Figures 85-89 for the various gold bearing zones. The methods and criteria used in the resource calculation are outlined below.

Using all the information gained from drill hole intersections, surface trenching and some saw cut sampling, the area of influence or "blocks" were assigned an average gold grade. Each vein intersection in the drill holes used for the calculation was recalculated to its true width as opposed to *its intersected width. Veins tested by surface trenches were weighted according to* their true width. The true structure lengths as measure from surface trenching was used. Grades of these surfaces trenches were derived from chip samples taken across the face of the trench cuts. Intermediate chip sample lines in a particular structure were projected halfway to the next intersection point.

Each "block" was weighted according to the projected length, height and true width. By summing this product for each block and multiplying by a specific gravity factor of 3.3, a total tonnage was arrived at for each "block". The specific gravity factor was arrived at by measuring core from both H-1 and S-zone intersections. A total of at least 15 measurements were made on core from the H-1 and at least 10 measurements from the S-zone with values ranging from 3.1 to *a high 0f* 3.4. *The tonnage for each "block" was multiplied by the average grade determined* above to calculate the total number of grams for the various blocks. Adding all the tonnage figures and total gross yields the total number of tons, the total grams and ultimately the average grade for resource category.

The table below shows the "blocks" for the various zones.

## TABLE 7

## Compiled Reserve Totals With Average Grade

| Longitudinal Section | Block No. | Intersection Points | Length (m) | Height (m) | Width (m) | Tonnes | Average Grade Au (gpt) | Average Grade Co (%) | Total Grams Gold |
|---|---|---|---|---|---|---|---|---|---|
| 1 | S-2 | Trench 8 + 205 | 40 | 10 | 5.15 | 6798 | 3.97 | 0.17 | 26.988 |
| 1 | S-2a | Trench 82 + 207<br>DDH-15 & 16 | 80 | 12 | 5.23 | 16,568 | 6.14 | 0.1 | 86,650 |
| 1 | S-2b | DDH-43 | 85 | 15 | 4.1 | 17,250 | 3.41 | 0.02 | 58,822 |
| 1 | S-2C | DDH-41 | 25 | 10 | 1.1 | 907 | 3.63 | 0.02 | 3292 |
| | | | | | **Total Tonnes:** | **41,523** | | **Total Grams:** | **175,752** |
| | | | | | | | | | |
| 2 | H-3a | DDH-41, 44<br>Trench 69, 91 | 55 | 17 | 1.83 | 5646 | 12.13 | 12.13 | 68,485 |
| | | | | | **Total Tonnes:** | **5646** | | **Total Grams:** | **68,485** |
| | | | | | | | | | |
| 3 | | DDH-18<br>Trench 1,64, 52<br>(Average of trench 64-152-.163 opt Au across 16m) | 100 | 20 | 16.42 | 108,372 | 9.15 | 0.07 | 991,603 |
| | | | | | **Total Tonnes:** | **108,372** | | **Total Grams:** | **991,603** |

| Longitudinal Section | Block No. | Intersection Points | Length (m) | Height (m) | Width (m) | Tonnes | Average Grade Au (gpt) | Average Grade Co (%) | Total Grams Gold |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| 4 | H-1 | Trench 114 | 13 | 7 | 7.5 | 2252 | 26.05 | | 58,664 |
| 4 | H-2 | DDH 21, 45, 116 | 13 | 13 | 1.77 | 987 | 5.27 | | 5201 |
| 4 | H-3 | DDH 23, 118 | 13 | 18 | 0.83 | 641 | 13.44 | | 8615 |
| 4 | H-5 | DDH 11, 111 | 11 | 18 | 5 | 2178 | 9.22 | | 20,081 |
| 4 | H-6 | DDH 112, 113 | 11 | 45 | 0.294 | 480 | 3.91 | | 1,876 |
| 4 | H-7 | DDH-25 | 19 | 10 | 1.68 | 1053 | 9.69 | | 10,203 |
| 4 | H-8 | DDH-95-7-9, 90-93 & trench 4 | 12.5 | 31 | 3.51 | 4488 | 35.27 | | 158,291 |
| 4 | H-9 | DDH, 94-96 | 12.5 | 72 | 0.99 | 2940 | 2.82 | | 2910 |
| 4 | H-10 | DDH-3-6, trench 12, 80 | 18 | 41.5 | 4.21 | 10,378 | 9.38 | | 97,345 |
| 4 | H-11 | Trench 11 DDH 68-72 | 19 | 26 | 2.38 | 3879 | 15.41 | | 59,775 |
| 4 | H-12 | DDH-122 | 21 | 10.5 | 3.56 | 2590 | 1.03 | | 2667 |
| 4 | H-13 | DDH-74-79 Trench 13 | 11.5 | 35 | 1.66 | 2013 | 6.99 | | 14,070 |
| 4 | H-14 | DDH-80-82 | 17 | 22 | 0.55 | 679 | 11.7 | | 7944 |
| 4 | H-15 | DDH 84-85, 27, 124-126 | 21 | 64 | 4.28 | 18,982 | 3.23 | | 61,312 |
| 4 | H-16 | DDH-86-87 Trench 20 | 19 | 12.5 | 2.54 | 1991 | 4.2 | | 8362 |
| 4 | H-17 | DDH-59 Trench 21 | 38 | 50 | 2 | 12,540 | 7.6 | | 95,304 |
| 4 | H-18 | DDH 57, 60 | 58 | 38.5 | 1.73 | 13748 | 1.84 | | 23,456 |
| 4 | H-19 | DDH-62 | 58 | 20 | 2.7 | 10,336 | 3.26 | | 33,695 |
| 4 | H-20 | DDH-64, 65 | 48 | 57.5 | 1.28 | 11,658 | 5.63 | | 65,634 |
| 4 | H-21 | Trench 21 | 18 | 5 | 8 | 2376 | 30.85 | | 73,299 |
| 4 | H-22 | DDH-19 | 18 | 4 | 0.85 | 202 | 9.12 | | 1842 |
| Not Plotted | H-2a | Trench 16, 55, 56 | 25 | 15 | 1.5 | 1856 | 89.76 | | 166,595 |
| Total H-zone including H-3a and H-2a drill indicated 118,331 at 9.87 grams/ton. | | | | | | | | | |
| 5 | S-1 | Trench 23, Saw cut 6-10 DDH-124-126 | 42.5 | 33 | 2.79 | 12,940 | 3.44 | | 44,513 |
| 5 | S-2 | DDH-28 | 22 | 19 | 0.64 | 883 | 5.56 | | 4909 |
| 5 | S-3 | DDH 31-33, 59-60 Trench 25 | 55 | 59 | 1.46 | 15,677 | 14.88 | | 233,274 |
| 5 | S-4 | DDH-56 | 42 | 40 | 1.6 | 8870 | 3.85 | | 34,150 |
| 5 | S-5 | Trench 26 | 18 | 5 | 1.75 | 520 | 15.42 | | 194,146 |
| 5 | S-7 | DDH-63 | 50 | 50 | 3.18 | 26,235 | 3.18 | | 83,427 |
| 5 | S-8 | Trenches 34, 37, 200 - 204, 214-25 | 135 | 15 | 1.99 | 12,964 | 10.9 | | 141,307 |
| | | | | | **Total Tonnes:** | **96,654** | | **Total Grams:** | **763,567** |
| 6 | S-2c | Saw Cut 20 Trench 14,19 DDH 60, 120-123 | 25 | 25 | 1-37 | 2825 | 33.3 | | 94,072 |
| 6 | S-2d | DDH-124-126, 56, 60 | 110 | 30 | 1.61 | 17,532 | 2.87 | | 50,316 |
| | | | | | **Total Tonnes:** | **20,357** | | **Total Grams:** | **144,388** |

In addition to the drill indicated resource, a geologically inferred resource was calculated for the H-1 and S-2a zones. For the H-1 zone, a geologically inferred resource totaling 88,221 tons at

7.6 gpt has been calculated. For the S-2a zone, a geologically inferred resource totaling 73,917 tons at 11.58 gpt has been calculated. The following table summarizes all reserves to date.

**TABLE 8**

**Total Reserves - Clone Project**

| **Zone** | **Reserve Category** | **Total Tons** | **Average Grade Au** | **Average Grade Co %** | **Total Grams** |
|---|---|---|---|---|---|
| S- | Drill indicated | 149,895 | 7.89 | 0.07% | 1,182,433 |
| H-1 | Drill indicated | 115,612 | 9.87 | | 1,113,242 |
| | Geologically inferred | 88,221 | 7.6 | | 670,480 |
| S-2a | Drill indicated | 96,918 | 7.96 | | 771,650 |
| | Geologically inferred | 73,917 | 11.58 | | 855,959 |
| S-2b | Drill indicated | 20,357 | 7.09 | | 144,388 |
| | | | | | |
| | **Total Tonnes:** | **544,920** | | **Total Grams:** | **4,738,152** |

Based on the above total reserves, the average grade is calculated at 8.70 gpt Au if all the zones are included. The cobalt results were not calculated for the S-2A zone due to variable nature of the assay results. However with closer spaced drilling in this zone, a cobalt resource will probably be outlined.

To date, the results have indicated an excellent potential for the development of additional reserves. Further drilling is recommended in the area of DDH-96-60-67 and below DDH-96,25 and 95 and above DDH-96-30 in order to further delineate reserves in the H-1 zone. Drilling is also recommended in the area of DDH-41 and 44 and just north of trench 81 to possibly add to the H-1 reserve totals for these areas.

Further drilling is required along the S-2A zone to delineate the resource indicated along the structure. It is expected that additional reserves will be outlined both along strike and at depth.

The drilling indicated the potential for open pit reserves in the area of holes 96-120-126 and 68-86. These reserves would be contained in an area 40m long by 30m wide and down to a depth of 30m. Indicated values are in the order of 3-6 gpt per ton. These resources would be within the S-2A, S2B, H-1 and mineralized stringer zones.

DDH-96-56-64 contain sections that correspond to the Stringer zone located between the H-1 zone and S-2A zone. This Stringer zone may well correspond to the north extension of the S-2B zones. In trench 204, 0.339opt Au was obtained across 1m. In some of the above holes 1-3gpt Au values were obtained over 1-2m intersections.

In addition, deep holes should be drilled north of DDH-67 to test for the H-1 and S-2A zone in the foot wall area of mapped high angle reverse faults. If the zones extend north of the present drilling beneath the faults, then the potential for enhancing the present resource calculation is excellent.

## CONCLUSIONS

1. The property lies within a belt of Jurassic volcanic rocks, host to numerous gold deposits, extending from the Kitsault area, south of Stewart, to north of the Stikine River.

2. In the period June to October 1996, an extensive exploration program was conducted on the property including

   **A total of 11, 487.14 m of diamond drilling (7652.44 m of BTW size and 834.7m of NQ2 size).**

   **A total of 1312.85 m of trenching in 141 separate trenches, as well as extensions to trenches (121.4 m in 8 trenches on Sutton zone and 1191.45 m in 133 trenches on main Clone zone)**

   **A total of 392 samples taken in the course of a regional geochemical program.**

   **Gridding and location of a permanent base line. A total of 65.3 line kilometers of grid was established with crosslines every 25 m and stations located 25 m along each line.**

   **Surveying of all drill holes and trenches to provide accuracy control as well as elevation control.**

   **A magnetometer survey over the established grid.**

   **Geological mapping of the nunatak hosting the Clone gold occurrence at a scale of 1:2,000, as well as mapping the immediate area of the gold showings at a scale of 1:500. Preliminary mapping of the Sutton zone was also completed.**

   **Downhole IP surveys in 5 separate drill holes, to test for extensions of mineralization encountered in the holes or nearby areas.**

   **Petrographic studies on sulfide mineralization, both in drill holes and surface trenches.**

   **Structural study in the immediate area of the S. and H. mineralized zones.**

**Saw-cut sampling to confirm 1995 trench results as well as check sulfide-hematite rich zones in immediate vicinity of camp.**

3. In the course of the programs, a total of 1539 surface and 8161 core samples were collected and analyzed for metal content by ICP analysis (29 element package) and for gold using atomic absorption methods with fire assaying conducted on elements exceeding the upper detection limits of the first two methods.

4. Mapping of the Clone nunatak indicates that the geology underlying it forms a homoclinal sequence of volcanic and sedimentary strata which strikes southeast, is subvertical with the younger rocks to the southwest.

5. Mapping in the area of the Clone gold-copper-cobalt and gold-copper veins indicates that from southwest to northeast, the geology comprises black siltstone, andesitic to basaltic tuffs, hornblende-biotite porphyry and megabreccia.

6. Alteration is pervasive potassic, chloritic and sericitic and is locally intense.

7. Mapping has shown that high angle reverse faults to the north of the drilled areas have obscured the north extension of the H. and S. zones.

8. The mineralization is hosted by steeply dipping, sub-parallel, en echelon, shear controlled veins and stockworks with a northwesterly trend. Mineralization within the area of the Clone gold bearing shears consist of two different and distinct types. The first type of mineralization called the S-zones, consists of massive to semi-massive pyrite/arsenopyrite with chalcopyrite, minor magnetite and hematite occurring as stringers, lenses and stockworks within chloritic, schistose volcanic rocks. The second type called the H- zones consist of zones and stockworks of semi-massive to massive, hematite in wide zones of intense hematite, chlorite and K-spar alteration with local silicification.

9. To date, 3 separate H-zones, namely H-1, H-2 and H-3 have been identified as well as numerous hematite dominated stringer zones and 1 main S zone with the S-2A zone appearing to be a north extension of the S-zone. The S-2B zone is a relatively short hematite-sulfide zone that appears to be a mixed zone containing both S-type and H-type mineralization. The Stringer zone may well be a northern extension of the S-2B zone.

10. The sulfide dominated mineralization (S and S-2A)prevails in the southwestern portion of the trenched area with the hematite dominated structures (H-1, H-2 and H-3), occurring northeast of the sulfide bearing structures. Of particular interest is the fact that much of the hematite mineralization on the Clone project shows many similarities to the Olympic Dam deposit.

11. Results of the trenching indicated significant gold values over significant widths and lengths as well as outlining new zones. The best trench results in the sulfide zones were from Trench 95, 99 (both S-zones) and 195 (S-2A zone) which yielded 2.617 opt gold and 0.768% cobalt across 2.2 meters, 0.703 opt gold and 0.073% cobalt across 5.7 meters and 0.58 opt Au and 0.068% Co respectively. The best trench results in the hematite zones were from Trench 91 (H-1 zone) and 100 (H-3 zone)which yielded 0.966 opt gold across 0.75 meters and 2.328 opt gold across 1.0 meters respectively.

12. Results from the trenching on the Sutton zone indicate significant gold values associated with high arsenic, copper and local high cobalt values similar to that for the Clone system. This indicates that the gold-cobalt system within the property area has a potential strike length of at least 5.5 km.

13. Saw-cut sampling was conducted in the areas of Trench 11 and 13 to verify the 1995 trench results. A good correlation was obtained between the 1995 chip sampling and 1996 saw-cut sampling. In addition, 22 cuts were completed over mineralized stringer zones in the immediate area of the camp. Sampling indicated anomalous to significant gold results up to 5.202 opt Au across 0.9m.

14. Geological mapping in combination with trenching indicates that hematite rich zones containing chalcopyrite and occasionally magnetite extend at least an additional kilometer beyond the 1996 drill area.

15. The magnetometer survey was conducted over 65.3 line kilometers of grid; approximately 30.3 line kilometers on Kshwan Glacier and 35 line kilometers on the Clone nunatak. Readings varied from a low of 49, 813 to a high of 51, 542 nT. The survey shows a good correlation between the H-1 zone and magnetic anomalies.

16. A structural interpretation undertaken on the Clone project study indicated a dominant trend of rock units, shears and cleavage towards 320 degrees with deformation in the area likely a cyclic brittle-ductile event.

17. The petrographic studies on the sulfide filled shears indicates that the gold is primarily associated with arsenopyrite and to a lesser extent pyrite and appears to form along micro-fractures within the sulfide grains, late in the paragenetic sequence. The study failed to identify the cobalt bearing mineral.

18. Five drill holes were surveyed using an axial gradient for a directional Down Hole Induced Polarization survey. The survey was successful in identifying IP anomalies coincident with mineralization. Based on the survey, it appears that extension of some of the mineralization may lie at depth and to the west relative to the holes.

19. The drilling on the various shear zones indicates that gold bearing sections and sulfide zones appear to have a shallow plunge towards the northwest.

20. The best results from the H-1 zone are in DDH-110 which intersected 10 m of 1.278 opt Au (43.81 gpt), DDH-93 which intersected 12.2 m of 0.237 opt Au (8.12 gpt), DDH-68 which intersected 2.71 m of 1.293 opt Au (44.51 gpt), DDH-124 which intersected 7.01 m of 0.427 opt Au (14.64 gpt) and DDH-77 which intersected 6.1 m of 0.317 opt Au (10.87 gpt Au).

21. The best results for the S-Zone drilling included DDH-18 which yielded 30 m of 0.36 opt Au (12.32 gpt) and 0.09 % Co, DDH-41 which intersected 7.15 m of 0.525 opt Au (18.01 gpt) and DDH-44 which intersected 3.88 m of 0.20 opt Au (6.99 gpt).

22. Drill results for the H-3 zone were low.

23. The best drill results for the S-2A zone include DDH-126 which intersected 1 m of 1.134 opt Au (38.87 gpt) DDH-60 which intersected 3 m of 0.140 opt (4.80 gpt) and DDH-65 which intersected 0.5 m of 0.894 opt Au (30.65 gpt).

24. Drilling indicated that the H-1 zone extends to at least a 200 m depth as evidenced by the intersection in DDH-30. In addition, small scale westerly trending reverse faults have offset the H-zone 10-15 m in a west direction.

25. Using a gold grade cut-off that is equal to 1 gpt Au across 1 m , a resource calculation was completed for the Clone project. Based on trenches and drill holes to date, a total for all zones (H-1 and 2, S, S-2A and S-2B) and all categories (drill indicated and geologically inferred), 544, 920 tons grading 8.69 gpt (0.25 opt) are indicated.

26. The property has an excellent potential for increased reserves, particularly at depth and along strike of the presently defined mineral zone. Additional drilling in all likelihood will not only increase the tonnage but will also increase the grade.

27. The recommended program would include an IP survey over the area of interest, bulk sampling, trenching, drilling and further geochemistry.

28. Estimated cost of the program is approximately $ 2,000,000.

**RECOMMENDATIONS**

The recommended program would include the following:

1. IP survey over the area of interest, including the C-1 and C-2 structures. The lines would be 50 metres apart with stations every 25 metres. The survey would be designed to outline

possible mineralization at depths exceeding 200m. A total of 60 line kilometers would be surveyed (30 lines; each 2 kilometers long).

2. Bulk sampling along the zones to compare grade based on a larger sample versus that for chip sampling. Based on the limited number of saw-cuts, it appears that larger sample sizes yield better gold grades. A total of 10, one ton sample would be collected: five samples along the H-1 zone, one sample along the H-2 zone, one sample along the S-2B zone and three samples along the S-2A zone. Samples would be taken prior to the start of the drill program so that the material could be flown out on the helicopter return trips. The information received from this program would also aid in further metallurgical studies.

3. Extensive trenching on northwest side of the nunatak to check for extensions of the Clone mineralization, particularly the Anderson zone as well as test the Clone North zone. Trenching on the C-1 zone is required to evaluate geochemical results obtained in the 1996 program.

4. Drilling on down plunge extensions of zones intersected in 1996 to see if some of the gold bearing intersections extend to depth, particularly in the area of DDH96-25,30 and 95. In addition drilling would concentrate on outlining extensions to DDH96-18.

5. Drilling of deep holes to check beneath the high angle reverse faults for possible extensions of the H and S-2 A zones. These holes would be drilled to the east of Trench 195 and test at depths of at least 200m. It is expected that 3 panels of 2 holes each, spaced 100m apart would be required.

6. A second drill would be utilized in order to test other gold bearing structures on the property, particularly the C-1 and C-2 zones as well as the Anderson zone.

7. Expand the geochemical surveys to further evaluate the 1996 results. Surveys would concentrate west and east of the Sutton zone as well as in the immediate area of the Clone mineralization, particularly where rapidly melting glaciers expose more bedrock.

**Estimated Cost of the Program**

| | |
|---|---|
| 1. IP survey. 60 line kilometers at $1500/km all inclusive | 90,000 |
| 2. Bulk sampling-10 samples at $1500/sample to collect | 15,000 |
| 3. Bulk sample processing at $2,000/sample | 20,000 |
| 4. Bulk sample freight to Vancouver | 5,000 |
| 5. Diamond Drilling-10,000m at $100/m includes all aspects (logging, splitting, etc. ). | 1,000,000 |
| 6. Helicopter support-500 hours at $725/hr | 362,500 |
| 7. Accommodation and supplies | 50,000 |

| | | |
|---|---|---|
| 8. Mobilization/demobilization | | 20,000 |
| 9. Trenching, includes dynamite, etc. includes personnel | | 30,000 |
| 10. Assaying-5000 samples at $20/sample | | 100,000 |
| 11. Geochemical survey includes personnel | | 100,000 |
| 12. Report costs | | 50,000 |
| | Total | 1,842,500 |
| | Contingency | 157,500 |
| | **Grand Total** | **2,000,000** |

## REFERENCES

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2. ALLDRICK, D.J. (1985); "Stratigraphy and Petrology of the Steward Mining Camp (104B/1E)", p. 316, Paper 85-1, Geological Fieldwork 1984, B.C.M.E.M.P.R.

3. CREMONESE, D. (1995), "Assessment Report on Geochemical Work on the Red 28, 29,30, 31, Cansado 1 and 2 Claims".

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6. GROVE, E.W. (1982); "Unuk River, Salmon River, Anyox Map Areas. Ministry of Energy, Mines and Petroleum Resources, B.C.

7. GROVE, E.W. (1987); Geology and Mineral Deposits of the Unuk, River-Salmon, River-Anyox, Bulletin 63, B.C.M.E.M.P.R.

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**STATEMENT OF EXPENDITURES***

| | |
|---|---|
| Aircraft (Vancouver Island Helicopters) | $262,157 |
| Assays (Eco-Tech Labs and Pioneer Labs) | 180,487 |
| Camp Supplies | 194,870 |
| Diamond Drilling (J. Thomas Drilling) | 872,230 |
| Engineering | 41,000 |
| Field Personnel (Geologists and Labour) – Period June to October 1996: | 393,859 |
| Supplies & Miscellaneous | 67,400 |
| Report Costs: | |
| Report preparation, compilation and research | |
| E. Kruchkowski, P. Geol. | 23,000 |
| Map preparation | 5,000 |
| Secretarial / work processing | 3,000 |
| Copies, reports, jackets, data entry etc. | 3,000 |
| Total | 2,046,003 |

Allocations:

| | |
|---|---|
| Statement of Exploration #3099262** | $8,000 |
| Statement of Exploration #3099311 | $6,400 |
| Statement of Exploration #3101864** | $1,600 |

Balance remaining to be applied to PAC account of Teuton Resources Corp.

- This report covers the complete 1996 surface program on the Clone property. As such it includes data covered by a previous assessment report filed pursuant to Statements of Exploration #3092385 and 3095790. Costs associated with that report have been deducted from the amounts indicated above.

** At least $9,600 worth of work was carried out on the Port 17 and Port 19 claims.

## CERTIFICATE

I, Edward R. Kruchkowski, geologist, residing at 23 Templeside Bay, N.E., in the City of Calgary, in the Province of Alberta, hereby certify that:

1. I received a Bachelor of Science degree in Geology from the University of Alberta in 1972.

2. I have been practicing my profession continuously since graduation.

3. I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

4. I am a consulting geologist working on behalf of Teuton Resources Corp.

5. This report is based on a review of reports, documents, maps and other technical data on the property area and on my experience and knowledge of the area obtained during programs in 1974 - 1996 and work done by myself on the property.

6. I authorize Teuton Resources Corp. to use information in this report or portions of it in any brochures, promotional material or company reports.

Date: April 15/97

E.R. Kruchkowski, B.Sc.