



**093536**

**REPORT ON THE 1995  
TRENCHING PROGRAM  
ON THE  
HEIDI CLAIMS**

Mayo Mining District, Yukon  
(September 16-27, 1995)

**Claims:** Heidi 1-10 (YB64644-653)

**Location:** 1. 100 km NE of Dawson City, Yukon  
2. NTS 116 A/5  
3. Latitude: 64° 23'N  
Longitude: 137° 38'W

**For:** **HOMESTAKE CANADA INC**  
1000-700 West Hastings Street  
Vancouver, B.C.  
V6E 2E9

**By:** R. Allan Doherty, P. Geo  
**Aurum Geological Consultants Inc.**  
205-100 Main Street  
P.O. Box 4367  
Whitehorse, Yukon  
Y1A 3T5

March 11, 1996

## SUMMARY

The Heidi 1-24 claims are 100% owned by Homestake Canada Inc. The claims are located in the western Selwyn Basin, 55 km northeast of Dawson City, Yukon or 75 km northwest of Mayo, Yukon. The property is accessible by helicopter from either Dawson or Mayo.

The property is underlain by upper Proterozoic and lower Paleozoic Hyland Group grey-green and maroon shales, sandstone, quartz pebble conglomerate and minor limy siltstone. The Hyland Group in this area consists of the Yusezyu Formation and Narchilla Formation. The Yusezyu Formation is comprised of medium to coarse quartz grit, quartzite, and limy siltstone. The Narchilla Formation overlies the Yusezyu Formation conformably and consists of variegated maroon and green shale. A broad magnetic low in the area of the Heidi claims suggests a buried intrusion. One small porphyritic dyke was located on the Heidi 1 and 2 claims.

Reconnaissance exploration led to the discovery of pyrite arsenopyrite and stibnite mineralization replacing porous grit units and limy siltstones near the nose of an asymmetrical fold at the northeast end of the prominent ridge over which the Heidi Claims were staked.

Blast trenching in late September of 1995 was completed on the Heidi 9 claim. Results of the trenching include: 2.06 gm/t Au over 1.0 m in Trench 95-3 and 2.93 gm/t Au over 1.0 m in Trench 95-5; and three samples from outside the trenches that returned assays between 2-3 gm/t Au.

## TABLE OF CONTENTS

	page
SUMMARY	i
TABLE OF CONTENTS	ii
INTRODUCTION	1
LOCATION AND ACCESS	1
PHYSIOGRAPHY, CLIMATE AND VEGETATION	1
PROPERTY	3
HISTORY	3
GEOLOGY	5
Regional Geology	5
Regional Metallogeny	7
Property Geology	7
Mineralization	8
1995 TRENCHING	8
Introduction	8
Results	9
CONCLUSIONS AND RECOMMENDATIONS	16
REFERENCES	17
STATEMENT OF QUALIFICATIONS	18
STATEMENT OF COSTS	19

### List of Figures

Figure 1: Property Location Map (1:6,000,000)	2
Figure 2: Claim Map (1:30,000)	4
Figure 3: Regional Geology NTS 105, 106, 15, 116 (1:1,000,000)	6
Figure 4: Trench and sample Location (1:2,000)	10
Figure 5: Trench 95-1 Plan View (1:50)	11
Figure 6: Trench 95-2 Plan View (1:50)	12
Figure 7: Trench 95-3 Plan View (1:50)	13
Figure 8: Trench 95-4 Plan View (1:50)	14
Figure 9: Trench 95-5 Plan View (1:50)	15

### List of Tables

Table I: Claim Status	3
-----------------------	---

### List of Appendices

- Appendix A - Analytical Reports
- Appendix B - Rock Sample Descriptions

## INTRODUCTION

This report was prepared at the request of Mr. Dave Kuran Senior Project Geologist for Homestake Canada Inc. Its purpose is to summarize the results of the 1995 trenching program on the Heidi 9 claims, and to satisfy the reporting and work requirements under the Yukon Quartz Mining Act.

Exploration work consisted of trenching and sampling completed between September 16-27, 1995. A small camp and crew were mobilized to complete the trenching. A portable cobra drill and explosives were used to complete trenching over targets identified and staked during a regional reconnaissance program in August 1995. The blast trenches were mapped, sampled, and where surveyed using a Nikon A10 EDM Total Station survey instrument. At the same time the locations line for the Heidi 1-12 claims was surveyed.

The regional reconnaissance work, claim staking, and trenching on the Heidi Claims was completed by Aurum Geological Consultants Inc., under contract to Homestake Canada Inc., between August 1 and September 27, 1995. Work credits claimed are for the trenching program completed between September 16-22, 1995.

## LOCATION AND ACCESS

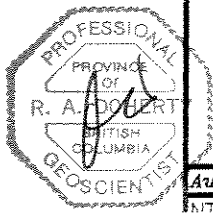
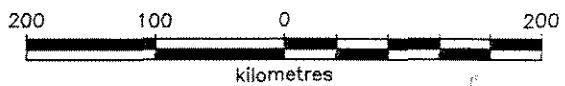
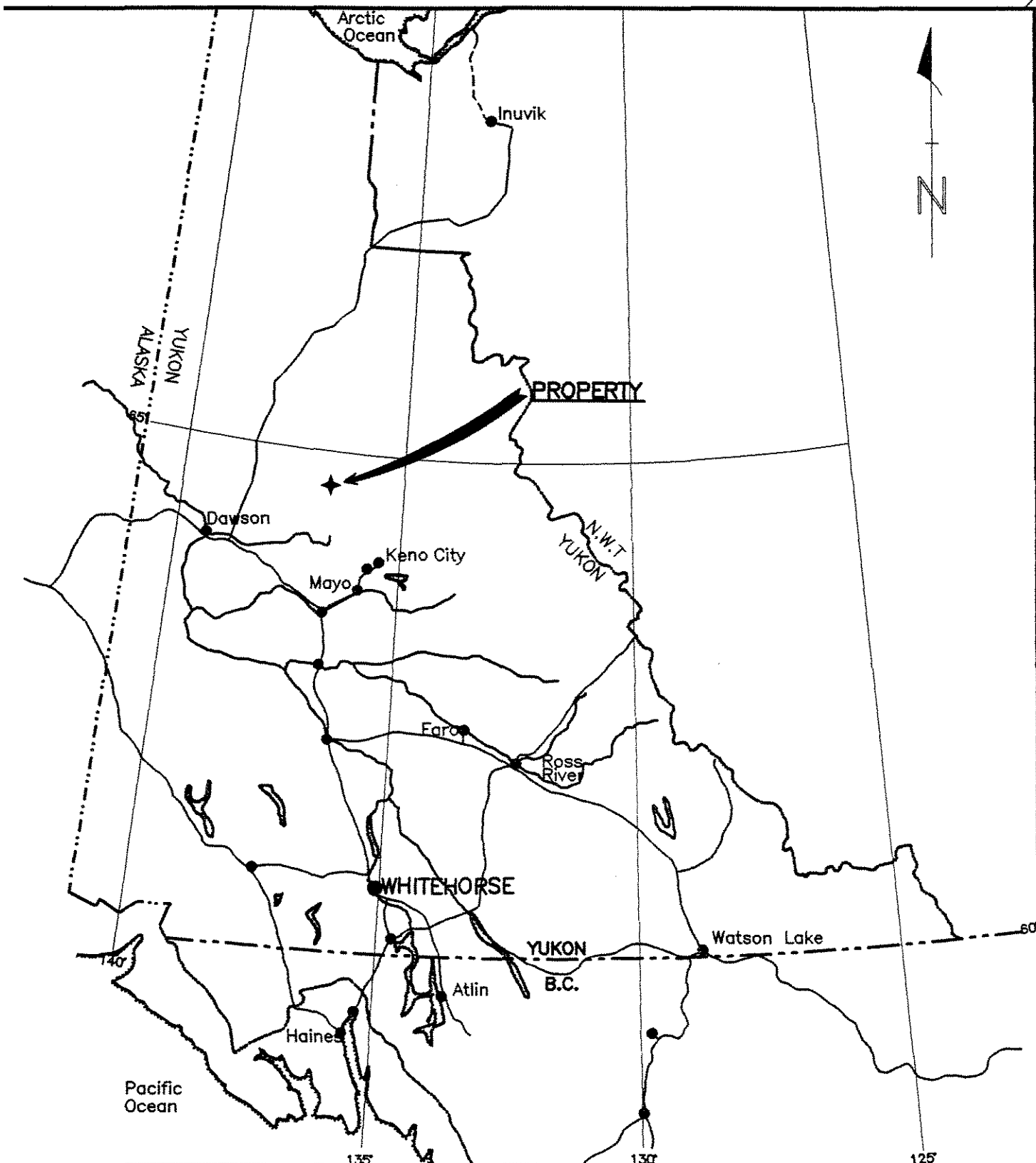
The Heidi 1-24 Claims are located approximately 100 km northeast of Dawson City, Yukon. More specifically, the claims were staked across a prominent northeast trending ridge on the south side of Lake Creek, (Figures 1 ). The centre of the Heidi 1-24 claim block is located at approximately 64°23'N latitude and 137°38'W longitude, within the 1:50,000 Hamilton Creek map area, NTS 116 A/5.

Access is by helicopter from Dawson City or Mayo. The North Fork Pass at km 70 of the Dempster Highway is 20 km directly west of the Heidi Claims.

## PHYSIOGRAPHY, CLIMATE AND VEGETATION

The property is located within the Ogilvie Mountains physiographic region. The area is characterized by moderate relief. Elevations range from 4200 to 6000 feet. Vegetation consists of alpine grasses, sedges, and lichen with very sparse willow growing in the lower creeks. The area is effectively north of the treeline on the northern side of the Ogilvie mountains. Talus and felsenmeer are common as is outcrop on the steep ridges and mountain sides. Permafrost can be expected at any location on the property.

The climate in the area is characterized by cool winters and warm summers. Rainfall and thundershowers are common in the summer months. Average annual precipitation is 40 cm. The exploration season extends from late May to late September.



<b>HOMESTAKE CANADA INC.</b>	
<b>HEIDI 1-24</b>	
<b>DAWSON MINING DISTRICT</b>	
<b>PROPERTY LOCATION MAP</b>	
<i>Aurum Geological Consultants Inc.</i>	date: FEBRUARY, 1995

## PROPERTY

The Heidi 1-24 claims were first staked on August 5, 1995 and recorded at the Mayo Mining Recorders Office on August 16, 1995. The claims were staked in accordance with the Yukon Quartz Mining Act, (Figure 2). Subsequent to locating the Heidi 1-24 claims, competitors added the Ho 1-56 claims. While surveying the location line of the Heidi 1-12 claims, it was noted that a number of the Ho claim posts were located entirely within the Heidi claims. These claims (Ho 49-55), were contested and fractional mineral claims were staked and applications were filed with the Mayo Mining Recorders office in early October 1995, to acquire the ground that was open to locating because of invalid claim post locations. The Heidi 1-24 Claims have been granted as well as all Heidi claims in the Dawson Mining district. The Heidi 91-101, Heidi 25-42, 48,50, 51-54 and 56 have not been granted. None of the competitors claim applications have been granted. The issuing of grants is pending on a claim inspection in the spring. Current claim status (including pending claims) is shown on Yukon Quartz Claim Sheet 116 A/4. Claim data for those claims on which assessment work is applied and cash in lieu has been paid are listed in Table 1. Assessment credits were filed for Heidi 1-10 and cash in lieu was paid on Heidi 11-12.

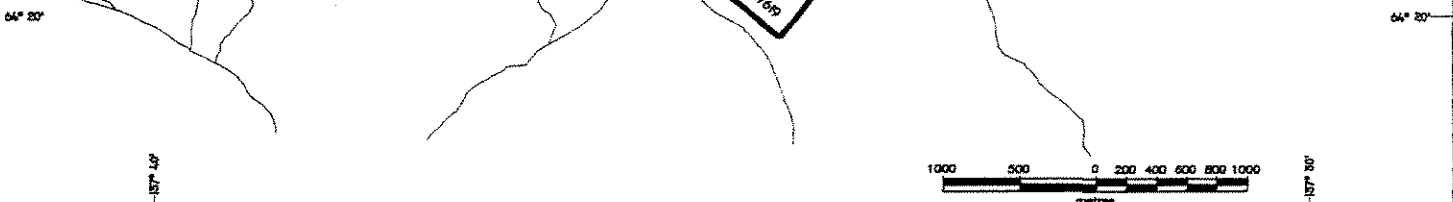
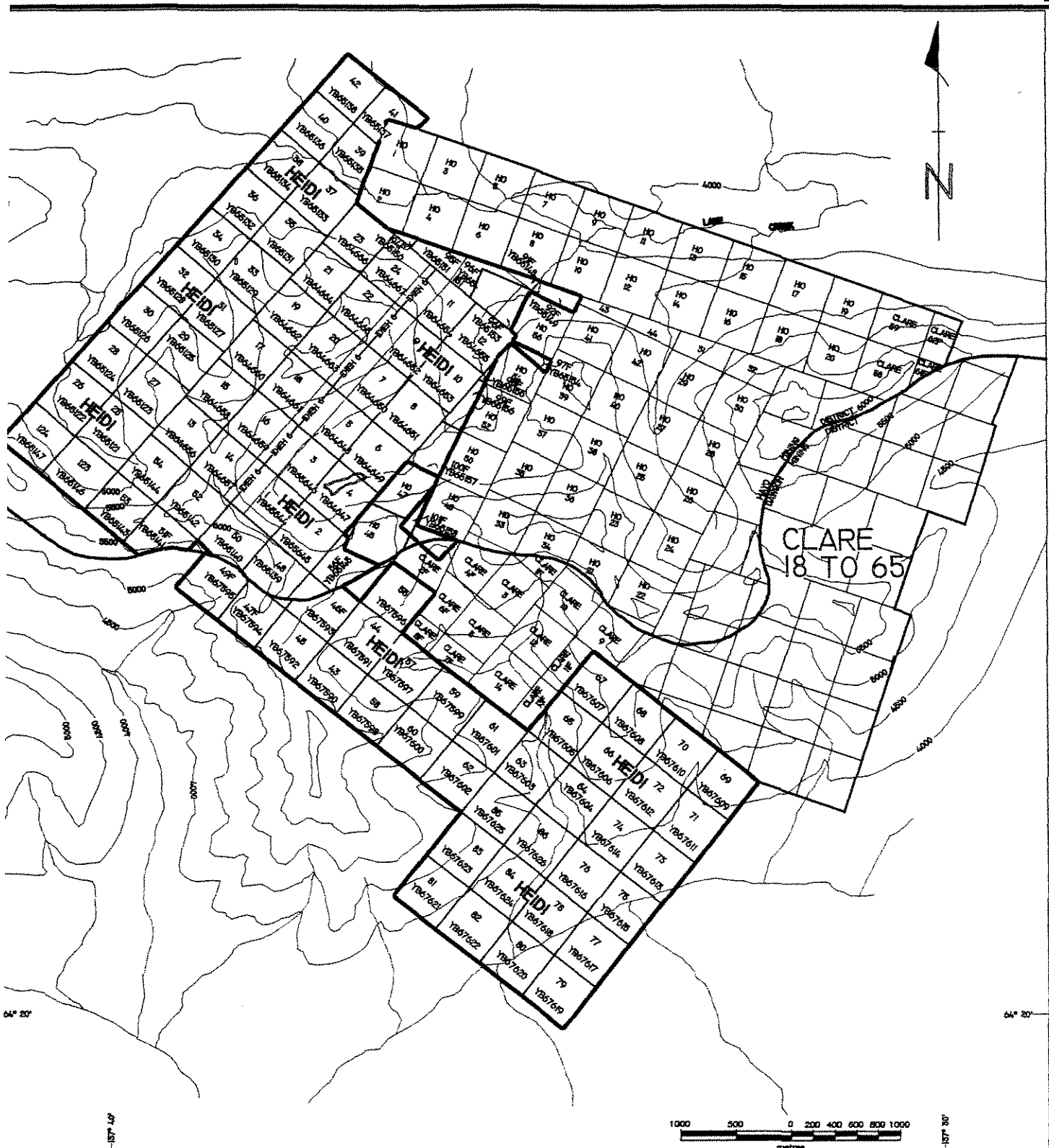
**Table I -CLAIM STATUS**

CLAIM NAME	GRANT NUMBER	NUMBER OF CLAIMS	EXPIRY DATE	MINING DISTRICT
Heidi 1-10	YB65644-653	10	August 16, 2001 *	MAYO
Heidi 11-12	YB65654-655	2	August 16, 1998	Mayo







\* subject to approval of 1995 assessment work

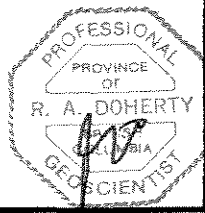
## HISTORY

There is no record of prior claim staking or prospecting in this area. The nearest active quartz claims are located at Mike Lake 17 km southwest and comprise the Lorrie Property owned by Tombstone Exploration Company Ltd. The Hami Claims, located 10 km southeast of the Heidi Claims were staked by Noranda Exploration Company Ltd., as a gold exploration target, but were allowed to lapse and were re-staked in October 1995 by Mar West.



**LEGEND**

-  CLAIM NUMBER
-  GRANT NUMBER
-  LAKE
-  CREEK
-  CONTOUR LINE (500 FT INTERVAL)
-  OUTLINE PROPERTY BOUNDARY



<b>HOMESTAKE CANADA INC.</b>							
<b>HEIDI CLAIMS</b>							
MAYO/DAWSON MINING DISTRICT							
<b>CLAIM MAP</b>							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Aurum Geological Consultants Inc.</td> <td style="width: 50%;">Date: MARCH, 1996</td> </tr> <tr> <td>NTS: 116 A/5</td> <td>Drawn: JC</td> </tr> <tr> <td>Scale: 1:50000</td> <td>Figure: 2</td> </tr> </table>		Aurum Geological Consultants Inc.	Date: MARCH, 1996	NTS: 116 A/5	Drawn: JC	Scale: 1:50000	Figure: 2
Aurum Geological Consultants Inc.	Date: MARCH, 1996						
NTS: 116 A/5	Drawn: JC						
Scale: 1:50000	Figure: 2						

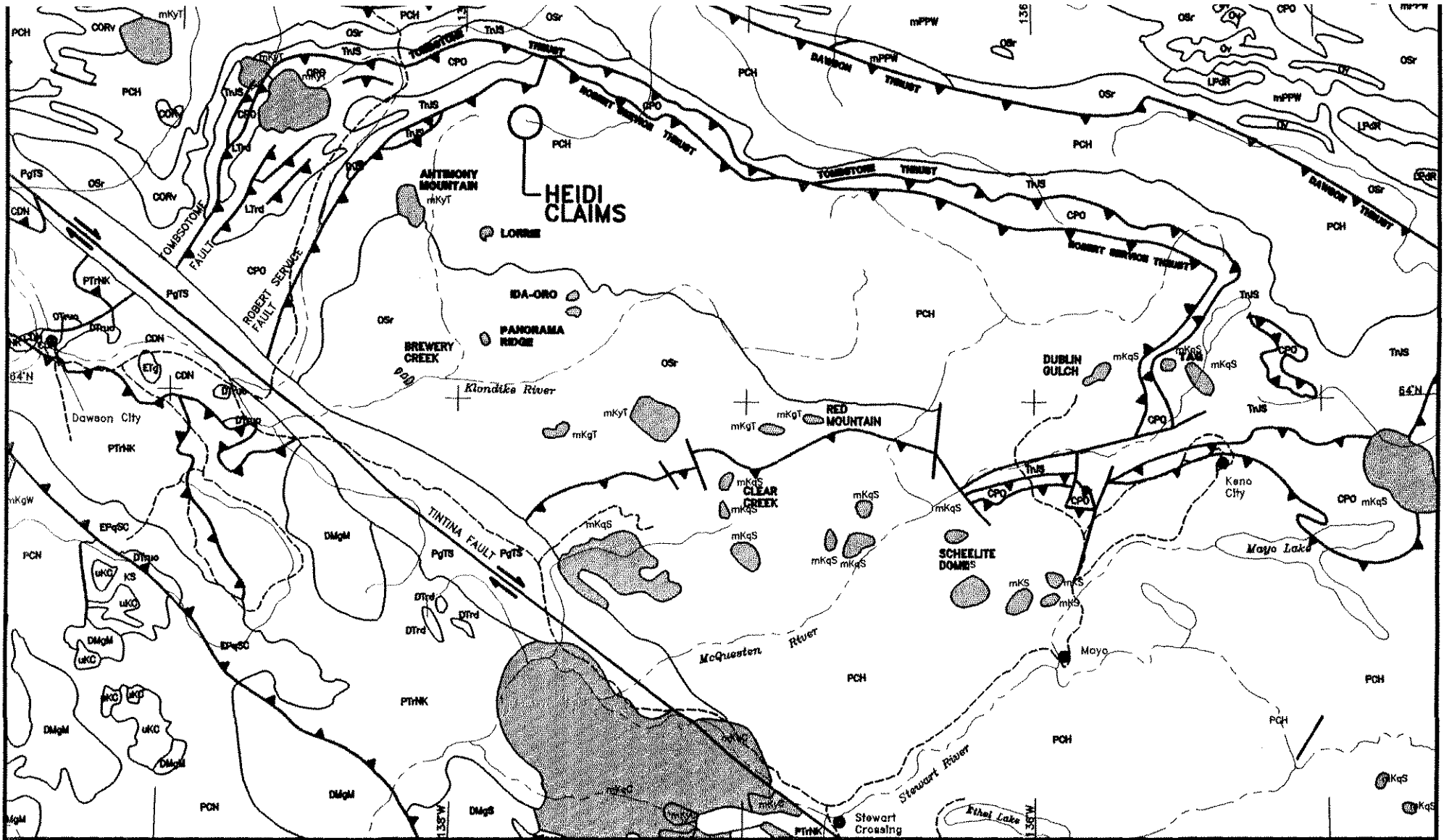
## GEOLOGY

### Regional Geology


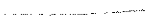

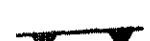

The Heidi property is situated within the eastern Selwyn Basin, part of the Ominica Belt (Wheeler, et al., 1991; Murphy, et al., 1993) as shown on Figure 3. The regional geology of this area of the Yukon has been mapped by Green (1972) at 1:250,000 scale. More detailed 1:50,000 scale mapping has been completed on the map sheets to the south of the Heidi property (Murphy, et al., 1993; Murphy and Heon, 1994). The area northeast of the Tintina Trench is characterized by three regionally extensive northerly directed thrust sheets. The Robert Service, Tombstone, and Dawson thrusts have displaced large packages of rocks within the Selwyn Basin during the Jura-Cretaceous compressional tectonic event. The Robert Service thrust underlies and defines one of the largest thrust sheets in the Canadian Cordillera (Murphy et al., 1993). It extends eastward from Dawson City area through the Keno Hill area and into the Lansing area. The Robert Service thrust typically juxtaposes Upper Proterozoic Hyland Group rocks (PCH) on the upper plate over Mississippian Keno Hill Quartzite and Triassic-Jurassic schist (TrJs) on the lower plate. The Tombstone thrust typically juxtaposes Proterozoic and Paleozoic Selwyn Basin rocks over an immediate footwall ranging in age from Devonian to Late Jurassic (Murphy, et al, 1993, Abbott, 1993). Structural evidence suggests an early northwestward, followed by northeastward translation of the Tombstone thrust sheet and underlying Paleozoic rocks on the Tombstone Thrust (Roots, 1993; Murphy and Heon, 1994).

Selwyn Basin rocks were deformed and intruded by felsic plutons and stocks during the waning stages of the Jura-Cretaceous compressional tectonic event. Three suites of granitoid intrusives are recognized, a 98 Ma Selwyn Suite, the 89-95 Ma Tombstone Suite and a 64 Ma Southern Suite. The Selwyn and Tombstone Suite intrusions are distributed along a northwest trending arcuate belt within the Selwyn Basin. The intrusives are mainly granitic in composition and host tin, tungsten, and molybdenum mineralization (Emond, 1992). Recent exploration efforts have identified Fort Knox style intrusive hosted gold mineralization associated with the Tombstone Suite intrusions. Geochemically, Fort Knox style mineralization has a strong Au, As, Bi, Sb, +/- Hg, and Pb geochemical signature that reflects the intrusive source for the mineralization.

Felsic Cretaceous intrusives of the 89-95 Ma Tombstone Suite are known to host low grade Fort Knox style intrusive hosted gold mineralization at Fort Knox, Dublin Gulch, Clear Creek, Red Mountain, and Scheelite Dome. Intrusive bodies range in size from meter-scale dykes to stocks several square kilometres in area (Murphy, et al., 1993). They are primarily granitic to quartz monzonitic in composition, although bodies of syenite and diorite are also found in the belt.

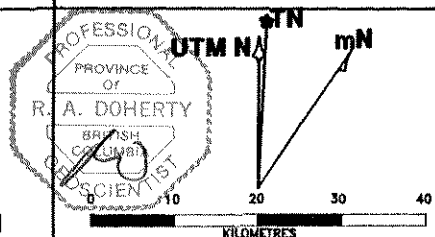


**LEGEND**

-  Road
-  Major River
-  Townsite
-  Thrust Fault
-  Strike slip Fault

See table for Lithologies

Geology modified from:  
Wheeler and McFeeley, 1991



HOMESTAKE CANADA INC.  
HEIDI 1-24  
MAYO/DAWSON MINING DISTRICTS  
**REGIONAL GEOLOGY**  
NTS 105, 106, 115, 116

## **Regional Metallogeny**

The Tombstone suite intrusions form an arcuate belt that extends from Dawson City, through the Keno Hill District and on to the Yukon-NWT border. The central part of the Tombstone belt has been the focus of most exploration for low grade "Fort Knox" style gold deposits. More recently, exploration activity has also been directed at the northern portion of the Tombstone suite. Active exploration targets in that belt include: Dublin Gulch, Clear Creek, Scheelite Dome, Red Mountain, and Loki Gold Corporation's Brewery Creek deposit.

All of the currently active bulk mineable gold targets in this belt are related to the 89-95 Ma Tombstone Suite intrusives. Intrusion of alkaline felsic stocks parallel to the fold axis has resulted in fault controlled mineralization spatially related to the stocks. Mineralization consists of: Fort Knox style gold-bismuth and arsenopyrite in sheeted veins and disseminations within the intrusions, tin-tungsten and gold skarns, silver-lead-zinc veins, and silver-lead-antimony veins.

Geochemically, the intrusions, and in places reactive or porous sedimentary units nearby, show a strong Au, As, Bi, Sb, +/- Hg and Pb geochemical signature. The Fort Knox and Dublin Gulch deposits can be considered as one end member and Brewery Creek and other occurrences found within both intrusions and surrounding sedimentary rocks can be considered as the other end member that are more a disseminated replacement style mineralization similar to the Carlin type deposits of Nevada. The common factor present at all these deposits and occurrences is the Tombstone Suite intrusions and the geochemical association related to these intrusions.

## **Property Geology**

The Heidi Claims are located over sedimentary rocks of the Upper Proterozoic-Lower Paleozoic Hyland Group which consist of two distinct formations, the Yusezyu Formation and the Narchilla Formation which are the lowest exposed units of the Hyland Group (Gordy and Anderson, 1993).

The Yusezyu Formation consists of buff to rusty weathering gritty quartzite, sandstone, quartz pebble conglomerate and minor interbeds of brown weathering limestone and calcareous sandstones. The gritty sandstones are fine to medium grained with 30-50% rounded quartz grains and 20-30% shale fragments. The remainder consists of unidentifiable dark fragments. The quartz pebble conglomerate is clast supported with 80-90% rounded to sub-rounded quartz pebbles. The conglomerates also contain some shale fragments. The conglomerates consist of 1-5 m thick beds and channels in the gritty sandstones. Limestones and calcareous siltstones are interbedded with the gritty sandstones. The Narchilla Formation consists of black, maroon and green shales and slates, and finely laminated limestones. These rocks were not prospected but very good

exposure along the south cirque wall allowed for a visual inspection revealing no obvious alteration or mineralization.

The sedimentary layers are recumbently folded. There also appears to be some fault movement along fold limbs (axial planer). Folds are typically asymmetric with steep north limbs and shallow south limbs.

## **Mineralization**

A new showing was discovered on the northeast end of the northern ridge overlooking Lake Creek. The ridge walls are quite steep with slope angles of > 25 degrees. The showing consists of near vertical, east west trending narrow veins containing quartz and arsenopyrite. Where these veins cross favourable beds, the mineralizing fluids have migrated along bedding. These favourable units include limestone and quartz pebble conglomerate. Gritty quartzite units tend to be pyrite altered and contain minor arsenopyrite veins but are too siliceous and equigranular to allow significant replacement. The limestones are replaced with massive pyrite, arsenopyrite, and minor bladed stibnite. One narrow (.5 m) limestone at the base of a gritty quartzite is totally replaced by massive arsenopyrite and is exposed for 10-15 m along the strike of the bedding. In places, the quartz pebble conglomerates contain finely disseminated pyrite and arsenopyrite to 30% and in places coarse arsenopyrite to 40 or 50%. Mineralization is concentrated near the nose of an asymmetrical fold with mineralization found on both limbs of the fold and within more than one stratigraphic horizon. The mineralization is contained within an area of approximately 300 m long by 150 metres high.

There is an early set of barren quartz veins that are orthogonal to bedding, are found only within the competent quartzites and grit units and are most likely related to the folding of the sedimentary rocks. These veins then acted as channels for the later hydrothermal solutions.

## **1995 TRENCHING**

### **Introduction**

Between September 16-22, 1995 a three man crew completed blast trenching on the Heidi 9 claim (YB64652) at the northeast end of the Heidi 1-24 claim block. A total of five trenches were blasted using a cobra plugger and explosives. The trenching was completed so that fresh bedrock chip samples could be collected across mineralized horizons discovered during regional reconnaissance work for Homestake Canada Inc.

Two additional personnel arrived on site between September 20-22 to survey the trench locations, claim posts and other points on the steep slopes where the showings are located.

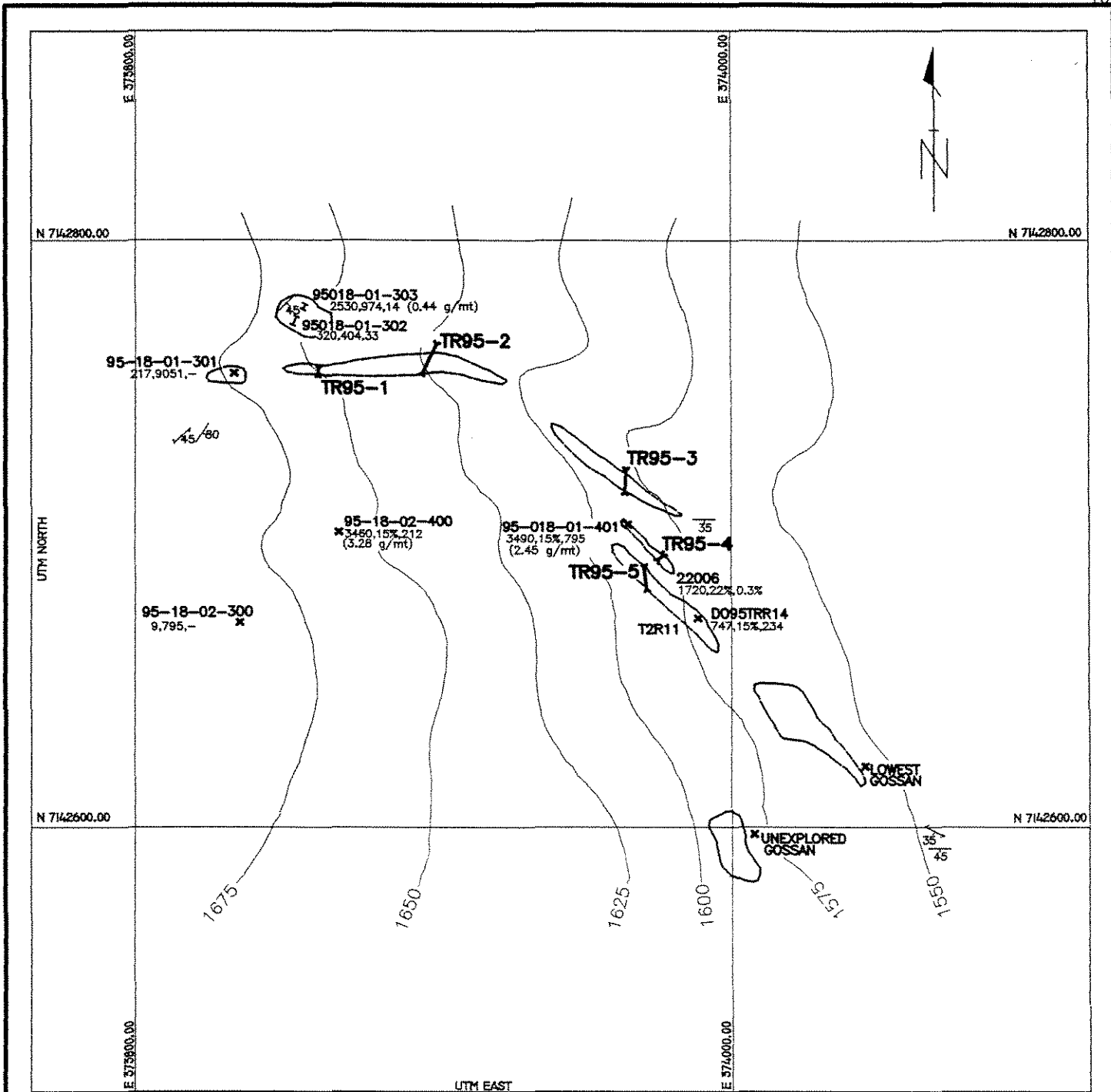
## Results

A total of 28.5 linear metres of trenching was completed in 5 trenches. The locations of Trenches 95-1 to 95-5 are shown on Figure 4 along with a few chip and grab samples collected outside of the trenches. Sample 951801303 collected 20 m north of Trench 95-1 returned 2530 ppb Au over 1 m from an ICP analyses. An assay of the pulp returned 0.44 gm/t Au. Sample 95180401 returned 2.45 gm/t Au over 1 m. This sample was located 15 m along strike from Trench 95-4. Sample 951802400 was a grab sample of massive pod like arsenopyrite and pyrite that returned 3.28 gm/t Au (Figure 4). Geochemical analyses and sample descriptions are found in Appendices A & B.

Trench 95-1 and 95-2 are located in a steep gully at the northern side of the showing and on the steep northern limb of the fold. The elevation at Trench 95-1 is 1650 m and the lowest exposure of gossan associated with the mineralized horizon is at 1550 m. The mineralized zone extends over a horizontal distance of 300 m with a 125 m vertical range.

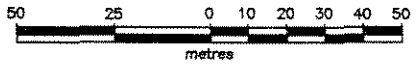
Figures 5 to 9 show plan views of the trenches with sample locations and geochemical analyses for Au, As and Bi. The presence of elevated bismuth in most samples indicates that the mineralizing fluids are derived from an intrusive. The assemblage of Au, As, Bi, and Sb is the typical geochemical signature associated with gold mineralization related to Tombstone suite intrusions in the western Selwyn basin.

The best values returned from the trench sampling were 2.06 gm/t Au over 1.0 m in Trench 95-3 and 2.93 gm/t Au over 1.0 m in Trench 95-5.

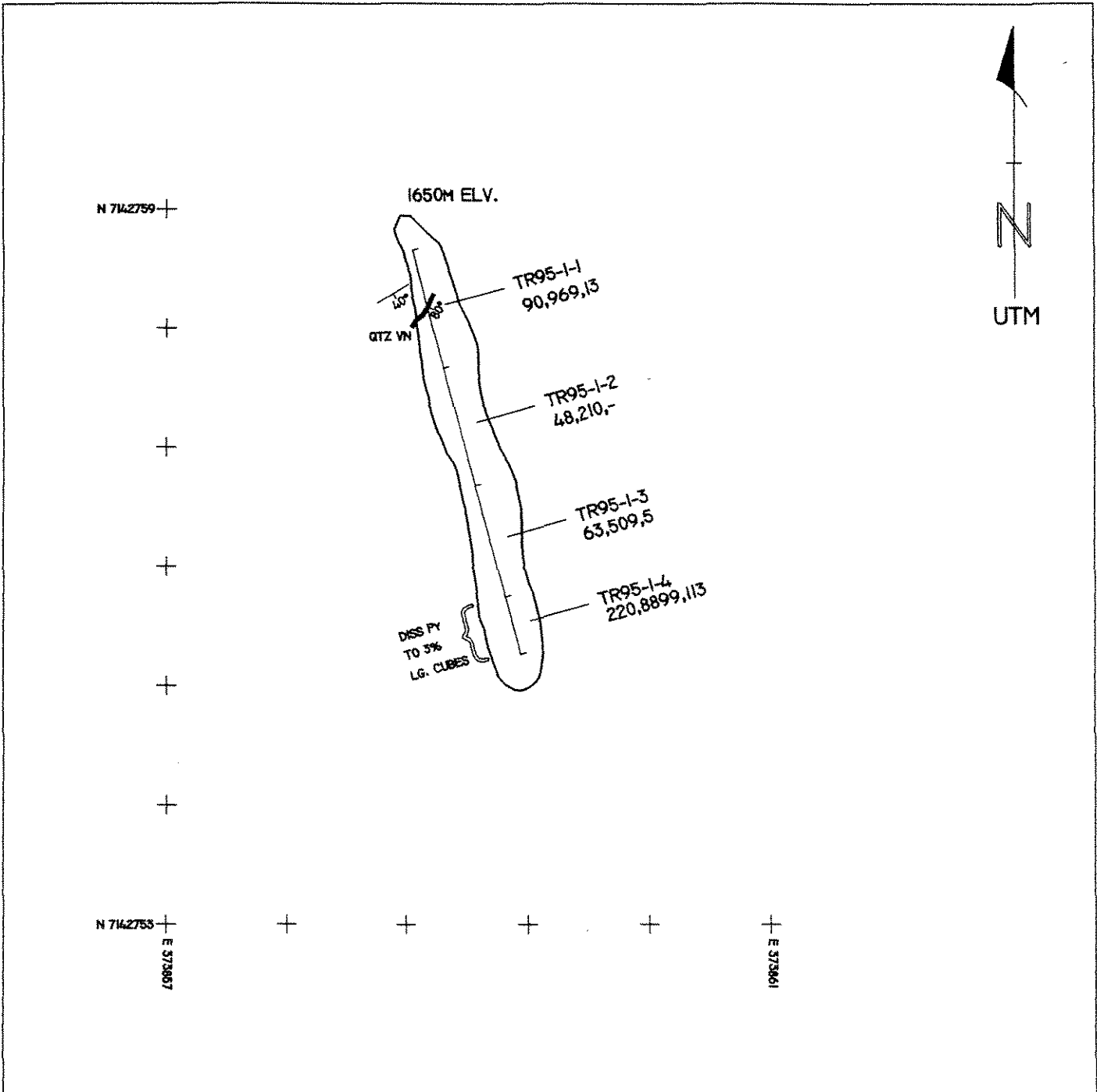


**LEGEND**

- CLEAVAGE
- BEDDING
- UNSURVEYED SAMPLE SITE
- GRAB SAMPLE
- CHIP SAMPLE
- SAMPLE #  
ASSAY  
Au ppb, As ppm, Bi ppm  
(UNLESS OTHERWISE SHOWN)
- 1995 TRENCH LOCATION
- GOSSANOUS ZONE (MAINLY OVER GRIT)
- CONTOUR LINE (25m INTERVAL)



<b>HOMESTAKE CANADA LTD.</b>	
<b>HEIDI 1-24</b> MAYO MINING DISTRICT	
<b>TRENCH AND SAMPLE LOCATION</b>	
Aurum Geological Consultants Inc.	Date: MARCH, 1996
NTS: 116 A/5	Drawn: JC
Scale: 1:2000	Figure: 4

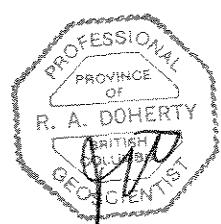


**Legend**

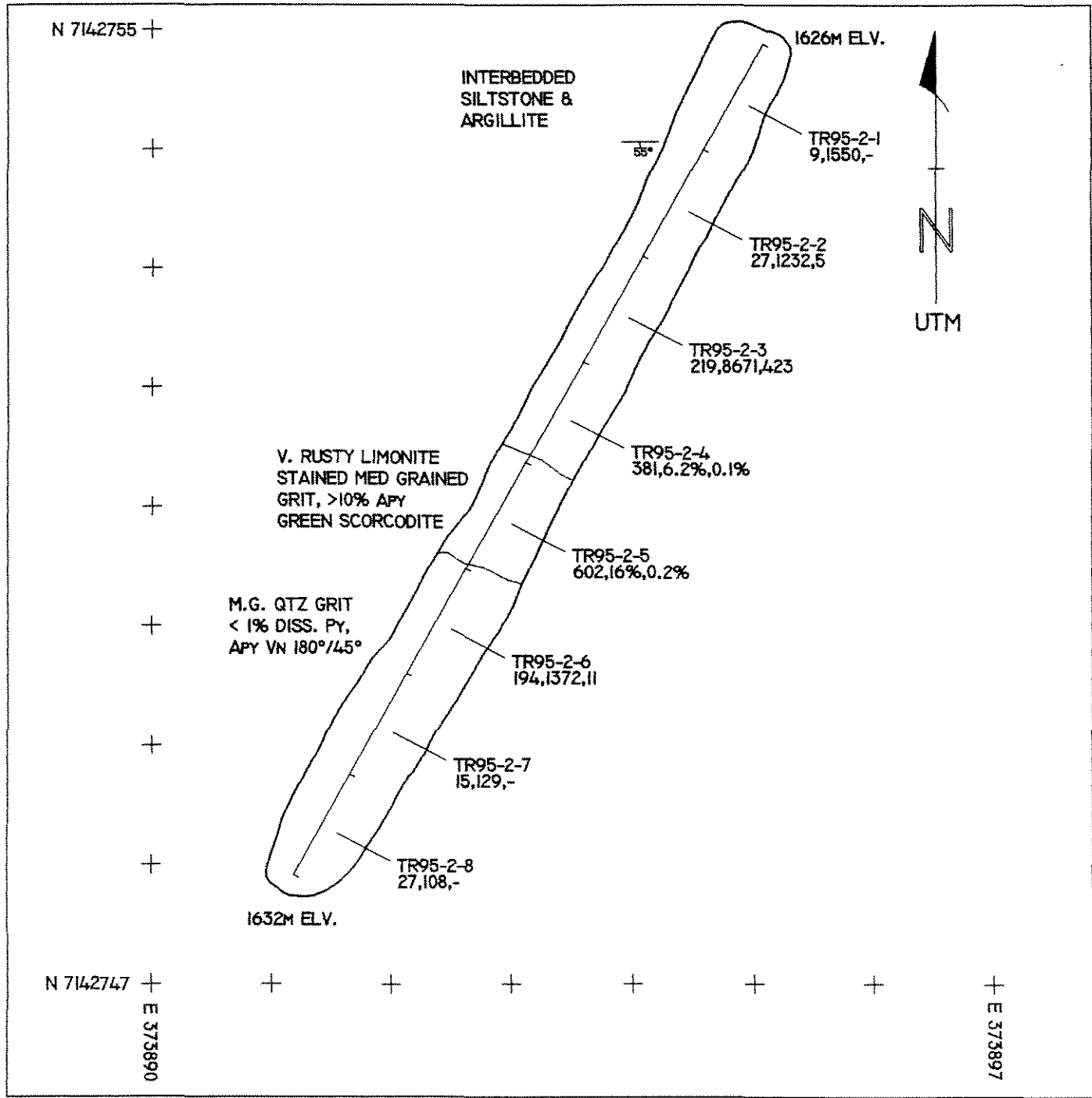
**BEDDING**

TR95-1-4  
220,889,113

**SAMPLE #**  
**ASSAY**  
Au ppb, As ppm, Bi ppm  
(UNLESS OTHERWISE SHOWN)

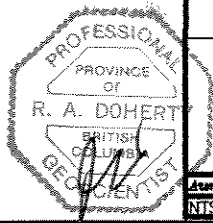
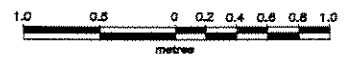


<b>HOMESTAKE CANADA LTD.</b>	
HEIDI 1-24 MAYO MINING DISTRICT	
<b>TRENCH 95-1 PLAN VIEW</b>	
<i>Stratum Geological Consultants Inc.</i>	Date: FEBRUARY, 1996
NTS: 116 A/5	Drawn: JC Scale: 1:50 Figure: 5



**Legend**

**BEDDING**  
 TR95-1-4 **SAMPLE #**  
 220,8899,113 **ASSAY**  
 Au ppb, As ppm, Bi ppm  
 (UNLESS OTHERWISE SHOWN)



<b>HOMESTAKE CANADA LTD.</b>	
HEIDI 1-24	
MAYO MINING DISTRICT	
<b>TRENCH 95-2 PLAN VIEW</b>	
Atatum Geological Consultants Inc.	Date: FEBRUARY, 1996
NTS: 116 A/5	Drawn: JC
Scale: 1:50	Figure: 6

N 7142728 +

+

+

+

+

+

N 7142722 +  
E 373962

+

+

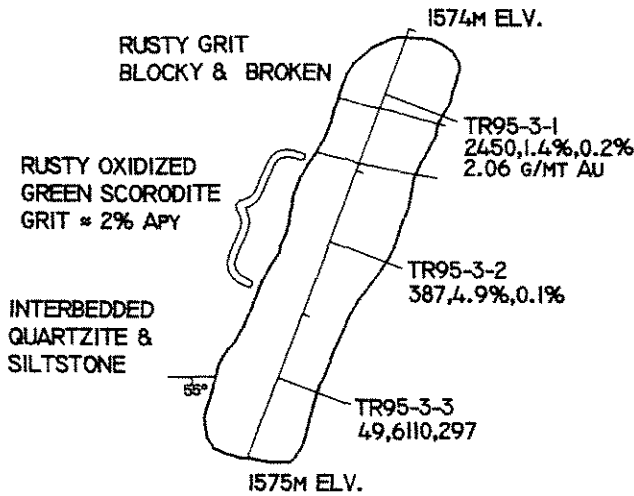
+

+

+

+

+ E 373969



**Legend**

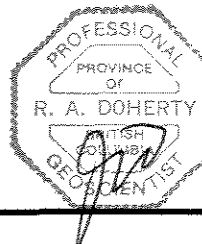
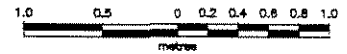


BEDDING

TR95-1-4  
220,8899,113

SAMPLE #  
ASSAY

Au ppb, As ppm, Bi ppm  
(UNLESS OTHERWISE SHOWN)



HOMESTAKE CANADA LTD.			
HEIDI 1-24			
MAYO MINING DISTRICT			
<b>TRENCH 95-3 PLAN VIEW</b>			
Aurum Geological Consultants Inc.		Date: FEBRUARY, 1996	
NTS: 116 A/5	Drawn: JC	Scale: 1:50	Figure: 7



N 7142693 +

LIMEY SILTSTONE, WELL BEDDED  
DISS PY, ASP TO 3%

QUARTZITE SILTSTONE

+  
+  
+  
+

158M ELV.

1580M ELV.

QTZ VEINS 010°/VERT.  
DO NOT EXTEND OUTSIDE  
QTZITE.

TR95-4-2  
583,7.5%,71

TR95-4-1  
267,1.4%,21

N 7142689 +  
E 373974

+

+

+

+ E 373978

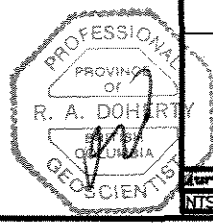
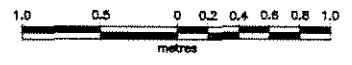
### Legend



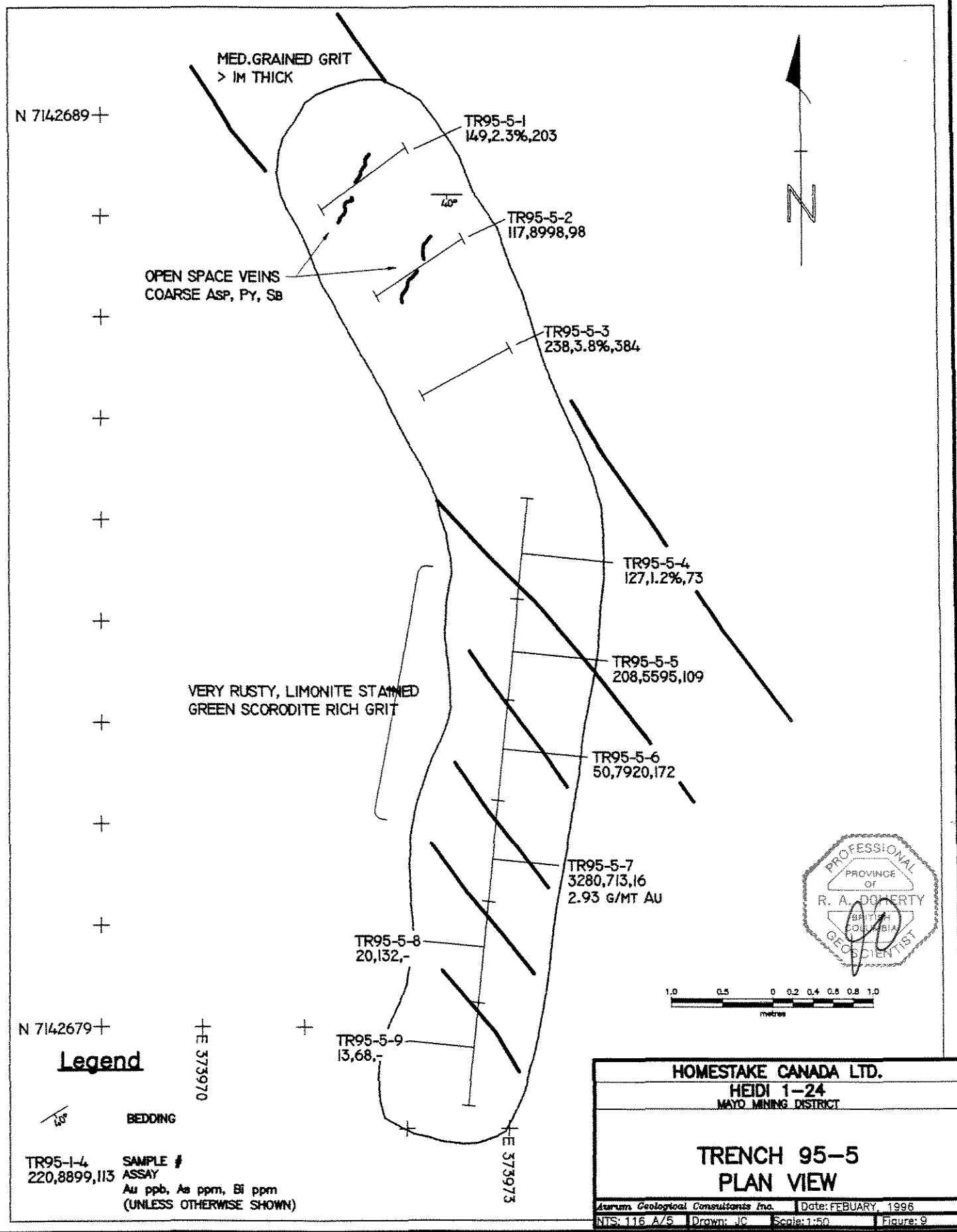
BEDDING

TR95-1-4  
220,8899,113

SAMPLE #  
ASSAY  
Au ppb, As ppm, Bi ppm  
(UNLESS OTHERWISE SHOWN)



HOMESTAKE CANADA LTD.	
HEIDI 1-24 MAYO MINING DISTRICT	
<b>TRENCH 95-4 PLAN VIEW</b>	
Terium Geological Consultants Inc.	Date: FEBRUARY, 1996
NTS: 116 A/5 Drawn: JC	Scale: 1:50 Figure: 8



MED. GRAINED GRIT  
> 1M THICK

N 7142689 +

TR95-5-1  
149,2.3%,203

TR95-5-2  
117,8998,98

OPEN SPACE VEINS  
COARSE ASP, PY, SB

TR95-5-3  
238,3.8%,384

TR95-5-4  
127,1.2%,73

VERY RUSTY, LIMONITE STAINED  
GREEN SCORODITE RICH GRIT

TR95-5-5  
208,5595,109

TR95-5-6  
50,7920,172

TR95-5-7  
3280,713,16  
2.93 G/MT AU

TR95-5-8  
20,132,-

TR95-5-9  
13,68,-

N 7142679 +

**Legend**

+ E 573970

+ E 573973

BEDDING

TR95-1-4  
220,8899,113

SAMPLE #  
ASSAY  
Au ppb, As ppm, Bi ppm  
(UNLESS OTHERWISE SHOWN)



HOMESTAKE CANADA LTD.	
HEIDI 1-24	
MAYO MINING DISTRICT	
<b>TRENCH 95-5 PLAN VIEW</b>	
Atatum Geological Consultants Inc.	Date: FEBRUARY 1996
NTS: 116 A/5	Drawn: JC
Scale: 1:50	Figure: 9

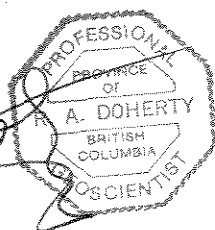

## CONCLUSIONS AND RECOMMENDATIONS

Regional reconnaissance work in 1995 in the Lake Creek area resulted in the discovery of stratabound replacement gold mineralization hosted within Yusezyu Formation quartz grits and limy siltstones. Mineralization consists of massive to disseminated pyrite, arsenopyrite and stibnite in porous and structurally prepared coarse grit and limy siltstone beds. There is a first generation of open space quartz veins that are generally confined to the competent quartzite and grit unit, and are normally barren or only weakly mineralized. These barren veins are orthogonal to the bedding planes, rarely occur outside the quartzites and are related to fracture cleavage planes formed in the quartzites during folding. It appears that mineralizing fluids were introduced into the host beds along these early vertical fractures that formed orthogonal to the bedding planes.

Results from five blast trenches include: 2.06 gm/t Au over 1.0 m in Trench 95-3 and 2.93 gm/t Au over 1.0 m in Trench 95-5; and three samples from outside the trenches that are in the 2-3 gm/t Au range.

The Heidi property is a new discovery that is geochemically typical of other gold deposits and occurrences in the western Selwyn basin related to the Tombstone suite intrusions. The property should be mapped in detailed at 1:5000 scale with careful attention to the stratigraphy of the Yusezyu Formation.

Respectfully Submitted



R. Allan Doherty, P.Geol.  
March 11, 1996

## REFERENCES

- Abbott, J.G., 1993. Revised stratigraphy and new exploration targets in the Hart River area, southeastern Yukon; *in* Yukon Exploration and Geology, 1992, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada
- Emond, D.S., 1992. Petrology and Geochemistry of Tin and Tungsten Mineralized Plutons, McQuesten River Region, Central Yukon. *in* Yukon Geology Vol. 3; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p.167-195.
- Gordey, S.P., and Anderson, R.G., 1993. Evolution of the northern Cordilleran miogeocline, Nahani map area (105I), Yukon and Northwest Territories, Geological Survey of Canada, Memoir 428.
- Green, L.H., 1972. Geology of Nash Creek, Larsen Creek, and Dawson map-Areas, Yukon Territory; Geological Survey of Canada, Memoir 364.
- Murphy, D.C., Heon, D., and Hunt, J., 1993. Geological Map of Clear Creek Map Area, Western Selwyn Basin (NTS 115P/14). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada.
- Murphy, D.C., Heon, D., 1994. Geology and Mineral Occurrences of Sprague Creek Map Area (115P/15), Western Selwyn Basin. *In*: Yukon Exploration and Geology 1993; Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 29-46
- Wheeler, J.O., and McFeely, P. (comp), 1991: Tectonic Assemblage Map of the Canadian Cordillera and adjacent parts of the United States of America; Geological Survey of Canada, Map 1712A.

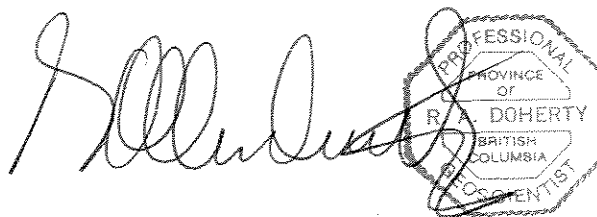
## STATEMENT OF QUALIFICATIONS

I, R. Allan Doherty, hereby certify that:

1. I am a geologist with AURUM GEOLOGICAL CONSULTANTS INC., 205 - 100 Main Street, P.O. Box 4367, Whitehorse, Yukon, Y1A 3T5.
2. I am a graduate of the University of New Brunswick, with a degree in geology (Hons. B.Sc., 1977) and that I attended graduate school at Memorial University of Newfoundland, 1978-80. I have been involved in geological mapping and mineral exploration continuously since then.
3. I am a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia, Registration No. 20564.
4. I am the author of this report based on information collected during property work completed between September 16-22, 1995 on the Heidi Claims.
5. I have no direct or indirect interest in the properties or securities of Homestake Canada Inc.
6. I consent to the use of this report by Homestake Canada Inc., provided that no portion is used out of context in such a manner as to convey a meaning differing materially from that set out in the whole.

March 11, 1996

R. Allan Doherty, P. Geo.



The image shows a handwritten signature in black ink, which appears to be 'R. Allan Doherty'. To the right of the signature is a circular professional seal. The seal contains the text: 'PROFESSIONAL', 'PROVINCE OF', 'R. A. DOHERTY', 'BRITISH COLUMBIA', and 'Geoscientist'. The seal is partially obscured by the signature.

## STATEMENT OF COSTS

1995 Assessment Work Valuation; Heidi 1-24 Claims, 116 A/5  
Work completed between September 16-22, 1995

### Personal

R. Allan Doherty, P.Geo., P.O. Box 4367, Whitehorse, Yukon, Y1A 3T5 (September 20-22, 1995), 2.5 days @ \$300.00	\$750.00
Bruce Anderson, Blaster P.O. Box 662 Smithers, B.C., V0J 20 (September 16-22, 1995), 7 days @ \$300.00	\$2,100.00
Brian Sauer, Prospector, P.O. 43028, RPO Sapperton, B.C., V3L 5P7 (September 16-22, 1995), 7 days @ \$300/day	\$2,100.00
Michel Tetrault, Helper, 22 Mossberry Lane , Whitehorse, Yukon Y1A 5W4 (September 16-22, 1995), 6.5 days @ \$300/day	\$1,950.00
Joe Clarke, Surveyor, General Delivery, Whitehorse, Yukon, Y1A 3S7 (September 20-22, 1995), 2.5 days @ \$300/day	\$750.00
Jim O'Rourke, Camp construction, P.O. Box 5255, Whitehorse, Yukon Y1A 4Z1 (September 16-18, 1995), 3.0 days @ \$300/day	\$900.00

### Expenses - Camp and Transportation

Helicopter 500D, 5.1 hrs @ \$834/hr:	\$4,253.40
Helicopter 206B, 15.3 hrs @ \$675/hr:	\$10,323.60
Truck rental: 7 days @ \$100/day	\$700.00
Camp & Food: 30 man days @ \$60/man day	\$1,800.00

### Expenses - Consumables

Field supplies:	\$115.78
Explosives:	\$493.70
Gasoline:	\$566.50

### Expenses - Analytical

Sample shipment:	\$105.03
Geochemical Analyses (33 samples @ \$15 each):	\$495.00

Sub-Total:	\$27,403.01
GST (7% of \$27,403.01):	\$1,918.21

<b>TOTAL VALUATION OF 1995 ASSESSMENT WORK</b>	<b>\$29,321.22</b>
--	--------------------

**APPENDIX A**

**ANALYTICAL REPORTS**

**INTERNATIONAL PLASMA LABS  
IPL95I2806 Rocks**





INTERNATIONAL PLASMA LABORATORY LTD

Client: Homestake Mineral Development Co  
 Project: 18 33 Rock

IFL: 9512006

Out: Oct 06, 1995  
 In: Sep 28, 1995

Page 1 of 1  
 [080809:03:14:59100695]

Section 2 of 2  
 Certified BC Assayer: David Chiu



Sample Name	Na %	P %
IR95-1-1	R 0.02	0.01
IR95-1-2	R 0.03	0.01
IR95-1-3	R 0.03	0.01
IR95-1-4	R 0.01	0.01
IR2-95-1	R 0.03	0.02
IR2-95-2	R 0.02	0.04
IR2-95-3	R 0.02	0.03
IR2-95-4	R 0.01	0.03
IR2-95-5	R 0.01	0.01
IR2-95-6	R 0.03	0.01
IR2-95-7	R 0.03	0.01
IR2-95-8	R 0.03	0.01
IR3-95-1	R 0.02	0.02
IR3-95-2	R 0.01	0.02
IR3-95-3	R 0.03	0.01
IR4-95-1	R 0.02	0.03
IR4-95-2	R 0.03	0.01
IR5-95-1	R 0.02	0.01
IR5-95-2	R 0.01	0.01
IR5-95-3	R 0.01	0.01
IR5-95-4	R 0.01	0.01
IR5-95-5	R 0.01	0.03
IR5-95-6	R 0.02	0.02
IR5-95-7	R 0.02	0.01
IR5-95-8	R 0.04	0.01
IR5-95-9	R 0.03	0.16
9518 BA1	R 0.03	0.01
951801301	R 0.02	0.01
951801302	R 0.01	<
951801303	R 0.01	<
951801401	R 0.01	0.02
951802300	R 0.02	0.01
951802400	R 0.01	0.01

Min Limit 0.01 0.01  
 Max Reported\* 5.00 5.00  
 Method ICP ICP

- No Test ins=Insufficient Sample S=Soil R=Rock C=Core L=Silt P=PuIp U=Undefined m=Estimate/1000 %=Estimate % Max=No Estimate

**APPENDIX B**  
**ROCK SAMPLE DESCRIPTIONS**

SAMPLE NUMBER	LOCATION (UTM)	DESCRIPTION	Au ppb	Au g/mt	Ag ppm	As ppm (%)	Sb ppm (%)	Bi ppm (%)	Type
TR95-1-1	7142758N 373860E	Fine grained grey-green laminated siltstone, non-calcareous. Fine mm scale quartz gash veins @210/80. Disseminated pyrite to 1%. Surface is weakly limonite coated.	90		0.6	969	37	13	Chip 1.0 m
TR95-1-2	7142757N 373860E	Same as above, no qtz veins.	48		0.1	210	11	<	Chip 1.0 m
TR95-1-3	7142756N 373860E	Same as above	63		0.2	509	59	5	Chip 1.0 m
TR95-1-4	7142755N 373860E	Same as above but with 2-3% disseminated pyrite cubes.	220		6.4	8899	91	113	Chip 0.5m
TR2-95-1	7142755N 373894E	Flaggy bedded siltstone, non-calcareous, fine grained, disseminated pyrite to 1-2%. Bd 090/55 °	9		1.0	1550	93	<	Chip 1.0 m
TR2-95-2	7142754N 373894E	Same as above	27		0.8	1232	39	5	Chip 1.0 m
TR2-95-3	7142753N 373894E	Same as above	219		11.6	8671	370	423	Chip 1.0 m
TR2-95-4	7142752N 373893E	same as above	381		14.1	6.2%	451	0.1%	Chip 1.0 m
TR2-95-5	7142751N 373893E	Very rusty, recessive, sericite altered green medium grained quartz grit. 5% arsenopyrite, 1% stibnite, 1% pyrite.	602		34.0	16%	768	0.2%	Chip 1.0 m
TR2-95-6	7142750N 372992E	Same as above, more blocky and broken, <1% disseminated Py- Apy	194		0.3	1372	23	11	Chip 1.0 m
TR2-95-7	7142749N 373891E	Same as above. Quartz veins 180/45 °	15		<	129	10	<	Chip 1.0 m
TR2-95-8	7142748N 373891E	Dark grey-blue quartz grit on weathered surface. Limonite staining, quartz eyes to 2-3 mm. Quartz tension veins orthogonal to bedding. Disseminated Py & Apy to 1-2%.	27		<	108	7	<	Chip 1.0 m
TR3-95-1	7142723N 373964E	Extremely rusty and limonite stained siltstone with interbedded grit. ~1% Apy, 5% py. Noncalcareous.	2450	2.06	37.0	1.4%	3985	0.2%	Chip 1.0 m
TR3-95-2	7142724N 373964E	Green sericite altered clay rich grit, rusty weathering, 1-2% Py-Apy.	387		21.0	4.9%	714	0.1%	Chip 1.0 m

NUMBER	(UTM)	DESCRIPTION	Au ppb	Au g/mt	Ag ppm	As ppm (%)	Sb ppm (%)	Bi ppm (%)	Type
TR3-95-3	7142725N 373965E	Interbedded siltstone and grit.	49		6.4	6110	181	297	Chip 1.0 m
TR4-95-1	7142691N 373977E	Rusty weathering, calcareous siltstone. Bluish grey on fresh surface. Disseminated Pyrite 5% and Arsenopyrite 1%.	267		2.0	1.4%	169	21	Chip 1.0 m
TR4-95-2	7142691N 373976E	Limonic siltstone, overlain by a thick 1 m fine grained quartzite. Quartz veins in quartzite 110/90 °. Bedding 070/35 °.	583		1.6	7.5%	229	71	Chip 1.0 m
TR5-95-1	7142688N 373970E	Medium grained quartz grit, quartz eyes to 3-4 mm, clast supported, some open space free growth quartz, grit is 1.2 m thick, bedding 090 °/40 °. Coarse acicular stibnite on fractures up to 4 cm long.	149		8.0	2.3%	733	203	Chip 1.0 m
TR5-95-2	7142688N 373972E	Same as above, 1m south of TR5-95-1	117		4.1	8998	282	98	Chip 1.0 m
TR5-95-3	7142686N 373973E	Same as above, 1 m south of TR5-95-2.	238		10.6	3.8%	311	384	Chip 1.0 m
TR5-95-4	7142685N 373973E	Poorly exposes rusty siltstone with, 1% Apy, 2% Pyrite.	127		2.4	1.2%	299	73	Chip 1.0 m
TR5-95-5	7142684N 373973E	Same as above	208		3.2	5595	156	109	Chip 1.0 m
TR5-95-6	7142683N 373973E	Same as above.	50		3.5	7920	151	172	Chip 1.0 m
TR5-95-7	7142682N 373973E	Rusty weathering green sericite and scorodite rich grit	3280	2.93	1.6	713	175	16	Chip 1.0 m
TR5-95-8	7142681N 373973E	Medium grained siltstone, slightly calcareous, diss. Py 1-2%	20		0.1	132	20	<	Chip 1.0 m
TR5-95-9	7142680N 373972E	Medium grained siltstone, slightly calcareous, diss. Py 1-2%	13		0.3	68	6	<	Chip 1.0 m
9518BA1	7141800N 374450E	Float from creek by camp. Fine grained quartzite with qtz veins, diss py, cpy.	50		22.0	464	1225	221	Chip 1.0 m
951801301	7142755N 373837E	Quartz grit with 1-2% diss. Py and APY, trace Stibnite, Limonitic rusty surface. Py occurs as well formed cubes to 2-3 mm.	217		0.5	9051	80	<	Chip 1.0 m

SAMPLE NUMBER	LOCATION (UTM)	DESCRIPTION	Au ppb	Au g/mt	Ag ppm	As ppm (%)	Sb ppm (%)	Bi ppm (%)	Type
951801302	7142772N 373855E	Quartz grit, bluish-grey on fresh surface. Very rusty weathering. Open space qtz terminations. Diss Py cubes to 1-2%. Trace stibnite in irregular small veinlets.	320		4.7	404	132	33	Chip 1.0 m
951801303	7142778N 3738537E	Quartz veins in grit, no specific orientation, diss. Py, Apy and trace stibnite. Bedding 070/45°. Vugs contain coarse cubic pyrite. Limonite stain.	2530	0.44	1.5	974	80	14	Chip 1.0 m
951801401	7142704N 373963E	Massive Apy, and stibnite, minor pyrite as large cubes, free growth quartz.	3490	2.45	36.5	15%	1916	795	chip 1.0 m
951802300	7142670N 373840E	Quartz vein with minor calcite from grit float, blebby Py, Cpy ? as vein selvage.	9		1.5	795	17		Grab
951802400	7142700N 373840E	Massive and pod like coarse Apy and Py with quartz, minor stibnite	3460	3.28	10.1	15%	704	212	Grab