

Property File  
104K 079

*Golden Bear Mine  
Deck*

**019968**

REVIEW REPORT  
ON THE  
TOTEM AREA, GOLDEN BEAR PROJECT  
OF  
NORTH AMERICAN METALS CORP.

BY  
K.M. JAWORSKI  
NORTH AMERICAN METALS CORP.

APRIL, 1992

TABLE OF CONTENTS

	<u>Page</u>
1.0 SCOPE OF REPORT.....	1
2.0 PAST WORK.....	1
3.0 RESULTS OF PAST WORK.....	2
3.1 Geology.....	2
3.2 Geophysics.....	4
3.3 Rock and Soil Geochemistry.....	5
3.3.1 Rock Geochemistry.....	5
3.3.2 Soil Geochemistry.....	6
3.4 Diamond Drilling.....	7
4.0 CONCLUSIONS.....	10
5.0 RECOMMENDATIONS FOR 1992 TOTEM WORK PROPOSAL.....	11
6.0 LIST OF TOTEM AREA REPORTS.....	13

LIST OF TABLES

TABLE 1: TOTEM AREA DIAMOND DRILL SUMMARY.....	8
--	---

### 1.0 SCOPE OF REPORT

The goal of this report is to summarize and assess the results of work done on the Totem area by the former owner/operators, Chevron Canada Minerals Ltd. (Chevron) and North American Metals B.C. Inc., with the aim of making recommendations for improving and/or modifying the proposed 1992 Totem work program of geological mapping and I.P. surveys.

This report also summarizes past work done on the property and compiles a listing of reports by the former owners/operators which are currently on file at North American Metals Corp. (NAM).

For the purpose of this report, the Totem area is defined as the area bounded by 26,300 N to 28,500 N mine grid and 24,000 E to 25,100 E mine grid.

### 2.0 PAST WORK

1981 -The TOTEM claim was staked by Chevron.

1982 -The TOTEM 2 claim was staked by Chevron.  
-Chevron established the Totem grid, from 28,350N to 26,450N. The 003 azimuth baseline was located on the east shore of Totem Lake. Rock sampling with analysis for Au, Ag, As, Sb was mainly restricted to grid lines with a large proportion of the samples being on or near the baseline. Soil sampling was done at 25 m spacing, along seven, 100 m spaced lines at the north end of the grid in the Totem Lake area. Soil samples were analysed for Au, Ag, As and Sb.

*Where is this?*

-Chevron conducted 1:10,000 scale geological mapping on the Totem grid and excavated the Totem trench (later renamed Totem trench 10).

*JUST ONE?*

1983 -Chevron established a new Totem grid with a 000 azimuth baseline, located 50-100 m to the east of the 1982 baseline.

*BOTH CORRECT?*

-Chevron conducted VLF-EM (EM-16, Seattle Station) over the Totem grid.

-Geological mapping was done at 1:2500 scale on the geophysics grid.

-Approximately 100 rock samples were collected from the Totem grid for fluid inclusion studies. The results have not been located.

-Chevron carried out extensive trenching and road building.

-Hole T83-23 was drilled to test a VLF-EM conductor coincident with the West Wall Fault.

*1983?  
or what  
1984*

- 1984 -Chevron conducted VLF-EM and total field magnetometer surveys over the 1983 Totem grid.  
 -Chevron carried out geological mapping at 1:1000 scale, presumably with the aid of the 1983 geophysics grid, although the grid was never plotted on the geological map. Rock samples were analysed for Au and Ag.
- 1985 -Chevron drilled (14) diamond drill holes, totalling 2023.88 m, to test three fault zones with coincident VLF-EM conductors.
- 1986 -No work was done.
- 1987 -North American Metals B.C. Inc. conducted 1:5000 scale geological mapping and rock sampling.  
 -North American Metals B.C. Inc. contracted McElhanney Surveying & Engineering Ltd. of Vancouver to carry out air photogrammetry over the Golden Bear mine and surrounding region which included the Totem area. Air photos were produced at 1:8000 and 1:16,000 scale for the Totem area.
- 1988 -Jim Oliver conducted 1:5000 scale geological mapping over the Totem area as part of the regional mapping of the Muddy Lake area for his PhD. thesis.
- 1989 to Present-No work was done.

NO  
 PROBABLY  
 COMPLETE

### 3.0 RESULTS OF PAST WORK

#### 3.1 Geology

The Totem area which extends north from Fleece Bowl to Totem Lake, is underlain by two contrasting geological terrains, mafic tuffs in the west and the Totem Silica Zone in the east.

*lithologies  
 packages  
 rock types*

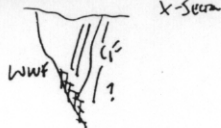
*WHAT IS EAST OF THIS?*

Mafic tuffs outcrop in a wedge-shaped pattern. The "wedge" of mafic tuffs is fault bounded and in contact with carbonate rocks on both margins. The West Wall Fault, which may be an extension of the Fleece Fault, marks the western contact of the mafic rocks while the eastern boundary is marked by the Central Fault. The Central Fault occurs only in the Totem area, merging with the West Wall/Fleece Fault in the Fleece-Totem area to the south.



The West Wall and Central Fault zones are 30 to 120 m wide. Mafic rocks are intensely iron carbonate altered and sheared, with green illite and pyritic quartz veins. Dolomite and limestone are silicified and brecciated. Photographs of drill core indicate that

ACTUAL  
 FAULT  
 ZONES AT  
 THIS WIDTH  
 OR  
 DISTANCES  
 BETWEEN  
 IS THIS  
 WIDTH?



deformation and alteration are extreme, particularly on the West Wall Fault. Pyrite is the dominant sulphide mineral, usually present in amounts of less than 1%. However, areas of extensive disseminated pyrite are present, with 2% pyrite over 35 m in Totem trench 14. Minor hematite alteration is present, especially in carbonate rocks. The West Wall Fault dips steeply east, while the Central Fault dips steeply west. Intersection of the West Wall and Central Faults at depth may provide a locus for gold mineralization. The intersection of the fault zones occurs on surface at 26,300 N to 26,500 N, in the area immediately north of the Fleece geological reserve. Wasylyshyn (1987) suggests that the Central Fault may represent movement along bedding planes associated with major fold structures.

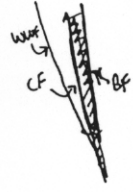
No  
in 1984

Yes

Mafic tuffs are interbedded with siltstone and volcanoclastics and also occur as argillaceous tuffs. Carbonaceous, pyritic argillaceous horizons up to several metres thick occur within the sedimentary package and may act as planes along which faulting occurred. Totem area mafic tuffs are significantly different from those of the Fleece and Bear areas in that they contain significant proportions of clastic material, as opposed to the relatively pure tuffs of the Fleece and Bear areas. In the Totem area a siltstone or argillite unit is transitional between the carbonates and overlying volcanics. This may represent a facies change in the basin from tuffs to argillites. This change in the character of the mafic tuffs occurs north of Surprise Ridge. *may be? - probably argillite also occurs further south.*

J.O.'s  
TRANSITION  
VOLCANIC

The second geological domain of the Totem area is the Totem Silica Zone identified by Chevron. The Totem Silica Zone is a nearly 2 km long by 200 m wide <sup>area</sup> ~~area~~ of silicified dolomites and limestones, which form the eastern half of the Totem area. The Totem Silica Zone is bounded on the west by the Central Fault, and on the east by the Black Fault, which extends south into the Fleece area. Carbonate rocks of the Totem Silica Zone are intensely silicified with silica contents reaching up to 80-90%, in which case the rock type has been termed quartz by Chevron. In many cases it is difficult to distinguish silicified carbonate rocks from primary cherts. At the north end of the Totem area, southeast of Totem Lake, carbonate rocks and/or cherts are more strongly brecciated than to the south. This area of brecciation near Totem Lake may coincide with the merging of the Central and Black Faults.



WE  
MUST  
TRY TO  
IN 1992!

The Totem Silica Zone is bounded on the east by the Black Fault. The Black Fault cuts carbonate rocks 30 to 100 m west of the carbonate-mafic tuff contact. Mineralization is associated with a zone of silica flooding and brecciation within the carbonate package rather than at the contact. In the northern Totem area, southeast of Totem Lake, the Black Fault may coincide with the carbonate-mafic contact. Examination of drill core photographs indicates that deformation on the Black Fault is more intense and occurs over a broader area than the deformation associated with the West Wall and Central Faults.

See  
S. 100  
E. 100  
92/96  
95/111

bigger  
fault  
zone  
or bigger defn. tr  
area.?

Diamond drill holes in the Totem Silica Zone contain traces of disseminated pyrite throughout with up to 1-2% pyrite in areas of anomalous gold. Some of this pyrite is associated with carbonaceous horizons and may be primary sedimentary pyrite.

ARE YOU POSITIVE!

How much %!

Carbonate rocks of the Totem Silica Zone are interbedded with tuffaceous and argillaceous horizons. Similar to the West Wall and Central Faults, carbonaceous, argillaceous horizons may act as planes of movement on the Black Fault.

Chevron found the faults in the Totem area difficult to trace on surface and correlate between diamond drill holes.

REFERENCE?  
EVEN WITH GEOPHYSICS??

3.2 Geophysics

VLF-EM and total field magnetometer have been the only geophysical methods used on the Totem area.

VLF-EM has identified a series of strong conductors coincident with the three major fault zones, the West Wall, Central and Black Faults. VLF-EM conductors are anastomosing and bifurcating in surface plan, with east-west breaks and offsets likely due to late east-west striking fault structures.

CAN YOU PUT YOUR FINGER ON THEM?  
LOCATE THEM?? WERE THESE EVER INTERSECTED IN DDHS?

VLF-EM conductors were the target of most Chevron diamond drilling. Chevron drilling, successfully intersected the VLF-EM conductors which were carbonaceous, argillaceous horizons.

SPEAK W/ RORO AREA RE: SUCCESSFUL FINDING ON CLM TO!

In 1983, Chevron conducted a total field magnetometer survey over the Totem area in an attempt to define lithological contacts. The survey showed little magnetic variation across most of the surveyed area and was unsuccessful in delineating lithologies. The survey did however, define some of the Totem fault structures, with pronounced linear magnetic lows occurring over the Central Fault Zone. The Black and West Wall Faults were not well defined by the survey. Chevron did not consider the magnetic survey a success and did not extend magnetic surveying to the south into the Fleece area when the VLF-EM was redone in 1984.

REFERENCE?

### 3.3 Rock and Soil Geochemistry

#### 3.3.1 Rock Geochemistry

*give # of samples counted 144 to 150*

Numerous rock grab samples have been taken by Chevron and North American Metals B.C. Inc.. Most samples were from ridges of outcrop within topographic highs of the Totem Silica Zone and the western mafic tuffs. Except for trenched areas, very few rock samples have been taken from the recessively weathered, poorly exposed fault zones. Grab sampling of outcrops returned only four samples which were anomalous in either gold or silver from the fault zones, Totem Silica Zone or the western mafic tuffs. Trenching was much more successful in locating rocks anomalous in gold or silver.

*6000*  
*How many trenches (7/11)*

On the West Wall Fault rock samples returning trace Au, 2.2 g/t Ag and 1.0 g/t Au, 17.8 g/t Ag were obtained from silicified dolomites. Totem trench 14, returned 0.2 g/t Au, 4.34 g/t Ag over 12.4 m from the West Wall Fault. Silicified limestones in trench 14, on the east side of the West Wall Fault returned trace Au, 2.55 g/t Ag over 13.9 m and trace Au, 6.2 g/t Ag over 2.0 m. These samples are likely part of the Totem Silicified Zone and the Central Fault. Sampling of trench 14, also returned values of trace Au, 2.78 g/t Ag over 34.85 m and trace Au, 4.00 g/t Ag over 33.65 m from silicified, quartz veined, sulphide free limestone, west of the West Wall Fault.

*HIGHEST Au with this?*  
*HIGH VALUE OF Au ASSOC. WITH CARB. MANY OTHERS AT THIS HI*

Silicified limestones west of the West Wall Fault, such as those exposed in Totem trench 14, host isolated silver occurrences. Five rock grab samples in this area returned values of trace Au, 1.0 g/t Ag. Other anomalous rock grab samples include 0.2 g/t Au, 1.3 g/t Ag and trace Au, 5.0 g/t Ag. "Often the rocks are very brecciated and coarse sparry calcite cement or stockwork is present" (Wasylyshyn, 1987). Diamond drill holes, T83-23 and T85-106 intersect this style of deformation near the ends of the holes. Wasylyshyn (1987) postulates that the lack of a recognized fault structure may be due to fluids re-healing any deformation.

*5 samples 1 Au*

*WHAT STYLE OF DEFORMATION?*

One anomalous rock grab sample was obtained from the Central Fault Zone. The sample assaying 0.3 g/t Au, 2.9 g/t Ag was from the northern part of the fault, south of Totem Lake. Also in the north central Totem area, trenches 23 and 20 returned values of trace Au, 6.46 g/t Ag over 8.6 m from sheared greenstone with minor bleaching style alteration. In the same trench a mixture of sheared greenstone with quartz stockwork and <2% pyrite, brick red weathering sheared greenstone, sericite-chlorite phyllite and silicified phyllite assayed trace Au, 14.40 g/t Ag over 26.25 m. Totem trench 15, which exposed the Central Fault, 50 m north of trench 14, returned trace Au, 2.42 g/t Ag over 25.0 m from sheared, quartz veined greenstone and massive limestone. Trench 15, also

returned trace Au, 4.07 g/t Ag over 20.0 m from sheared, bleached greenstone with some fault gouge.

On the Black Fault, there are no anomalous rock grab samples. However, trenching in the Fleece-Totem area, east of Surprise Ridge has exposed rocks anomalous in silver. Totem trench 10, returned 0.1 g/t Au, 6.75 g/t Ag over 11.0 m in altered greenstone with 1-2% pyrite, carbonate veins, some fault gouge and possible arsenopyrite, and 0.2 g/t Au, 5.15 g/t Ag over 4.0 m from carbonate altered greenstone.

In the Totem Silica Zone, only one anomalous rock grab sample was obtained, despite fairly extensive sampling. The sample, taken 50 m southeast of Totem Lake, returned 0.3 g/t Au, 10.7 g/t Ag. Trench maps and analytical results for Totem trenches 25 and 26, which attempted to expose the Totem Silica Zone and northern Black Fault are not currently on file.

### 3.1.2 Soil Geochemistry

Most of the Totem area has not been soil sampled. South of 27,750 N (Trench 23 area) only two soil samples have been taken. Grid controlled soil sampling in the Totem Lake area has resulted in numerous soil anomalies within the Totem Silica Zone, particularly southeast of Totem Lake, where brecciated, silicified carbonate rocks are in contact with mafic tuffs to the east. In this area, the Black Fault may occur at the carbonate-mafic contact. Several soil samples in the 40 to 70 ppb Au range are present with other samples containing 130 and 160 ppb Au respectively. Although individual gold values are not extraordinarily high, they are definitely anomalous when compared to the values of 5 ppb Au typical of other samples.

Several anomalous soil samples containing 35 to 155 ppb Au occur within the central Totem Silica Zone at 27,750 N.

Rare isolated soil anomalies ranging from 35 to 205 ppb Au are also associated with the West Wall and Black Faults, and carbonate altered zones within mafic tuffs away from the major faults.

ENCOURAGING.



### 3.4 Diamond Drilling

BUT IF THIS DEFORMATION ALONG A  
TRANSITIONAL VOLCANICLASTIC/CARBONATE CONT.  
IT REPRESENTS DEFORMATION DUE TO DIFFERENTIAL  
ROCK STRENGTHS ... ?

*7/25/87* { Fifteen diamond drill holes, totalling 2229.31 m were drilled in the Totem area. Most of the drilling was done on the West Wall and Black Faults. All drill holes in the Totem area encountered extensive shearing and/or brecciation and extreme alteration. Examination of core photographs along with comments by Wasylyshyn (1987) suggest that deformation is strongest and widest on the Black Fault. Drilling on the Black Fault intersected narrow zones of anomalous gold, while intercepts on the West Wall and Central Faults were broad zones of anomalous silver, with very rare narrow anomalous gold intersections (Table 1).

*near Black Fault* { On the West Wall and Central Faults, anomalous silver intersections are typically 1 to 2 g/t Ag over 5 to 40 m (drill width). Anomalous gold intersections are rare, with 1.2 g/t Au, 3.4 g/t Ag over 1.9 m in hole T83-23 being the only anomalous value. Generally, gold was <0.1 g/t in all drill samples. Although anomalous silver values over large widths may be associated with either a carbonate or mafic host rock as seen in trench 14, many of the anomalous silver values are within silicified and brecciated carbonate rocks west of the West Wall Fault. This correlates with surface grab samples also anomalous in Ag in the 1 g/t range from this area.

{ Diamond drilling on the Black Fault intersected anomalous gold values in each of the five holes drilled. Anomalous gold intersections occurred in or near to the Black Fault and were typically 1 to 2 g/t Au over 0.5 to 3.0 m (drill width). However, holes T85-92, T85-96 and T85-111 drilled beneath Totem trenches 10 and 9 have narrow anomalous gold intersections while the surface trenches exhibit broad (4-21 m wide) zones of anomalous silver. Perhaps this is indicative of gold enrichment at depth.

The Totem Silica Zone has been drill tested by two holes. Hole T84-104, drilled 200 m south of Totem Lake, intersected extensive silicification in carbonate rocks. The best results were trace Au, 1.46 g/t Ag over 6.74 m and trace Au, 1.00 g/t Ag over 6.14 m. The Totem Silica Zone was tested in the Fleece-Totem area by hole T85-92 which encountered silicified and/or brecciated carbonate rocks throughout, with a broad low grade silver intersection (trace Au, 1.1 g/t Ag over 24.15 m).

Many Errors in Table w.r.t.  
which holes are on which faults

80-100  
75-90

TABLE I: TOTEM AREA DIAMOND DRILL SUMMARY

Collar Elev.	AREA	HOLE NO. Pierce Point	LENGTH (m)	TARGET	BEST INTERCEPT (gpt Au, gpt Ag/m)	HOST ROCK OF INTERCEPT	STYLE OF MINERALIZATION	COMMENTS	Depth Below Surface of Prospect		
1758m	West Wall Fault	T83-23	1714m	224.33	VLF-EM Conductor	0.2%, 3.27/54.43 includes 1.24, 3.40/1.90	Silicified Limestone and Quartz Limestone Breccia	0.03% py, calcite vn. stockwork	Alteration to E.O.H.	44m	
1798m		81m	T85-98	1782m	112.16	VLF-EM Conductor	<0.01, 1.25/22.89	Silicified Limestone	50% Silica, Limonitic	Alteration to E.O.H.	16m
1850		107m	T85-100	1805m	152.1	VLF-EM Conductor Totem Trench 14	<0.01, 1 to 2/41.65	Sheared Mafic Tuff	7% calcite veins, 1% hematite veins, 50% of core is bleached	61.16 m of Silicified Lmst. and Dol. +/- Qtz. Breccia at E.O.H.	45m
1714		88m	T85-102	1648m	126.19	VLF-EM Conductor	<0.01, 1.70/3.25	Silicified, Brecciated Lmst.	0.1% py, up to 80% silica	0.27 m of Silicified Lmst., Dol. at E.O.H. Several 1 gpt Ag over 1 to 2 m	66m
1730 00		86m	T85-105	1690m	119.18	VLF-EM Conductor	<0.01, 2.1/1.90 <0.01, 1.0/0.95	Argillaceous Siltstone Silicified, Brecciated Dolomite	1% py, 1% fuch, 5% qv, 5% dol. v 0.03% hematite	34.53m of Silicified Dol. at E.O.H.	40m
1910		118m	T85-106	1807m	160.32	Totem Trench 14	<0.1, 1.33/5.80	Sheared Siltstone or Ash Tuff	5-10% quartz veins	Collared Forward of West Wall F.	103
			SUBTOTAL	894.28							
1764	Central Fault	T85-94	1735m	105.16	VLF-EM Conductor	<0.1, 2.36/5.15	Hematitic Tuff-Sil. Lmst. Contact	5-20% silica, 0.1% py	Hole 95 is beneath hole 94	29	
1764m		93m	T85-95	1722m	102.72	VLF-EM Conductor	<0.1, 1.76/11.05	Hematitic Tuff-Sil. Lmst. Contact	5-56% silica, up to 20% py	56.62 m Sil, Bx Lmst at E.O.H.	42
1877		86m	T85-103	1829m	122.53	VLF-EM Conductor	<0.1, 1.70/0.92 <0.1, 1.0/1.65 <0.1, 1.0/1.60	Silicified Tuff Silicified Dolomite Silicified Dolomite	90% silica, 0.1% py 2.5% hematite, 0.1% pyrolusite 2.5% hematite, 0.1% pyrolusite	Entire hole strongly deformed and altered. Strong limonite in dolomite.	48
			SUB TOTAL	330.41							

Vert.  
Depth  
of Hole

Elev.  
of  
this  
interception?

WHAT ROCK  
TYPE  
HIGHLIGHT  
THE  
DIVISIBILITY  
ASPECT?

Depth  
Below  
Surface  
of Prospect

Back.  
97  
98

TABLE 1: TOTEM AREA DIAMOND DRILL SUMMARY (CONT.)

Depth  
Below Surface  
of Driller Point

*elevation?*

Collar  
Elev

1925

1850

1925

1800

1900

1691

AREA	HOLE NO.	LENGTH (m)	TARGET	BEST INTERCEPT (gpt Au, gpt Ag/m)	HOST ROCK OF INTERCEPT	STYLE OF MINERALIZATION	COMMENTS
Black Fault 204m	T85-92 <i>Pillar Point</i> 1868m	285.29	VLF-EM Conductor on Black Fault Totem Silica Zone	2.0, <0.3/0.49 <0.1, 1.1/24.15	Sil. Siltstone/Tuff at Tuff-Dol. Contact Black Quartz or Chert	90% silica, 0.3% hematite, black ie. Black Fault Minor calcite vein stockwork	Most of hole in silicified, brecciated dolomite.
Fleecer Area.	T85-93	102.72	VLF-EM Conductor	1.4, <0.3/1.10	Limestone at Linst-Dol Contact	90% silica, quartz-calcite veins limonite, brecciated	
127	T85-96 1854m	139.29	VLF-EM Conductor	1.58, <0.3/3.01 1.68, <0.3/7.55 includes 3.9, <0.3/1.3	Argillaceous Siltstone Black Carbonaceous Quartz	quartz breccia	Shearing, brecciation and silicification throughout hole.
93m	T85-101 1773m	131.67	VLF-EM Conductor	1.79, <0.3/2.46	Black Fault-black, carbonaceous	brecciated qtz fragments	
131	T85-111 1793m	181.97	VLF-EM Conductor on Black Fault and Conductor on Mafic Tuff-Limestone Contact East of Fault	1.80, 0.70/1.10	Silicified Limestone, Siltstone	minor hematite	Entire hole strongly sheared and silicified with qtz-calcite veins, sericite, fuchsite and carbonate in tuffs.
SUB TOTAL		840.94					
Other 102m	T85-104 <i>Not relevant.</i>	163.68	Totem Silica Zone, south of Totem Lake	<0.1, 1.46/6.74 <0.1, 1.00/6.14	Silicified Limestone Quartz Dolomite Breccia		Extensive silicification throughout hole.
SUB TOTAL		163.68					
TOTAL		2229.31					

57

71

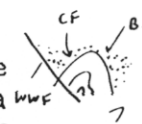
27m

108m

#### 4.0 CONCLUSIONS

- 1) The Totem area contains large alteration zones which are apparently barren of gold at surface, although extensive areas of anomalous silver exist. Much of the surface of the Totem area has been mapped and prospected, hence it is unlikely that significant gold mineralization is exposed at surface. The very large scale of the alteration, combined with diamond drilling on the Black Fault suggests that gold enrichment may occur at depth. The Totem area, is situated at an elevation 300 to 400 m above the Bear Zone. Potential exists for gold mineralization at depth in the Totem area, at an elevation similar to that of the Bear deposit.
- 2) The primary targets for gold mineralization in the Totem area are:
  - a) the Black Fault
  - b) the West Wall Fault
  - c) the Central Fault
  - d) the Totem Silica Zone, especially southeast of Totem Lake where anomalous gold in soil, coincides with brecciated, silicified carbonate rocks, the carbonate-mafic tuff contact and the Black Fault.
- 3) The area north of Totem Lake may represent a fold nose where the Central and Black Faults may merge. It represents an area of potential gold mineralization which has not been soil or rock sampled to date, possibly due to drift cover.
- 4) The area between Fleece Bowl (26,250N) and 27,750 N has never been soil sampled, except for two reconnaissance soil samples.
- 5) Most of the Black, West Wall and Central faults have not been trenched, with gaps in surface sampling on the scale of 1 km. Although Chevron carried out detailed trench mapping and sampling, many of these maps cannot be located. Trench maps are missing for Totem trenches 8, 21, 22, 24, 25 and 26.
- 6) Comparison between maps presently on file and descriptions of work done from Chevron and North American Metals B.C. Inc. reports, suggests that a large number of reports are missing, especially Chevron in-house reports.
- 7) The relationship between rock samples and specific outcrops is uncertain for many of the Chevron and North American Metals B.C. Inc. sampling. This combined with missing sample descriptions makes determination of the material sampled impossible. Thus, a resampling of rocks is required in order to relate geochemical results to lithology, alteration and structure. A geological model can then be generated with which to target future exploration.

mis above  
FLSBCS ?  
OR Fleece.



- 8) The stratigraphy of the Totem area is not thoroughly understood and may differ from the Bear and Fleece areas. Folding likely exists in the Totem area but has not been well documented by mapping. Future mapping should attempt to define stratigraphy and fold patterns, in order to identify contrasting rock types which are in fault contact and hence may provide areas for potential gold mineralization.

5.0 RECOMMENDATIONS FOR 1992 TOTEM WORK PROPOSAL

DO WE WANT  
TO MAP ALL  
IN 1992??

- 1) A minimum of 21.05 km of picketed grid crosslines is required to provide control for 1:1000 scale geological mapping. This would involve a 2.2 km long baseline with crosslines at 100 m spacing. Decreasing line spacing to 50 m would be beneficial, but would double the line km of gridding.
- 2) 1:1000 scale geological mapping should be accompanied by approximately 500 rock grab samples. Rock analyses should provide Au determinations to the ppb level, and Ag to the ppm level, as compared to the g/t analyses presently provided by the Golden Bear assay lab. Rock analysis should also include As, Sb, and possibly Hg. The lower Au and Ag detection limits, along with analysis for the pathfinder elements As, Sb and Hg is necessary in the Totem area to identify and interpret subtle geochemical trends which must be understood in order to predict the location of possible buried mineralization. To obtain the required analytical techniques, it will be necessary to ship rock samples to a commercial lab. Costs for analyses at Acme Analytical Laboratories Ltd. in Vancouver would be as follows:

OUTLINE ON A  
MAP.  
JEN?  
BUDGET?  
PICKETS?  
TIME?  
HOW MANY  
MAP THIS  
1000 ppb = 1 g  
1 ppm = 1 g/t

Rock Prep. + 30 Element I.C.P. + 1 A.T. Au by A.A.  
= \$13.25/sample  
plus Hg= \$2.75/sample extra

It may be possible to carry out rock preparation at the Golden Bear lab thereby reducing shipping and rock preparation charges. However, possible contamination of exploration samples from preparation of high grade mine samples in the same lab is a consideration.

- 3) Soil sampling should be done over the entire grid, with sample spacing at 25 m along grid lines. This would require the collection of 865 samples. Soil samples should be analyzed for Au, Ag and the pathfinder elements As, Sb and Hg present in the Bear deposit, in order to detect possible leakage haloes from buried mineralization. Soil sampling may be used to screen areas for possible trenching or diamond drilling.

TILL  
COVER  
MAY  
BE  
TOO  
MUCH  
IN THE FALL

## 6.0 LIST OF TOTEM AREA REPORTS

Note: The following list includes reports covering the Totem Area as defined in this report, not the TOTEM or TOTEM 2 claims which cover a larger area.

Brown, D., and Thicke, M., 1983. Assessment Report Trench Geology and Geophysical Survey Totem Group, Atlin Mining Division Tatsamineie Lake Area, B.C. N.T.S. 104K/Tulsequah Sheet. Chevron Canada Resources Limited. Assessment Report number 11663.

Titley, E.D., 1988. Golden Bear Mine Exploration Proposal, BEAR, BEAR 1, TOTEM Mineral Claims, Muddy Lake, Tatsamenie Lake Area, B.C., Claims owned by Chevron Canada Minerals Ltd. and North American Metals Corp.

Wasylyshyn, R., 1987. Review Report on the Totem Mineral Claim Golden Bear Project for North American Metals B.C. Inc.

Wober, H.H., and Shannon, K.R., 1985. BEAR-TOTEM Status Report December 1985. Chevron Canada Resources Limited.

Costs for soil sample analysis at Acme Analytical Laboratories Ltd. would be as follows:

Soil Prep. + 30 Element I.C.P. + 1 A.T. Au by A.A.  
= \$11.00/sample  
plus Hg= \$2.75/sample extra

- 4) Totem trenches 21, 22, 24, 25, and 26 should be cleaned, mapped and sampled, as the original Chevron data from these trenches has been lost. These trenches have a total length of 340 m. Thus, 300 to 350 rock samples could be required to adequately sample the trenches.
- 5) New trenching on the Black, Central and West Wall Faults could be useful in exposing mineralization and identifying possible diamond drill targets. The Black and Central Faults are the most accessible areas from the existing Totem road. The Black Fault in particular should be trenched as it hosts the most bedrock gold anomalies in the Totem area.
- 6) If additional trenching is done on the Totem area it would be necessary to upgrade the existing Totem road.
- 7) Diamond rock saw channel sampling of outcrops in the Totem Silica Zone, especially in brecciated limestones southeast of Totem Lake may be useful in determining the gold tenor and distribution of the Totem Silica Zone at surface.
- 8) Relogging of the 15 Totem area diamond drill holes should continue as planned. Little additional core sampling will be required.
- 9) Proposed I.P. surveying should not be done until geological mapping is completed to aid in the selection of survey areas. Present knowledge of the Totem area is inadequate to select survey areas.

TRENCHES ON BLACK FAULT?

RE-LOG  
MAP

BUILD SECTIONS

LONG ISLANDS

I.P. SHOULD BE DONE!

CAREFUL WITH ADDITIONAL

RE-TRENCHING OPERATIONS

UPGRADE ROAD IS PLANNED

SOIL - DOUBT THE VALUE

ROCK WORKING - I HAVE MORE

LOOKING FOR DEPOSIT, BUT EX-RICH TARGETS  
BUT FOR MORE PARTS IN THIS!  
CONTINGENT ATTEMPTS  
ANY AG PROBABLY  
OFF SITE

DIAMOND SAW?  
WASTEX PUMP? - INSTEAD OF STEAM!