INTERMEDIATE ECONOMIC STUDY

BEAR TOTEM GOLD PROJECT

MUDDY LAKE, B.C.

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A. INTRODUCTION

CHEVRON CANADA RESOURCES LIMITED of Vancouver is attempting to find a compatible company to operate and earn an interest in its wholly-owned Bear-Totem Property, Muddy (or Bearskin) Lake, B.C.

While the property has been drilled to a great extent and tonnage/grade estimates can be quite reliably made, metallurgical and engineering studies have not progressed beyond the preliminary stage and the property is not yet ready for a production decision.

This "intermediate economic study" examines the justification for major spending in the next stage and determines whether or not Kerr Addison Mines should seek acquisition of a major operating interest in the Project.

This study has been done in as much detail as time and readily available information permitted. Its weakness lies in estimating operating and capital costs for mining and milling methods not yet properly determined and without similar projects to compare with.

F. Chow did the ore reserve calculations and carried out some of the cost studies, D. Arscott studied the geological controls and the potential for new ore and the writer compiled this report. Access to Chevron's data and key personnel locally was utilised to the full.

B. SUMMARY AND RECOMMENDATIONS:

The Bear Totem (or "Muddy Lake") claims lie in NW British Columbia on the E edge of the Coast Range Mountains some 46 miles WNW of Telegraph Creek. Access to date has been by winter road and air. Mining operations would require building a 90 mile road linking the property with the Cassiar Highway system at a point some 290 miles from tidewater.

Gold mineralisation occurs in a north trending, braided, fault system some 9 miles long of which 4 miles have been expored by drilling in varying degrees of detail. The main host rocks are Permian volcanic tuffs and limestone variously faulted, brecciated, silicified and otherwise altered.

Two metallurgical classes of ore can be distinguished:

OXIDE ORE from which the gold can be extracted easily by direct cyanidation

REFRACTORY ORE which requires some pre-treatment (such as roasting) before the gold becomes readily extractable by cyanidation.

Much remains to be done to determine the best extractive process for the refractory ore.

Only one of the mineralised zones within the fault controlled ore-trend has been drilled in detail - the BEAR DEPOSIT and even it deserves more drilling at depth and on strike. Drill hole spacing over a strike distance of 1250 feet and to a vertical depth up to 492 feet, permits our calculation of the following "Drilled Proven + Probable Reserves" for part of the Bear Zone:

		UNDILUTED		DILUTED	
	Avg. True Width(Ft)	Short Tons	ozs/ton Au	Short Tons	ozs/ton Au
Refractory Ore:	15.4	443,253	0.466	548,347	0.387
Oxide Ore:	21.8	351,183	0.314	374,536	0.297

For both classes of ore the minimum mining width is 5 feet and the cut-off grades for the refractory and oxide ores are 0.2 ozs/ton and 0.15 ozs/ton respectively.

"Drilled Possible Reserves" as defined in this report, on the Bear Zone, as well as both "Drilled Probable" and "Drilled Possible" on the Fleece Bowl Zone, may add substantially to the above figures. (see attached Tables).

Based on only the above Drilled Proven/Probable Reserves calculated for the Bear Zone we have formatted and tested the following mine model:

- open pit mining all of the Oxide Ore at 300 t.p.d
- underground mining all of the Refractory Ore at 300 t.p.d.
- milling rate 300 short tons per day, 105,000 tons per year
- treating oxide ore by direct cyanidation
- pre-treatment of refractory ore by roasting followed by direct cyanidation.

The recommendation is that Kerr Addison Mines Limited negotiate with Chevron Canada Resources to acquire at least a 50% interest and operating control in the subject property. As a first year work commitment we should be willing to spend at least $1.5 million with an option to withdraw thereafter. The funds would be spent on exploration and development drilling, metallurgical test work, engineering (feasibility studies), road and site surveys and environmental/permitting.

Negotiations with Chevron should start immediately so that in the event of agreement, field operations could begin in May 1986.

I. GENERAL SETTING, ACCESS, CAMP INVENTORY

1.1 Topography

Muddy Lake lies within that part of the E border of the rugged Coast Mountains wherein all streams drain eastward towards the more subdued topography of the Taku and Nahlin Plateau. The nearest major lakes are Tatsamenie and Trapper, 8 and 20 miles to the NW respectively. Muddy Lake is in the headwater catchment area of the Samotua River, a tributary of the Sheslay River which in turn feeds the Inklin River and ultimately the Taku River out to the Pacific Ocean. Elevations along the established mineral trend of the property vary between 4100 and 6000 feet, Muddy Lake is at 3500 feet and within the Bear Deposit the extremes are 4400 and 4900 feet. The latter occurs at the South end of the Bear-Totem trend, on a South facing ridge or spur between two small creeks which feed the Samotua. The topography is relatively subdued compared to the jagged ice capped peaks and snowfields immediately to the west and avails itself to relatively easy access from the east.

1.2 Location/Regional Access

Muddy Lake is 46 miles WNW of Telegraph Creek (see Figure 1), a small native-dominated community with few facilities and 85 miles WSW of Dease Lake, a small town on the Cassiar Highway which is mainly a centre for northern supplies distribution and a base for highway maintenance. The nearest mining community is Cassiar some 73 miles N of Dease Lake on the highway. Telegraph is connected to Dease by 60 miles of rough road. The Cassiar Highway, at least half of which is paved, is a major northern route through B.C., connecting the Alaska Highway with the main B.C. Highway system. Dease Lake is 253 miles by highway to Stewart on tidewater, and 318 miles from the rail (see Figure 1).

1.3 Local Access

According to Chevron's plan, access to the property for mining purposes requires building 90 miles of dirt road (see Figures 1 and 3) from a point on the Telegraph-Dease road known as Tuya Crossing, 17 miles E of Telegraph. The potential environmental effects of such a road are reviewed later but it should be stated here that the study of the road impact must form an integral part of the next development phase of the project.

At the moment, heavy supplies are moved in along a winter bulldozer trail from Telegraph Creek (see Figure 1) some 70 miles long. Fixed wing aircraft from Whitehorse (265 mi), Atlin (132 mi) or Watson Lake (229 mi) provide both winter (on skis) and summer access (on wheels) to Muddy Lake and a gravel strip at the head of it. The strip can be used by Caribou aircraft moving fuel supplies more economically than via the winter route. During breakup (mid May) conditions are soft so mobilisation should be planned in early June. Exploration drilling is feasible through to mid October when cold conditions would require complete winterizing of the camp.

1.4 Camp

The camp is under the care of a watchman. The inventory of supplies and equipment on site includes a fire assay laboratory (operated by Chemex), covered core shacks, a leased D7 Cat, Chevron-owned 931B (1 yard) Loader, Chevron-owned I.H. Dump Truck (10 ton), Connors' diamond drill (Boyles 56A), small tractor, skidoo, radios, TV dish, 2 x 30 KVA generators and a full season's supply of fuel for the drill. In other words, Chevron is all set to go for another field season in the event a compatible partner is not found.

1.5 Climatology

Climatological data for Muddy Lake collected by Chevron in 1983-85 is summarised in Table I attached.

2. PROPERTY

Figure 4 shows Chevron's claim holdings in the area. Some 523 claims cover the main part of the Bear Totem mineralised trend and 504 other claims cover scattered showings up to 30 miles away. All of the ground is wholly owned by Chevron but only the Bear Totem is available in the present package being offered. The other properties are available under a separate deal or deals.

3. REGIONAL GEOLOGY

Figure 5 displays the regional geological context of the various Chevron holdings and Figure 6 the overall geological picture of the Bear Totem Group. The latter lies in the middle of a heart shaped enclave of Permian greenstone, 12 by 24 miles in area, on the eastern edge of the Coast Range Plutonic Complex. Islands of fault bounded limestone "float" in the greenstone block forming irregular truncated shapes. The several fault structures within the enclave have strong northerly, northwesterly land northeasterly trends. While the area was previously actively explored for porphyry copper and molybdenum deposits, the nearest ex gold producer was the Tulsequah Chief some 54 miles to the N. on the Taku River in a quite different setting.

Chevron find was brand new and essentially introduces new metallogenic ideas to this area and opens up possibities of finding like deposits in a setting which has many replicas in the vicinity.

4. LOCAL GEOLOGY AND MINERALISATION

Attached hereto are Exhibits "A" and "B" which are geological notes by Arscott on the Bear and Fleece Bowl Deposits, and Exhibit "C" which is a report on the property as a whole by T.G. Schroeter of the B.C. Department of Mines. Figure 7 is a colorful map of the geology.

The structure hosting the gold mineralisation is a complex, 9 mile long, braided fault system which dips steeply and trends northerly. The southern 2 miles of the system contains 3 main areas of mineralisation (see Figure 8), the BEAR, FLEECE BOWL and TOTEM respectively and 5 potential extensions are peripherals to these zones.

The fault system of which the Bear, Black, Fleece and West Faults are the main ingredients, essentially separates Pre Upper Triassic andesitic tuffs to the east from limestones to the west in the main area of interest. The mineralised zones are marked by distinct alteration, the limestone being pervasively silicified or altered to dolomite-quartz-calcite-pyrite mixtures and the tuffs to ankerite-quartz-calcite-pyrite (+/-fuchsite). Geochemically the zones are enhanced in Au, Ag, As, Sb, F, Hg. In the Bear Zone particularly, most of the ore occurs at the faulted silicified limestone/tuff contact.

Heterolithic breccia is a good host. The gold is sub-microscopic. The main sulphide is pyrite (0.1 to 5%) with traces of arsenopryite and chalcopyrite.

The Bear deposit is associated with a dolomite lens, 2300 feet long by 330-1000 feet in vertical extent, which has been caught up in the fault system. Its usual thickness is 100 feet. The Fleece Bowl mineralisation is similar but is related to a faulted wedge of tuffs surrounded by silicified limestone(see Figure 9). All of the Bear Totem deposits have a strong horizontal control relative to dip extension. For example, while the Bear HW chute was intersected in 17 consecutive drill sections over a strike length of 2000 feet, its down dip extent does not exceed 330 feet for much of its length. The projection of ore from section to section can be made confidently, particularly with the controlling Bear Fault as a guide.

A major underground mining concern is the dilution effect caused by the position of the ore bodies right along a fault (see Figures 10,11) particularly when the fault is the hanging walls (see Figure 10) and/or where the dip flattens locally, as sometimes occurs. In the ore reserve calculations, the dip and nature of the hanging wall has been taken into account when calculating dilution and in places the factor applied has been as much as 230% although the average is 25%. Fortunately the excellent detailed core descriptions provided by Chevron makes for confident dilution predictions.

While the strong horizontal bias of the mineralisation found to date is obvious, the character of the deposits suggest no reason why repetition at depth should not occur. While Schroeter likes to classify the mineralisation as epithermal, which implies a limited vertical range of gold mineralisation in the order of +/- 1000 feet, all factors point to a meso thermal, Motherlode (or Bralorne)- type setting which suggests a much greater vertical range possibilities.

The exposed surface expression of the Bear Deposit (see Figure 13) is a 750 foot long silicified limestone lens, fault bounded and 33-100 feet wide. Trenching consistently gave good values and indicated a higher grade Eastern (hanging wall) zone averaging 0.44 ozs/ton over a true width 19.4 feet and a lower grade Western zone averaging 0.133 ozs/ton over 16.4 feet.

5. ORE RESERVES

5.1 General

For purposes of the economic study all of the Bear Oxide Ore is deemed to be mineable by open pit and the Bear Refractory Ore by cut and fill underground methods. When more reliable operating costs are worked up the pit bottom will of course be fixed as the point at which it becomes more profitable to go underground, regardless of the ore-type being mined.

5.2 Ore Classification

DRILLED PROVEN: two or more ore intersections per cross section. Intersections no further apart than 25 metres (82 feet) up/down dip and along strike. Correlations between intersections based on strong structural and geological controls.

DRILLED PROBABLE: as above but ore-intersections maybe only one per cross section and greater than 25 metres (82 feet) but less than 50 metres (164 feet) apart.

DRILLED POSSIBLE: ore-intersections widely spaced with intervening sub-ore blocks, but evidence continuation of the established ore trend.

INFERRED RESERVES: based on geological inferences and projections, scattered sub-ore intersections and the periodicity of the known ore occurrences along the established trend.

5.3 Open Pit Reserves (BEAR DEPOSIT - OXIDE ORE)

A preliminary pit with 45° walls was designed to extract all of the Oxide Ore. It would be about 731 feet long, 239 feet wide and 97 feet deep. As the table below shows, we have used two cut-offs: 0.15 ozs/ton and 0.10.

In one column all blocks within which all values (ore intersections and surface samples) are above cut-off grade are tabulated. In the rest the internal blocks of "waste" below cut-off but above 0.05 ozs/ton are shown if their inclusion would not lower the grade of the adjacent ore block below cut-off. In the next column the immediate external blocks of "waste", in the walls of the pit, are shown if their inclusion will not lower the grade of the adjacent ore block below cut-off. The .05 and .08 ozs/ton sub cut-offs are designed to cover the cost of milling (Au at $325 U.S. per oz.) these blocks and we feel it is practical to include the lower grade blocks in the total reserve. The reserves have been calculated using two cut-off grades, 0.15 and 0.10 ozs/ton, in view of the uncertainty of what the exact operating costs will be.

The diluted reserves at 0.15 cut-off of 374,536 tons @ 0.296 ozs/ton compare with Chevrons figure of 270,000 tons averaging 0.39 ozs/ton.

5.4 Underground Reserves

All of the Refractory Ore and the Fleece Oxide Ore were considered for underground mining. The minimum mining width assumed was 1.5 metres (5 feet). Due to a bad hanging wall in places, consisting of fault gouge, and an occasional flattening in the dip of the ore zone, dilution was calculated for each intersection individually. The minimum overbreak taken was 1 foot at the grade of the extra material but in several places the hanging wall gouge was taken right to the hanging wall of the fault - dilution up to 230% was sustained but this is an extreme isolated case. The weighted average dilution was about 25%.

The proven and probable open pit and underground reserves were calculated in the classic way by constructing parallel drilled cross sections, interpreting the ore bodies in cross section, measuring the areas of ore panels and extending them half way to the next section. Since detailed drill data were available in a commendably presentable form, we have spent considerable effort in this part of the study and feel the results are credible to the extent of the field data available.

Two cut-off grades were used, 0.15 and 0.20 in the light of the uncertainty regarding the exact operating costs. The possible reserves were calculated in either cross section or longitudinal section depending on the data available.

OPEN PIT RESERVES - BEAR DEPOSIT OXIDE ORE

Cut-off grade 0.15 ozs/ton/min.true width 5 feet/avg.width 20.3

DRILLED PROVEN + PROBABLE

UNDILUTED								DILUTED			
All samples ≥0.15 o/t		Internal Sub-Ore ≥0.05 <0.15 o/t		External Sub-Ore ≥0.08 <0.15 o/t		TOTAL		TOTAL		WTD. AVG. Dil.%	WASTE TO ORE RATIO
TONS (short)	Au ozs/ton	TONS	Au ozs/ton	TONS	Au ozs/ton	TONS	Au ozs/ton	TONS	ozs/ton		
240,588	0.411	73,198	0.103	37,397	0.099	351,183	0.314	374,536	0.296	6.6	1.5/1

Cut-off grade 0.10 ozs/ton/min.true width 5 feet/avg. width

DRILLED PROVEN + PROBABLE

UNDILUTED								DILUTED			
All samples ≥0.10 o/t		Internal Sub-Ore ≥0.05 <0.15 o/t		External Sub-Ore ≥0.08 <0.10 o/t		TOTAL		TOTAL		WTD. AVG. Dil.%	WASTE TO ORE RATIO
TONS (short)	Au ozs/ton	TONS	Au ozs/ton	TONS	Au ozs/ton	TONS	Au ozs/ton	TONS	ozs/ton		
308,776	0.346	20,879	0.076	21,528	0.088	351,183	0.314	374,536	0.296	6.6	1.5/1

UNDERGROUND RESERVES - BEAR DEPOSIT REFRACTORY ORE

Minimum width 5 feet/average width 15.7 feet

DRILLED PROVEN + PROBABLE							
Cut-off grade 0.20 ozs/ton				Cut-off grade 0.15 ozs/ton			
UNDILUTED		DILUTED		UNDILUTED		DILUTED	
TONS	Au ozs/ton	TONS	Au ozs/ton	TONS	Au ozs/ton	TONS	Au ozs/ton
507,974*	0.439	627,024*	0.366	612,267	0.381	740,276	0.325

DRILLED POSSIBLE

3,605	0.461	1,666	0.337	23,908	0.262	33,072	0.202

DRILLED PROVEN + PROBABLE + POSSIBLE

511,579	0.439	631,963	0.366	636,175	0.377	773,348	0.320

UNDERGROUND RESERVES - FLEECE BOWL DEPOSIT OXIDE + REFRACTORY ORE

Minimum width 5 feet/overage width 8.1 feet

Cut-off grade 0.15 ozs/ton

DRILLED PROBABLE				DRILLED POSSIBLE			
UNDILUTED		DILUTED		UNDILUTED		DILUTED	
TONS	Au ozs/ton	TONS	Au ozs/ton	TONS	Au ozs/ton	TONS	Au ozs/ton
219,529	0.249	256,389	0.221	279,947	0.246	323,251	0.221

DRILLED PROBABLE + POSSIBLE

499,476	0.247	579,640	0.221

* These figures are all inclusive. Economic study was based on principal Bear Zone only. (548,347 tons grading 0.387 oz/T)

Oxide Ore comprises about 50% of the Fleece Bowl Reserves but lack of metallurgical data inhibits us from ascribing the oxide ore to a separate metallurgical class at this stage.

For details see Exhibit "D" attached. The Bear reserves at 0.20 cut-off of 512,272 tons @ 0.39 ozs/ton compare with Chevrons figure of 560,000 tons @ 0.39 ozs/ton.

5.5 Ore Reserve Summary

The diluted reserves are:

	op-0.15 ozs/ton c/off ug-0.20 ozs/ton c/off		op-0.10 ozs/ton c/off ug-0.15 ozs/ton c/off	
	TONS	Au ozs/ton	TONS	Au ozs/ton
Open Pit -Proven(Bear Oxide) + Probable	374,536	0.296	374,536	0.296
Underground-Proven+Prob(BEAR REFR)	672.024	0.366	740.276	0.325
Underground-Possible(BEAR REFR)	4,939	0.337	33,072	0.202
Underground-Probable(FLEECE BOWL)	low	low	256,389	0.221
Underground-Possible (FLEECE BOWL)	low	low	323,251	0.221
TOTAL ALL CLASSES +	1,006,499	0.340	1,727,524	0.281

6. EXTRACTIVE METALLURGY

Metallurgical test work carried out to date is summarised in reports by Chevron Research (September 20, 1984), Lakefield Research (January 14, 19185) and Lakefield Research (October 9, 1984), the results of which are summarised in Figures 14-18 attached which Chevron prepared.

6.1 Chevron Research

The head sample used was one 141 lb composite drillcore sample prepared from Bear Refractory Ore. In the report's introduction the writer says that previous tests on Oxide Ore showed the amenability of same to cyanidation with extractions averaging 85%. The refractory sample assayed 0.28 ozs/ton gold, 0.43 ozs/ton Ag, 3.67 % S, 52 ppm Sb, 3.1 ppm Hg and 1500 ppm As. The 29 samples composited to make the test sample varied from .07 to .67 ozs/ton Au, .03 to .86 ozs/ton Ag, 8 to 450 ppm Cu, 1 to 70 ppm Pb, 3 to 204 ppm Zn, 51 to 1150 ppm Mn, 15 to 5300 ppm As, .110 to 84 ppm Hg, 90 to 2250 ppm Fe and 0.6 to 200 ppm Sb. 105 cyanide leach tests were performed on the composite. Straight cyanidation even after 72 hours of leaching failed to recover more than 40% of the gold. Roasting followed by cyanide leaching recovered 85-90% and autoclaving followed by leaching recovered 96-98%. The best roasting results were obtained when the ore was ground to 32% -200 mesh then roasted for 1 to 4 hours at 500c in air. In the autoclave tests the sample was ground to 96% -200 mesh and autoclaved at 180°C for 4 hours using a total over pressure of 250 psig, 11 lbs ferric sulphate/ton and 350 lbs H_2SO_4/ton then cyanide leached for 4 hours with 5 lbs NaCN/ton.

Froth flotation recovered 75% of the gold and cyanidation of the tailings a further 6% for a total recovery of 81%. H_2SO_4 pug leaching (39% recovery), bacterial leaching (44%), cyanide in autoclave leaching (40%), ammonium thiosulphate leaching (44%), chlorine leaching (51%), NaCl roasting (73%) and reductive roasting using carbon (75%) were also tried.

Previous microscopic work concluded that the refractory nature of the gold was due to its microscopic form and its concentration in the black matrix of the ore which consists of an intimate mixture of finely crushed quartz, illite, arsenical/auriferous pyrite.

Our comment is that this was a useful program but limited by the provision of only 1 sample. The conclusions are more damning than they should be as the 9 flotation tests give real hope that bulk flotation followed by roasting and cyanide leaching will give an acceptable gold recovery at reasonable cost. Autoclaving with its high power and reagent consumption (H_2SO_4 etc) is out of the question for such a remote location - the process must be simple and require a minimum of trucking in of supplies.

6.2 Lakefield Research (January, 1985)

Lakefield worked with 4 drill core composites:

B-Bear Zone: pyrite tuff, breccia, silicified dolomite, dolomitic breccia.
T-Totem: silicified limestone breccia, tuff, some pyritic tuff
T77-Totem: silicified dolomite
T66-Totem: felsic dyke.

The assays for these are tabulated below:

	B (sulphidic)	T (non-sulph.)	T77 (non-sulph.)	T66 (sulphidic)
Au ozs/ton	0.26	0.27	0.27	0.57
Ag ozs/ton	0.44	0.15	0.11	0.70
Fe%	3.97	1.45	0.50	4.98
As %	0.09	0.06	0.02	0.16
S %	3.07	0.45	0.20	4.85
CaO %	9.14	11.8	23.10	1.73
Mgo %	5.83	3.50	14.5	1.40
C(T)%	3.66	3.59	9.07	0.66
Co2 %	12.80	12.80	33.40	1.66

Direct cyanidation of the four samples on a bench scale test, resulted in best recoveries of 43%, 89%, 54% and 19% for Bl, T, T77 and T66 respectively.

Two flotation tests on the Bear sample gave recoveries of 53.4 and 76.5% respectively in concentrates assaying 1.2 ozs/ton and 0.45. Unfortunately the concentrate weight recovery of the higher gold recovery test was 44.7% so the ratio of concentration was only about 2:1 - not much of a concentration really. One other flotation test, on the T sample, recovered 42% of the gold in a concentrate assaying 0.66 ozs Au/ton. Cyanidation of the flotation tails recovered at least half the gold therein which gives hope of coming up with a process whereby both the concentrate and tails could be cyanide leached for an overall extraction in the 88% range.

Oxygen pressure leach followed by cyanidation on the B sample resulted (predictably) in up to 97% gold extraction, using neutral, acidic and alkali solutions: however going to this method for such a remote location would be a last resort.

Our comment is that the tests were by no means exhaustive and the flotation route should be thoroughly explored in the future.

6.3 Lakefield Research (October 1985)

Cyanide tests were conducted on 37 drill hole assay rejects to help delineate the oxide/refractory boundary in the 15 holes represented. The sulphide ores gave recoveries in the 4-35% range while the non-sulphides ranged from 61-96% with a definite bias towards the 80's and 90's.

6.4 Overview

The oxide ore is obviously readily amenable to cyanidation and presents no problem. The refractory ore is actually not as bad as we had been led to believe and for the moment a simple roasting/leaching procedure will be assumed the route to go until thorough metallurgical test work has looked at all the other possibilities, particularly more flotation studies,ammonium polysulphide leaching (Anglo American Process), etc. The ore is not highly sulphidic so if roasting becomes necessary it should not be difficult to design an effective scrubbing process to remove the environmentally sensitive elements.

In future studies it is essential that the ore samples should be selected carefully so as to represent each ore-type in the deposits and the proportion of total tonnage of ore represented by that ore-type should be noted, something that is unfortunately lacking in the work done to date. Metallurgical studies on composite samples can be very misleading especially if the individual samples making up the composite carry equal weight whereas in fact many represent varied proportions of ore tonnage.

The oxide ore of Fleece Bowl, while lower grade than the Bear, has attractive potential but its value cannot be quantified because of lack of metallurgical data.

7. MINING PLAN, SCHEDULE, COST ESTIMATES

7.1 Schedule

The mining plan evaluated in this report involves the following stages:

STAGE I (1986 and part of 87)

- start of proper engineering studies to determine all cost factors relating to the project and initiate some plant design
- intensive metallurgical test work on the refractory ore, flowsheet design, cost estimate
- environmental studies particularly of the proposed road and its various drainage crossings, submission of project prospectus to Government and initiate permitting process
- survey, quantify materials needed and layout the road
- initial stripping of the Bear oxide ore to clarify geological and structural details prior to going underground
- fill-in drilling of the Bear and Fleece Bowl particularly the latter which will appreciably increase reserves and perhaps in the leachable oxide category
- from the above compile a feasibility study and decide whether or not to initiate Stage II.

STAGE II - 1988

- initiate steps towards mining the Bear Oxide Ore at 300 tons per day by mid 1988
- drive an adit in the refractory ore to confirm grade and geological features
- construct the road unless cost estimates from Stage II indicate a winter trail/summer fly-in schedule is more economic
- do exploratory drilling to find extensions of known zones and expand initial indications of new ones.

STAGE III - 1988

- complete construction of production facilities
- commence mining open pit ore by mid year
- continue underground development
- continue property and regional exploration

STAGE IV - 1989 and later
- continue underground development until open pit ore is exhausted
- build roaster if no other alternative process for treating the refractory ore emerges
- continue property and regional exploration

7.2 Investment Required

The main cost ingredients are tabulated below. Please note that these are the best estimates we can come up with at this time. They are not based on a detailed work up of costs from designs or contacts with suppliers since at this point Chevrons engineering and metallurgical data base is minimal. We have generated the cost by factoring up or down from data derived from Blackdome (200 tpd), Mount Skukum (300 tpd), Ericksen Mines (200 tpd), Macassa (300 tpd), Hoyle Pond (300 tpd), Star Lake (200 tpd), Underground Mine Cost CAlculation Form (factor method), discussion with Kilborn and others, personal experience with due allowance for the remote location and the potentially complex metallurgical process.

We have assumed financial help from the B.C. Govt. will be forthcoming with respect to the access road (see Exhibit E), both in the planning - survey stage and the construction.

	($000'S)					
	TOTAL	1986	1987	1988	1989 1990	1991
1. EXPLORATION DRILLING	1,825	$1,125	$700	-	-	-
2. METALLURGICAL TESTING & DESIGN	120	60	60	-	-	-
3. ENVIRONMENTAL & PERMITS	50	25	25	-	-	-
4. ENGINEERING DESIGN & MANAGEMENT	200	100	100	-	-	-
5. ROAD SURVEY & DESIGN & OTHER SURVEYS	125	100	25	-	-	-
6. OPEN PIT DEVELOPMENT	330	30	300	-	-	-
7. ADIT	790	50	290	250	200(1989)	1,250
8. UNDERGROUND DEVELOPMENT	2,000	-	250	250	250(1990)	
9. ROAD CONSTRUCTION	4,500	-	4,000	500	-	-
10. MINE CAPITAL COST	1,000	-	500	500	-	-
11. MILL CAPITAL COST	6,000	-	3,000	3,000	-	-
12. ROASTER CAPITAL COST	6,000	-	-	-	-	6,000
13. OTHER CAPITAL COST (incl. WC)	8,000	-	3,000	5,000	-	-
YEARLY TOTALS	30,940	$1,490	12,250	9,500	450	7,250

In Summary:

	Pre-Production	During Production	Total
Exploration Drilling	1,825,000	-	1,825,000
Feasibility & Development	1,415,000	2,200,000	3.615,000
Road Construction	4,500,000	-	4,500,000
Mine Capital	1,000,000	-	1,000,000
Mill Capital	6,000,000	-	6,000,000
Other Capital(incl. working capital)	8,000,000	-	8,000,000
Roaster Capital (if needed)	-	6,000,000	6,000,000
	22,740,000	8,200,000	30,940,000

7.3 Operating Costs

Bearing in mind the reservations stated in the preamble to this section the following operating costs have been used in the economic analysis of the mining plan.

	COSTS PER SHORT TON Open Pit Oxide Ore	Underground Refract. Ore
Mining Waste 1.50 x 1.50 =	2.25	N.A
Mining Ore	2.00	50.00
Milling	22.00	22.00
Gen.Plant & Administration	23.00	28.00
Sub-Total	49.25	100.00
Roasting	n.a.	15.00
Total Operating Costs	$ 49.25	$115.00

8. ECONOMIC EVALUATION

The attached financial analyses are based on the cost assumptions stated above. It is important to note however that:

A. The reserves used in the analysis are only the Bear PROVEN + PROBABLE i.e. no account has been taken of the Fleece Bowl Reserves or any Bear Possible Reserves or any Inferred Reserves.

B. Since the exploration recommended for 1986 is to find new ore (a high probability) that is not accounted for in the cash flow analysis, this expenditure is not used in the computation of the rate of return and other financial parameters.

This report had to be terminated prior to running off the financial analysis due to an impending trip out of town. However it does appear that while the rate of returns are not exceptional, the project has merit and deserves the recommended 1986 investment bearing in mind that the purpose of this report was to justify this expenditure NOT to decide whether or not a production decision could be made.

Also it is strongly emphasized that this is just one scenario in which many arbitrary assumptions have been made - such as where the mine will change from open pit to underground. Increasing the open pit alone could considerably enhance the economics of the deposit. So too could the solution of the flotation problem making it possible to avoid roasting with its concurrent high capital and operating costs. The "access road" is another big unknown that only detailed surveys and studies can evaluate - it could be that this alone could thwart development of the project, "blessed" as it will be with the involvement of Native Peoples, the B.C. Government and the Environmentalists!

April 1986

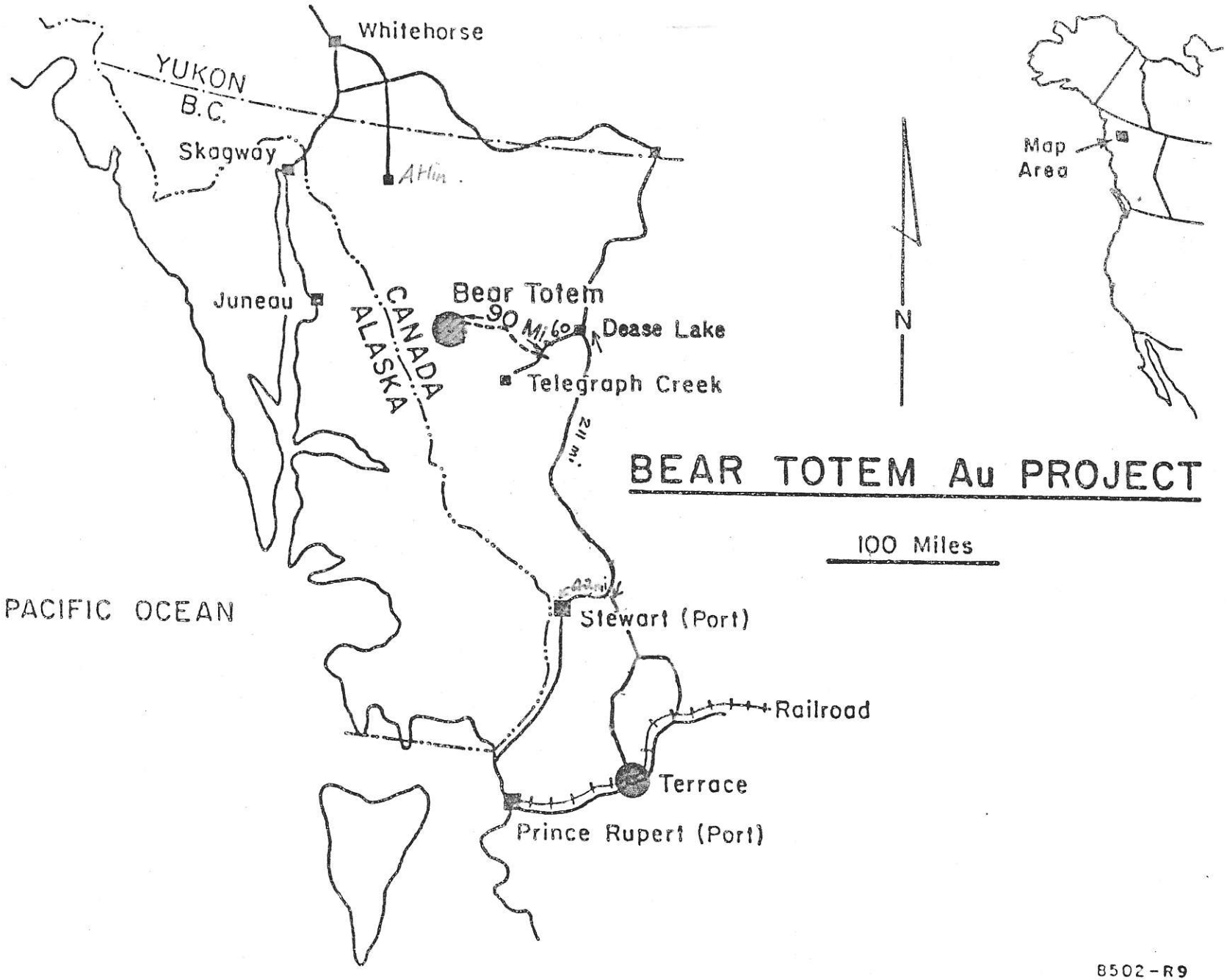

Whitehorse
YUKON
B.C.
Skagway
Juneau
CANADA
ALASKA
Bear Totem
90 Mi 60
Dease Lake
Telegraph Creek
211 mi.
PACIFIC OCEAN
Stewart (Port)
Railroad
Terrace
Prince Rupert (Port)
N
Map
Area
BEAR TOTEM Au PROJECT
100 Miles
8502-R9

FIGURE 1

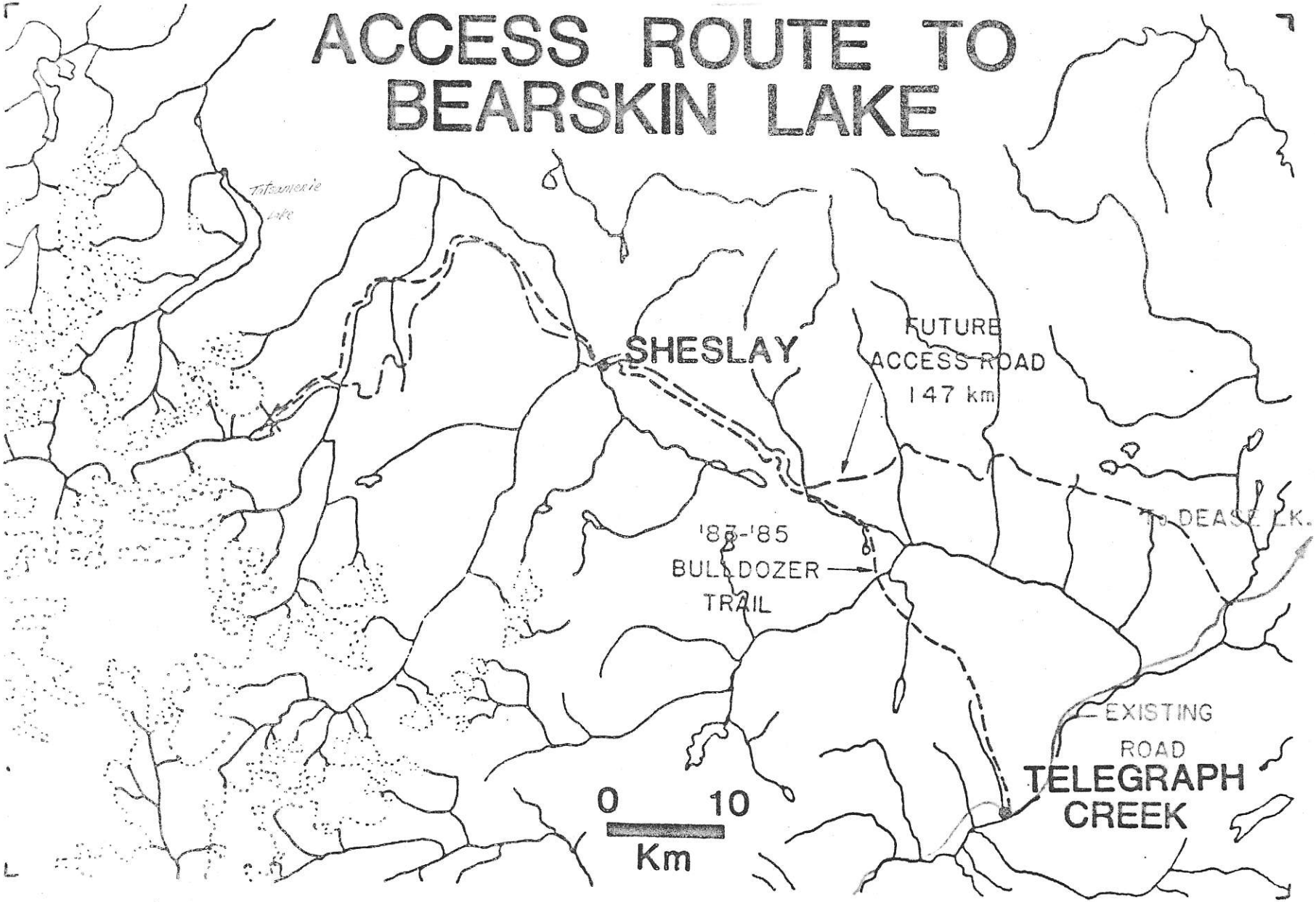

ACCESS ROUTE TO
BEARSKIN LAKE
Tatsamenie
Lake
SHESLAY
FUTURE
ACCESS ROAD
147 km
'83-'85
BULLDOZER
TRAIL
TO DEASE LK.
EXISTING
ROAD
TELEGRAPH
CREEK
0
10
Km

FIGURE 2

TABLE I

CLIMATOLOGICAL DATA
MUDDY LAKE, B. C.

		TEMPERATURE			PRECIPITATION		
Month	Yr	Mean	Mean Maximum	Mean Minimum	Rain (mm)	Snow (cm)	Total Equivalent (mm)
Nov.	83	-10.6	-6.0	-15.1	-	19.4	19.4
Dec.	83	-20.3	-16.2	-24.5	-	14.6	14.6
Jan.	84	-7.8	-3.5	-12.0	21.0	110.0	131.0
Feb.	84	-5.9	-1.1	-10.7	12.2	42.0	54.2
Mar.	84	-1.6	3.4	-6.5	2.8	1.6	4.4
Apr.	84	-0.2	5.0	-5.3	2.9	4.6	7.5
May	84	4.4	8.5	0.2	23.9	-	23.9
June	84	8.1	12.6	3.6	17.2	-	17.2
July	84	10.0	14.4	5.6	31.4	-	31.4
Aug.	84	9.7	14.2	5.1	46.2	5.0	51.2
Sept.	84	5.3	10.0	0.5	29.0	-	29.0
Oct.	84	-2.3	1.4	-6.0	50.3	19.4	69.7
Nov.	84	-12.2	-7.4	-16.9	-	80.0	80.0
Dec.	84	-14.5	-8.9	-20.0	-	81.0	81.0
Jan.	85	-4.4	0.2	-8.9	28.3	67.7	96.0
Feb.	85	-10.8	-5.8	-15.7	7.5	61.5	69.0
Mar.	85	-7.3	-1.8	-12.7	-	81.0	81.0
Apr.	85	-3.3	2.2	-8.7	0.4	15.5	15.9
May	85	3.3	7.4	-0.8	18.7	25.0	43.7
June	85	6.6	11.7	1.5	14.4	-	14.4
July	85	10.6	15.8	5.4	16.8	-	16.8
Aug.	85	9.3	13.8	4.7	28.6	-	28.6
Sept.	85	6.7	11.5	1.9	121.4	-	121.4
Oct.	85	-2.0	2.1	-6.1	37.2	69.5	106.7
Nov.	85	-18.7	-13.4	-23.9	-	61.0	61.0
Dec.	85	-6.0	-0.4	-11.6	11.8	45.1	56.9

a12/05

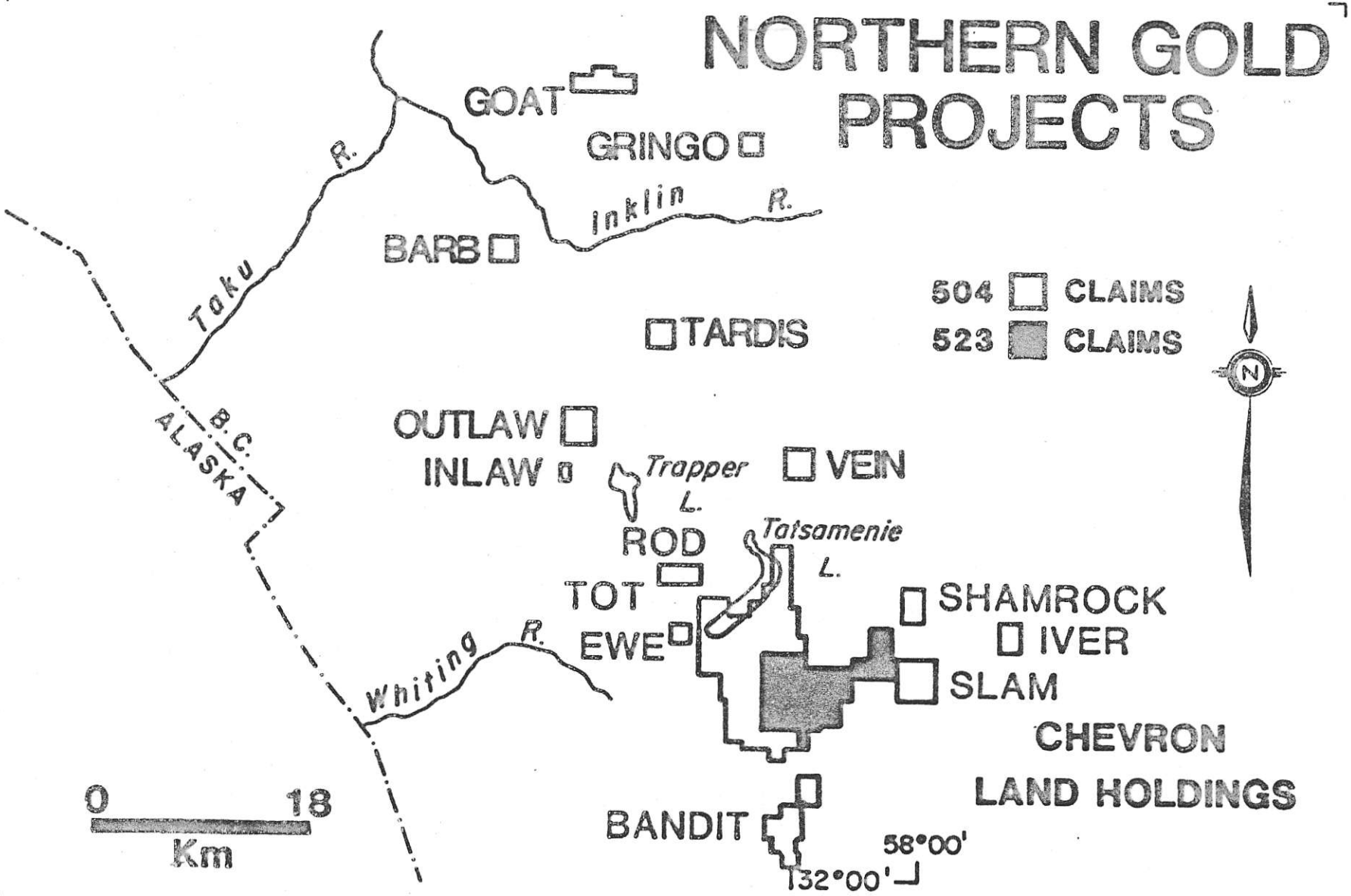

NORTHERN GOLD
PROJECTS
GOAT
GRINGO
Inklin R.
BARB
Taku R.
TARDIS
504 CLAIMS
523 CLAIMS
N
OUTLAW
INLAW
Trapper L.
VEIN
B.C.
ALASKA
ROD
Tatsamenie L.
TOT
EWE
SHAMROCK
IVER
SLAM
Whiting R.
CHEVRON
LAND HOLDINGS
BANDIT
58°00'
132°00'
0
18
Km

FIGURE 4

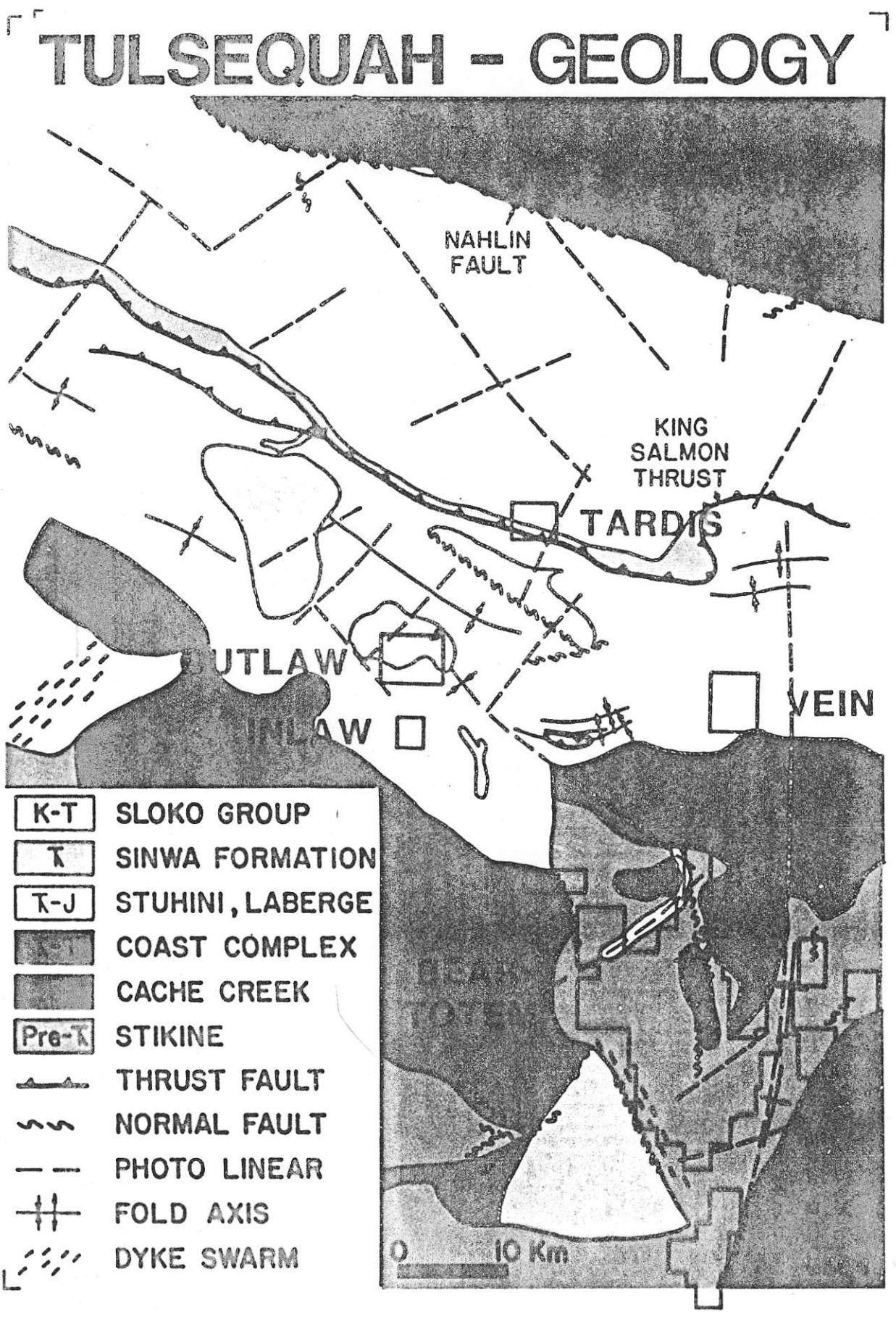

TULSEQUAH - GEOLOGY
NAHLIN FAULT
KING SALMON THRUST
TARDIS
OUTLAW
INLAW
VEIN
K-T SLOKO GROUP
T SINWA FORMATION
T-J STUHINI, LABERGE
COAST COMPLEX
CACHE CREEK
Pre-T STIKINE
THRUST FAULT
NORMAL FAULT
PHOTO LINEAR
FOLD AXIS
DYKE SWARM
0 10 Km

FIGURE 5

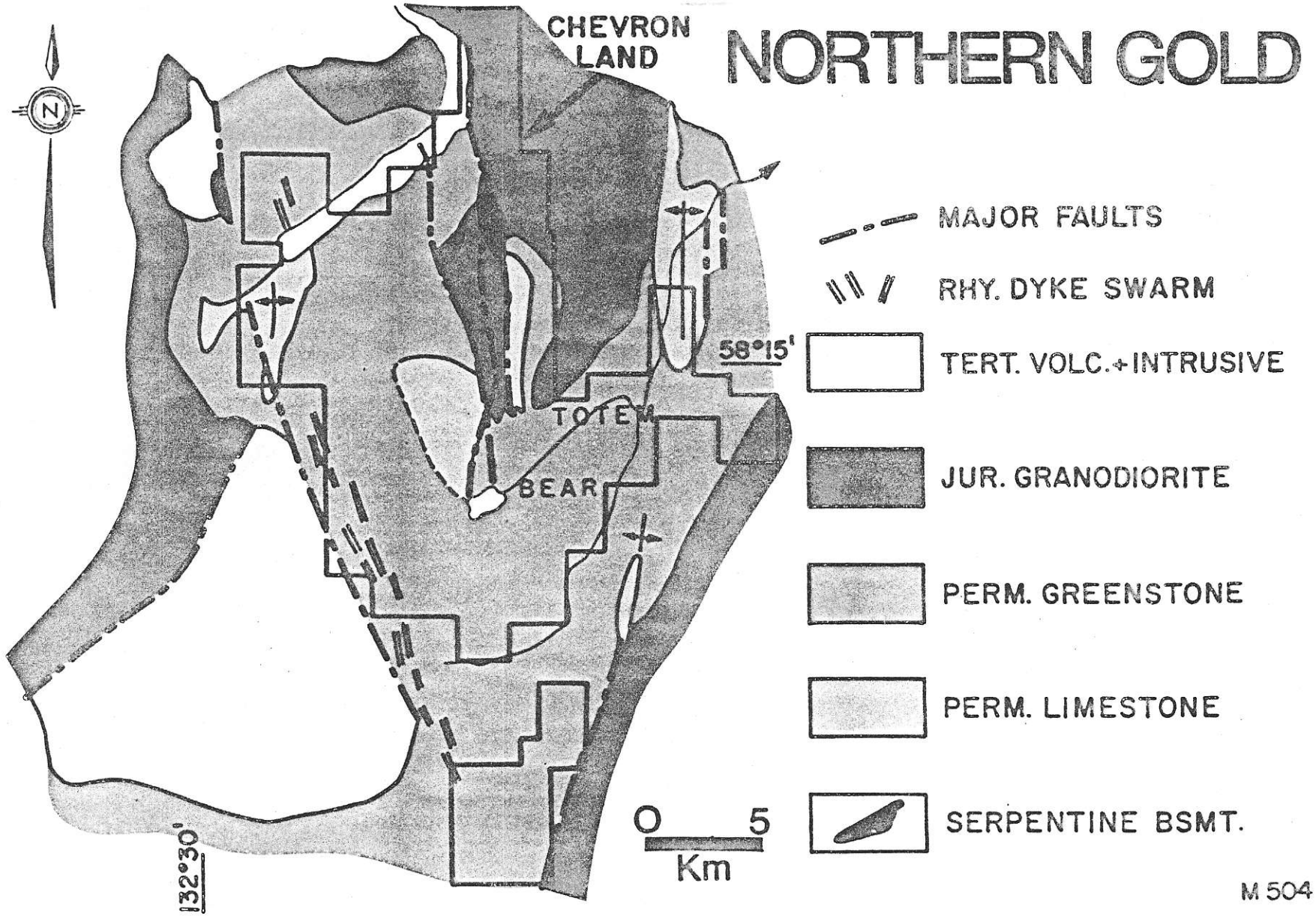

CHEVRON LAND
NORTHERN GOLD
N
MAJOR FAULTS
RHY. DYKE SWARM
TERT. VOLC.+INTRUSIVE
JUR. GRANODIORITE
PERM. GREENSTONE
PERM. LIMESTONE
SERPENTINE BSMT.
58°15'
TOTEM
BEAR
132°30'
0 5
Km
M 504

FIGURE 6

BEAR - TOTEM GEOLOGY

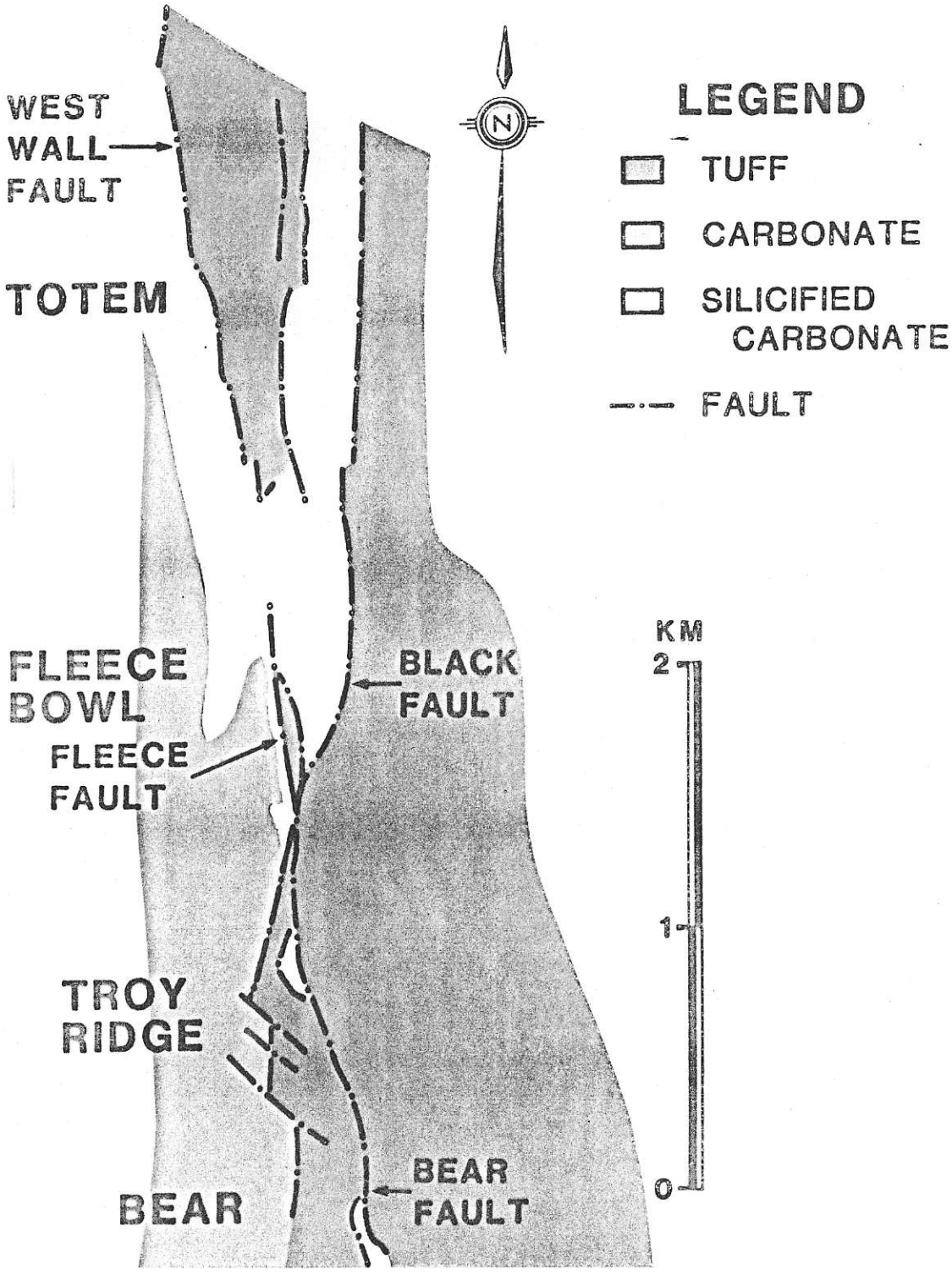
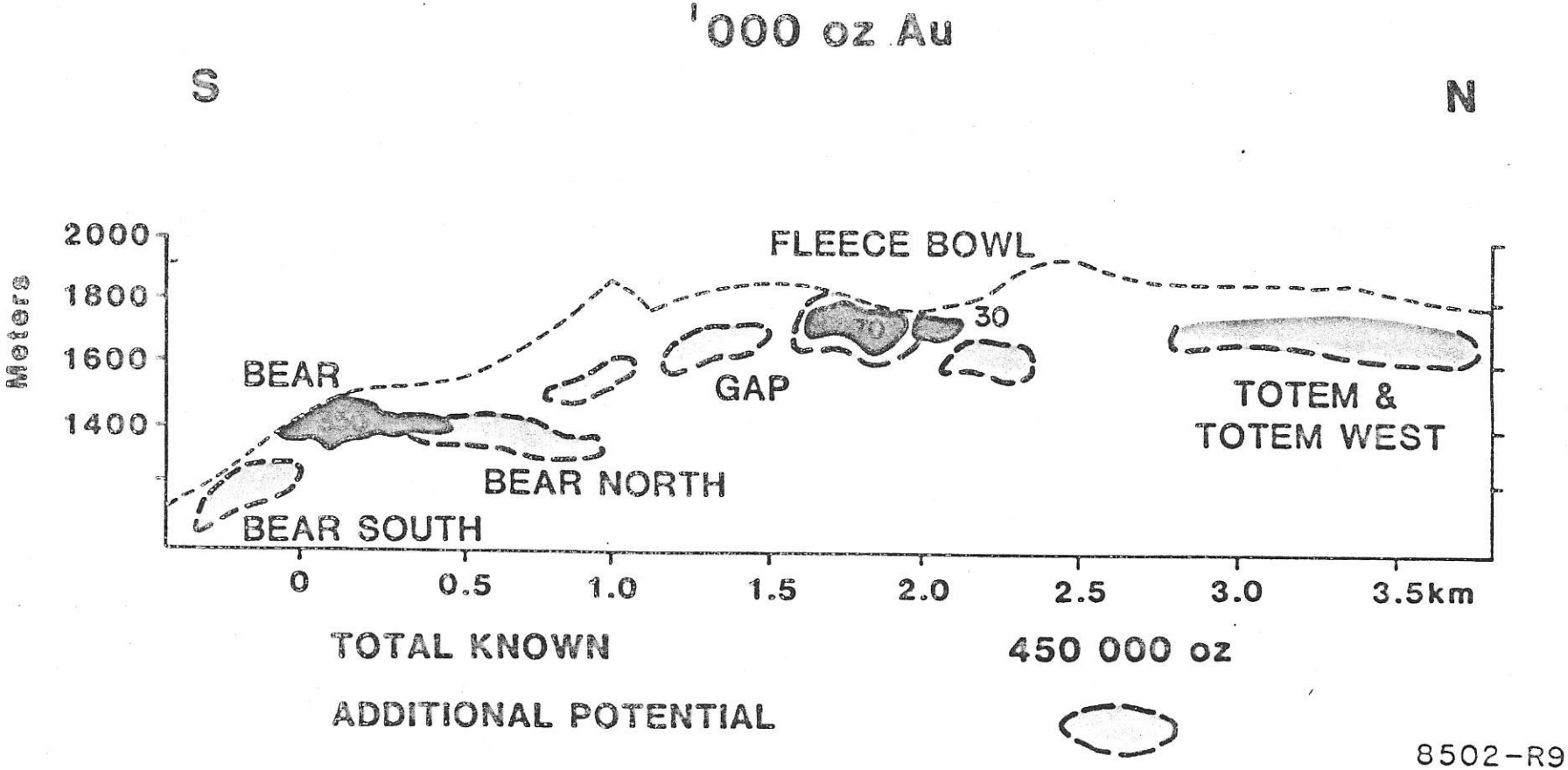


FIGURE 7

BEAR-TOTEM

VERTICAL SECTION

KNOWN AND POTENTIAL RESERVES



8502-R9

FIGURE 8

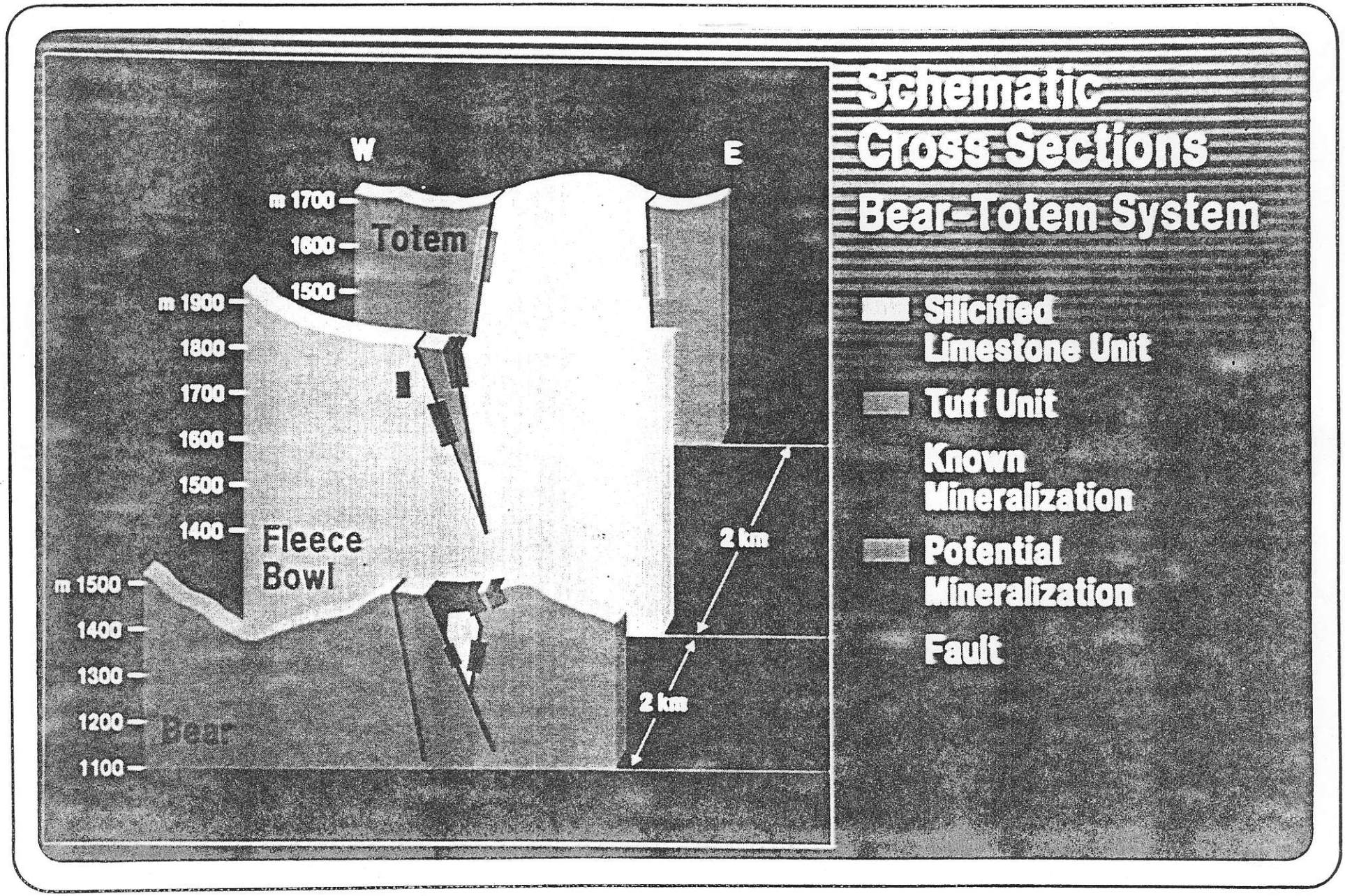

Schematic
Cross-Sections
Bear-Totem System
W
E
m 1700
1600
1500
Totem
m 1900
1800
1700
1600
1500
1400
Fleece
Bowl
m 1500
1400
1300
1200
1100
Bear
2 km
2 km
Silicified
Limestone Unit
Tuff Unit
Known
Mineralization
Potential
Mineralization
Fault

FIGURE 9

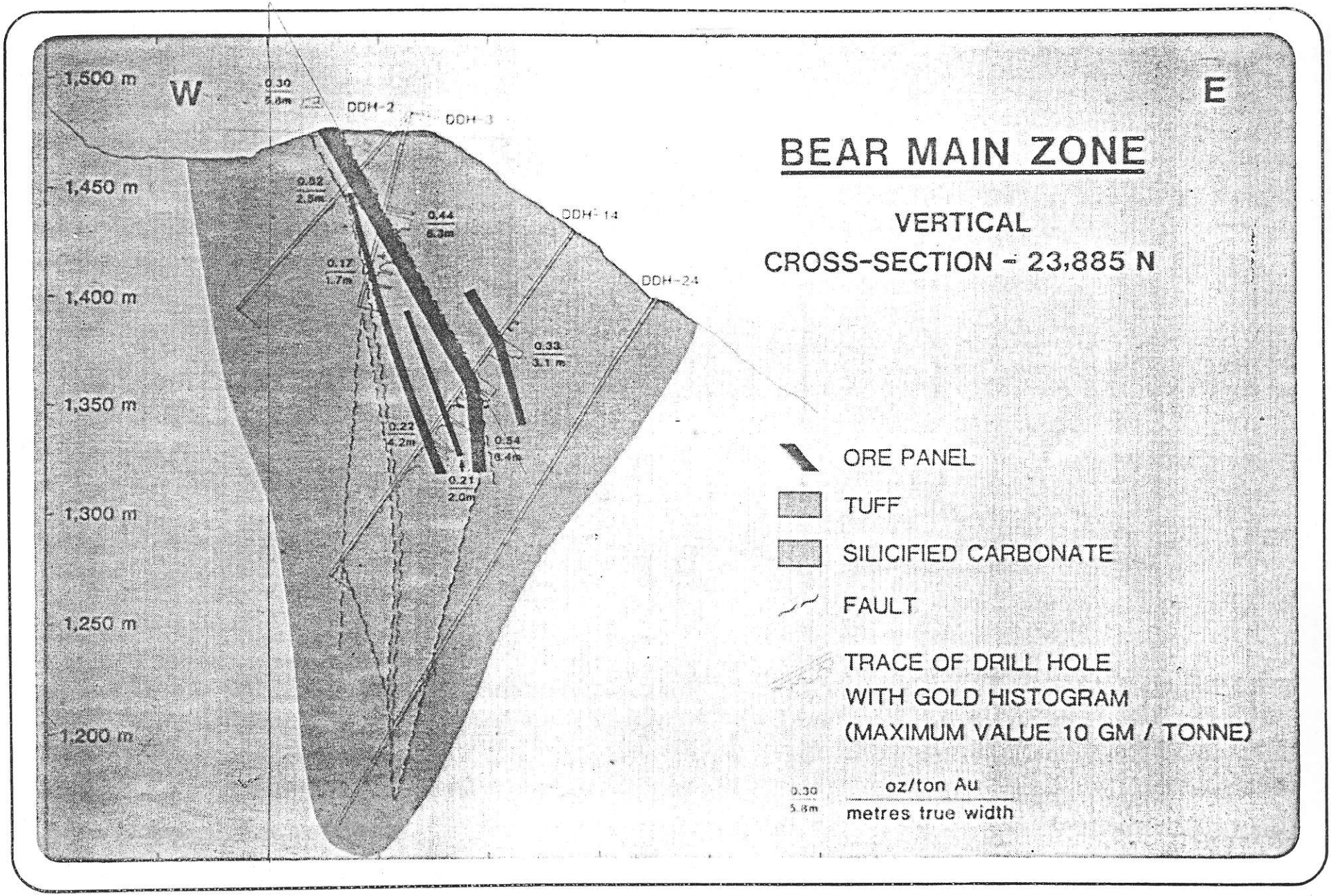

1,500 m
1,450 m
1,400 m
1,350 m
1,300 m
1,250 m
1,200 m
W
E
0.30
5.8m
DDH-2
DDH-3
DDH-14
DDH-24
0.02
2.5m
0.44
6.3m
0.17
1.7m
0.33
3.1 m
0.22
4.2m
0.54
6.4m
0.21
2.0m
BEAR MAIN ZONE
VERTICAL
CROSS-SECTION - 23,885 N
ORE PANEL
TUFF
SILICIFIED CARBONATE
FAULT
TRACE OF DRILL HOLE
WITH GOLD HISTOGRAM
(MAXIMUM VALUE 10 GM / TONNE)
0.30
5.8m
oz/ton Au
metres true width

FIGURE 10

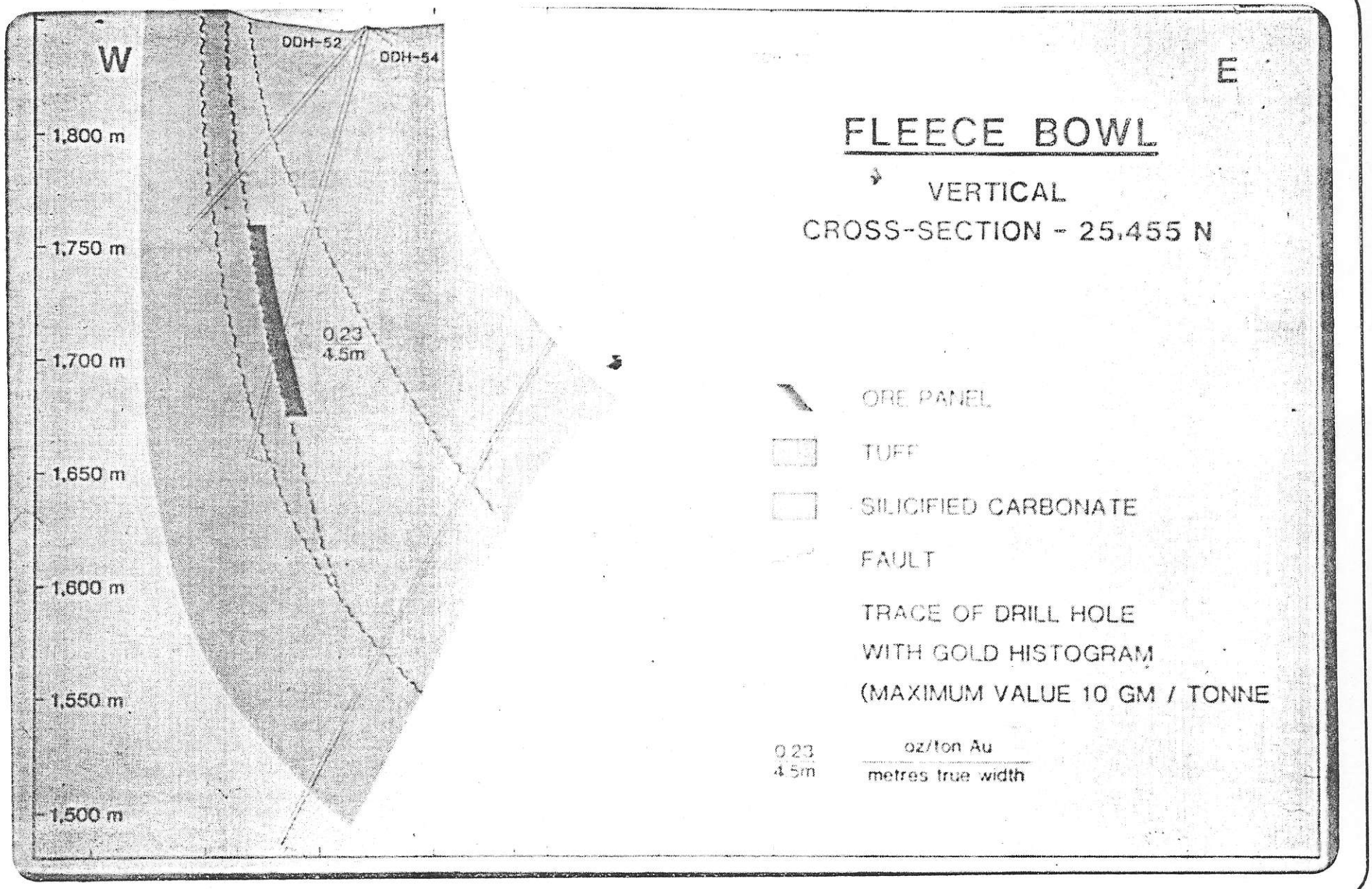

W
E
DDH-52
DDH-54
1,800 m
1,750 m
1,700 m
1,650 m
1,600 m
1,550 m
1,500 m
0.23
4.5m
FLEECE BOWL
VERTICAL
CROSS-SECTION - 25,455 N
ORE PANEL
TUFF
SILICIFIED CARBONATE
FAULT
TRACE OF DRILL HOLE
WITH GOLD HISTOGRAM
(MAXIMUM VALUE 10 GM / TONNE
0.23
4.5m
oz/ton Au
metres true width

FIGURE 11

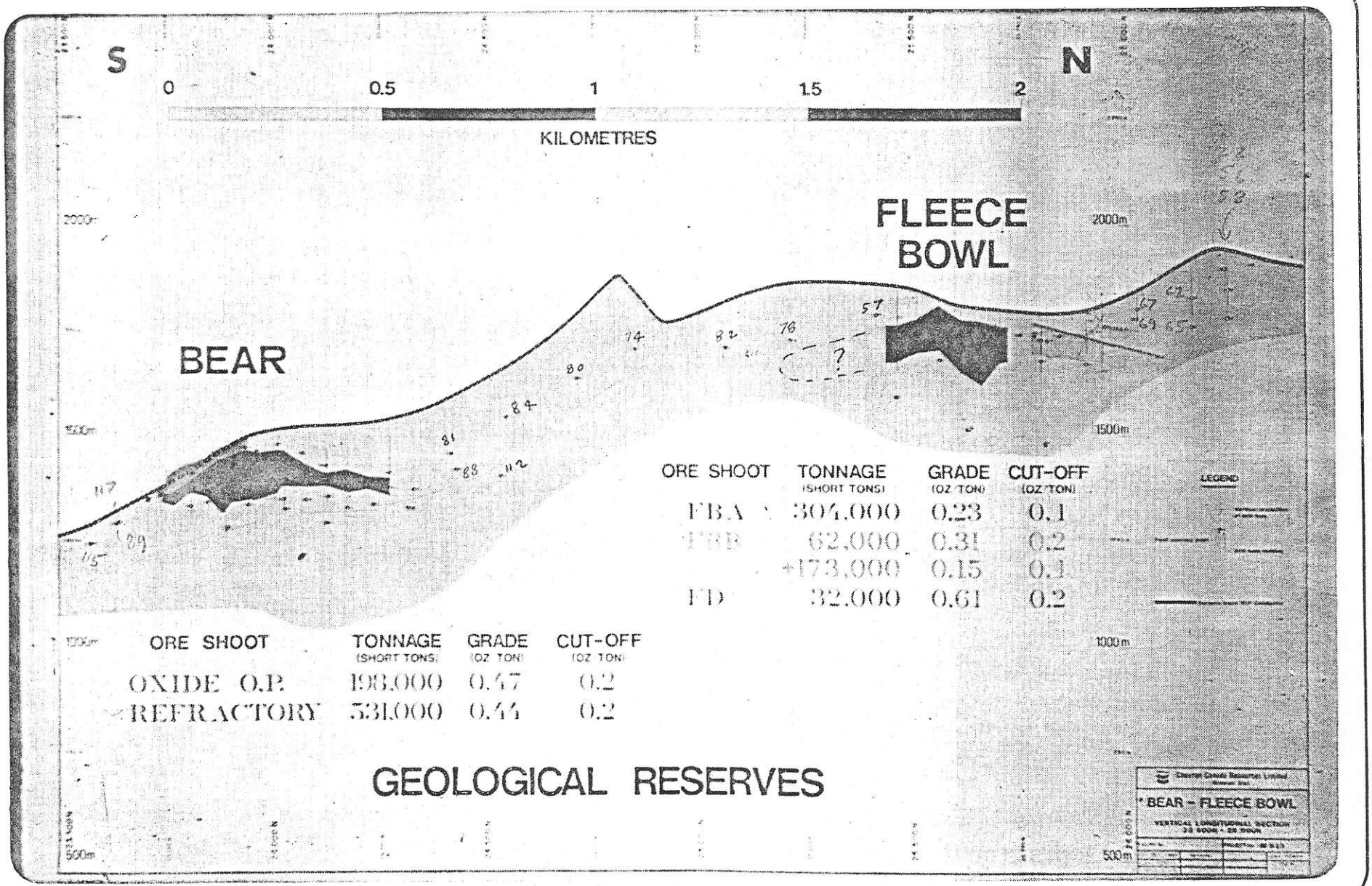

S
N
0
0.5
1
1.5
2
KILOMETRES
FLEECE
BOWL
BEAR
2000m
1500m
1000m
500m
ORE SHOOT
TONNAGE (SHORT TONS)
GRADE (OZ/TON)
CUT-OFF (OZ/TON)
FBA
304,000
0.23
0.1
FBB
62,000
0.31
0.2
+173,000
0.15
0.1
FD
32,000
0.61
0.2
LEGEND
ORE SHOOT
TONNAGE (SHORT TONS)
GRADE (OZ/TON)
CUT-OFF (OZ/TON)
OXIDE O.P.
193,000
0.47
0.2
REFRACTORY
331,000
0.44
0.2
GEOLOGICAL RESERVES
BEAR - FLEECE BOWL

FIGURE 12

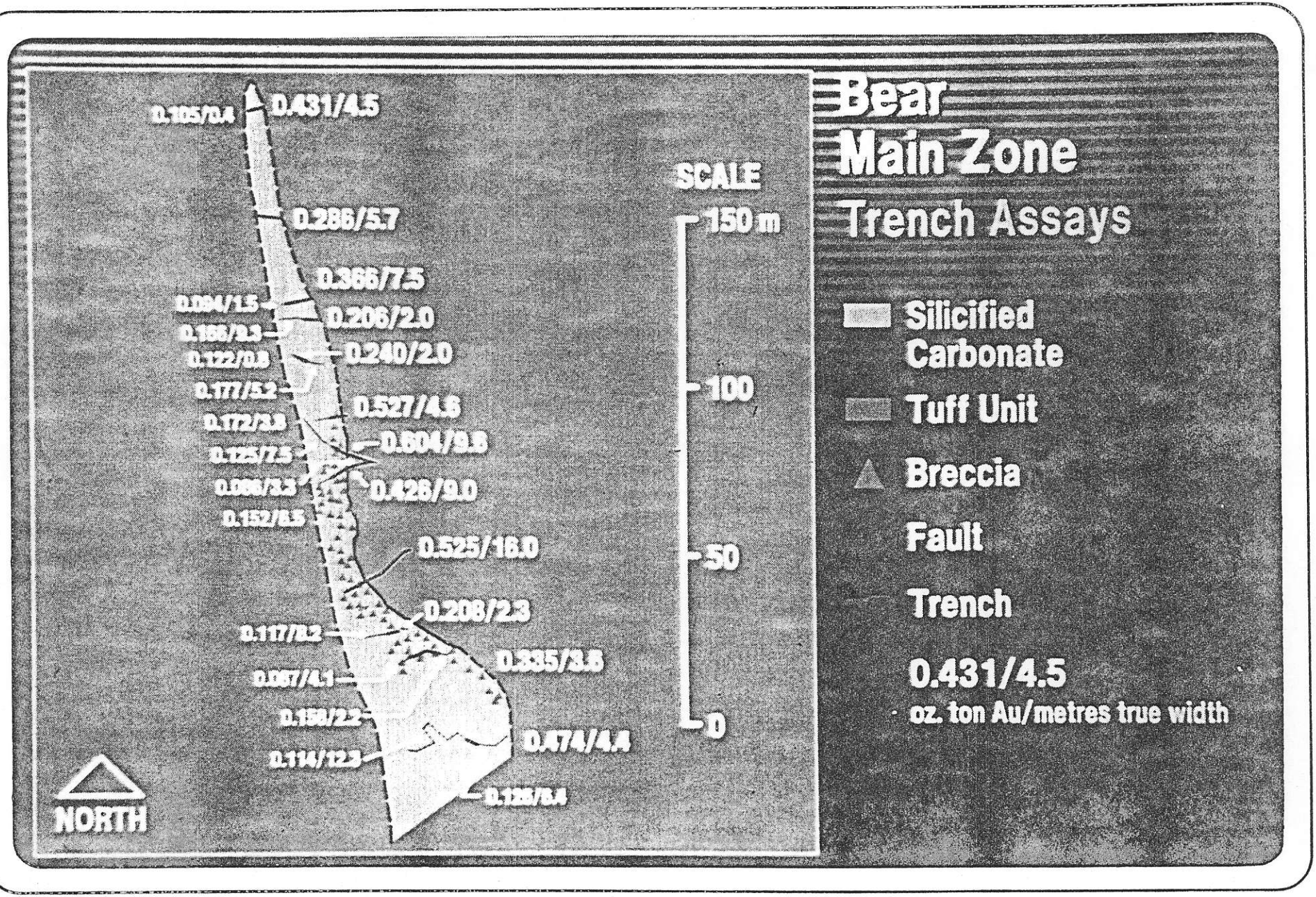

Bear
Main Zone
Trench Assays
SCALE
150 m
100
50
0
Silicified Carbonate
Tuff Unit
Breccia
Fault
Trench
0.431/4.5
oz. ton Au/metres true width
NORTH
0.105/0.4
0.431/4.5
0.286/5.7
0.366/7.5
0.094/1.5
0.206/2.0
0.166/2.3
0.122/0.8
0.240/2.0
0.177/5.2
0.527/4.6
0.172/3.8
0.604/9.8
0.125/7.5
0.426/9.0
0.152/8.5
0.525/16.0
0.208/2.3
0.117/8.2
0.335/3.6
0.087/4.1
0.158/2.2
0.474/4.4
0.114/12.3
0.126/6.4

FIGURE 13

DRILL CORE COMPOSITE SAMPLE CHARACTERIZATION

29 Drill Core Samples
Total Weight = 140 Lb
48% Greenstone
42% Silica Breccia
10% Greenstone/Silica Breccia/Fault Gouge
7% Sulfides

Assays, ppm

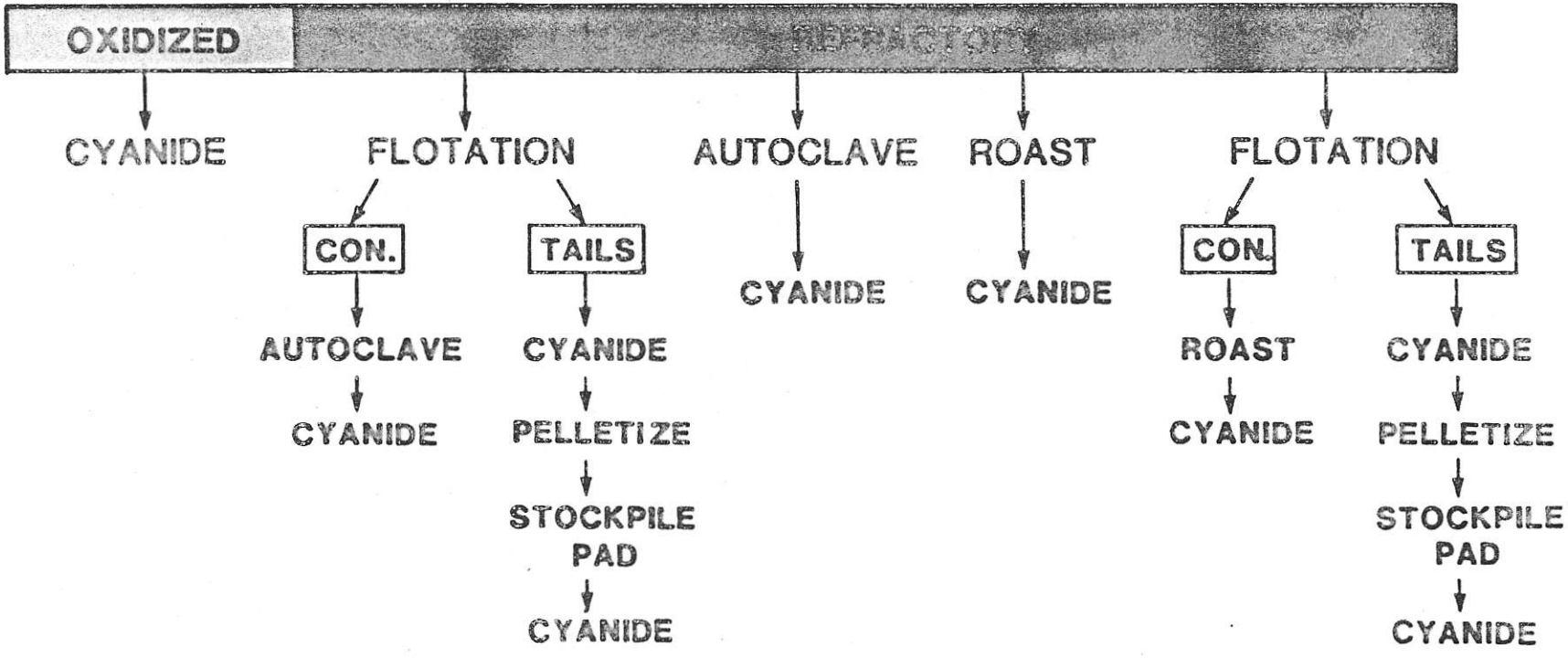
Au	=	9.8 (0.29 Opt)	Co	=	18	Fe	= 3.77%
Ag	=	14.7 (0.43 Opt)	Ni	=	144	Mg	= 2.18%
As	=	1500	P	=	810	Al	= 3.27%
Sb	=	52	Cr	=	440	Ca	= 4.01%
Hg	=	3	V	=	108	Ti	= 0.20%
Te	=	17	Sr	=	37	K	= 1.47%
Mn	=	525	Na	=	400		
Cu	=	94	Mo	<	1		
Pb	=	6	W	<	10		
Zn	=	67	Bi	<	2		
F	=	837	Cd	<	0.5		
Ba	=	71	Be	<	0.5		

FIGURE 14

BEAR - TOTEM

ALTERNATIVE PROCESSES FOR GOLD EXTRACTION

PHASE II



HHW.1-'85

FIGURE 15

BEAR - TOTEM

% GOLD RECOVERIES FROM REFRACTORY ORE

TREATMENT	CRC	LAKEFIELD
DIRECT CYANIDATION	35 - 40	42
FLOTATION	75 (Max)	53
FLOTATION PLUS CYANIDE TLS.	81	78
ROASTING PLUS CYANIDE	85 - 90	
ACID AUTOCLAVE PLUS CYANIDE	96 - 98	98
CAUSTIC AUTOCLAVE PLUS CYANIDE		84 - 89

FIGURE 16

CYANIDE LEACH CONDITIONS

Temperature	=	Ambient
pH	=	10.5
CaO Consumed, Lb/Ton	=	1.5 for Flot. Tail 5-6 for Whole Ore 5-6 for Roasted + Washed 23 for Roasted Ore
(CN^-)	<	200 ppm
	=	~1.5 Lb/Ton Consumed
	=	2.5-5.0 Lb/Ton In Standard Tests
Leach Time	=	2-4 Hr
Agitation	=	Mild
Air Sparging		
Pulp Density	=	40% Solids

250-500 g Solids in Resin Kettle

FIGURE 17

BEAR - TOTEM
AUTOCLAVE CONDITIONS
"BEST TESTS"

CRC

ACID AUTOCLAVE

96% - 200mesh.

180°C, 4hrs.

256 psig total

11 lbs/ton ferric sulph.

350 lbs/ton H_2SO_4 / ton

CYANIDATION

4 hrs, pH 10.5

5 lbs NaCN/ton.

Au Rec 96 - 98 %

LAKEFIELD

CAUSTIC AUTOCLAVE

80% - 200mesh.

205°C, 4 hrs.

360 psig total, 125 psig O_2

O_2 116 kg/t

20 kg/t NaOH

CYANIDATION

4 hrs, pH 10.5

0.2 kg/t NaCN

Au Rec. 88.8 %

FIGURE 18

Exhibit A

Geological Notes
Pertaining to Ore

Bear Deposit, Muddy Lake

These notes are based on data study only with no physical examination of the property or the drillcore, and only minor field experience in the district. The data however is well presented, appears consistent, and has been interpreted by Chevron staff neither unduly conservatively nor unduly rashly. For example, only minor alterations have been deemed desirable in their projections of ore chutes.

The following is a first stab at providing general geological input and summary data, and some indication of which direction our efforts may move in.

GENERAL GEOLOGY

The host structure is best described as a very major (15 km long) steeply dipping braided fault system. The Bear deposit generally coincides with a dolomite lens enclosed within this system. The lens has a strike length of over 700m, a vertical extent of 100 to 300m. It's normal maximum thickness is 30m but this appears thickened near the centre of the deposit by what may be local reverse movement faults. At the S. end of the deposit low angle faulting provides an additional local complication. It is probable that both the reverse and the low-angle faults are pre-ore. Judging from the abundance of unsealed gouge, post-ore faulting is common, but major displacements of ore can be considered - with some hesitation - unlikely, partly because such post-ore movement may largely be a reactivation of the older structures. The best example would be the gouge in the hanging wall of and parallel to the "HW" ore zone.

Bear Deposit, Muddy Lake

The dolomite lens is presumed to represent a slice of older (Permian) carbonate rock moved upwards into (pre Upper-Triassic) tuffs. Banding in the dolomites, presumed to be bedding, is somewhat contorted. Some bedding indications in the tuffs suggest a general easterly dip.

Alteration is of two types. First there is pervasive silicification of almost regional extent within the carbonates. Where this is uninterrupted by faulting, it is geochemically dead. Several stages of silicification are reported. Second, there is an ankerite-quartz-calcite-pyrite suite closely associated with individual fault strands.

ORE

The Au ore is present as a coating along the largely fault bounded edges of the dolomite lens. Grades decrease fairly rapidly into the wall rocks but a high proportion of the dolomite lens is geochemically anomalous. Minor ore is also present in fault zones cutting gabbro at the S. end of the deposit.

The dolomite-tuff contact has been cited as the major control but the relationship may be partly fortuitous in that this contact would in any case be the loci of the strongest faulting. At the same time the relative competence of and probable primary brecciation (Shroeter) in the dolomite as well as the possibility of earlier dolomitization, undoubtedly rendered the dolomite a better host.

The Bear deposit is currently defined by 17 drill sections comprising 46 holes, as well as by 12 trenches over a 200m length. The dimensions of the ore chutes have a strong, roughly horizontal strike extension relative to dip extension. This can be affirmed despite the bias attendant upon having drill sections as much

as 50m apart. The "HW" chute, for example, is present in 16 of 17 consecutive drill cross-sections over a total length of 600m, but its down-dip extent does not exceed 100m for much of its length. The "FW" chute, including a low grade section, extends 200m along strike with a dip extension again about 100m. True widths of ore average close to 6m in the outcropping section of the "HW" zone (using a 2.0m minimum mining width).

Grades are surprisingly consistent for a gold deposit. They range up to a maximum (for minimum 2m widths) of 0.87 oz/ton, with a concentration in the 0.2 to 0.3 oz range (see attached histogram).

The apparent alignment of the ore from cross-section to cross-section is quite believable. The possibility of major displacement en-echelon distribution of lenses seems quite unlikely, but some offsets of modest magnitude will undoubtedly occur. The area of most concern would be in the central portion of the dolomite lens where the tectonic thickening occurs.

RISKS

1. Unanticipated Tectonic Complications. As noted above, one segment (about 30%) of the Bear Zone could produce a few surprises, leading in particular to a high local mining and development cost. The surface stripping, in-fill drilling, and the adit (if placed in ore) will clarify this problem during the earliest phase of work.
2. Ground Control. This will be an unknown factor until fairly well into the underground work. The major concern will be the extensive faulting in the hanging wall of the HW chute, contributing to increased mining cost and to dilution. A subjective review of the drill logs suggests that 50% of the hanging wall of the "HW" zone is of good to excellent competence, that 30% is moderate, and that 20% could provide some sizable headaches.

3. Core Recovery. Some changes will occur in anticipated mining widths and their associated average grade as a result of core losses in exploration drilling. A semi-quantitative review of the recoveries indicates that, for the "HW" zone:

56%	of the	intersections	had	recoveries	of	90% or better
34%	" "	"	"	"	"	80 to 90%
11%	" "	"	"	"	"	60 to 65%
9%	" "	"	"	"	"	50%
100%						

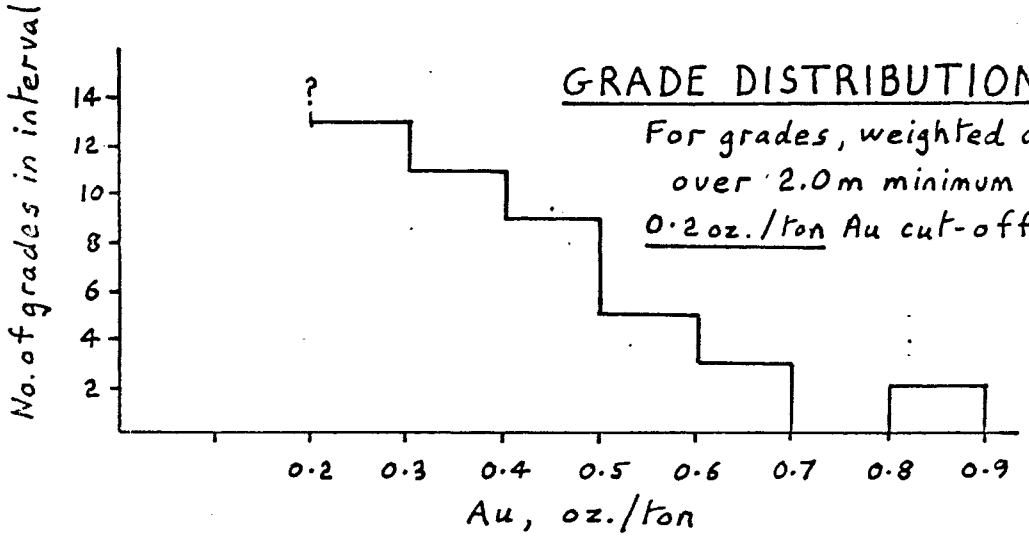
Since the relationship of grade to recovery is not easily ascertained, the mineable grades could end up being more or less than those predicted from the drilling. It would seem wise to add a ±5% uncertainty to the overall grade of the "HW" zone from the point of view of core recovery alone.

CONCLUSIONS

Although there are some areas of concern, it seems unlikely that the Bear deposit will be rendered uneconomic on the basis of geological factors alone. The uncertainties will be largely resolved during the first 3 months of field activity, i.e. following an expenditure of between $1 million and $2 million.

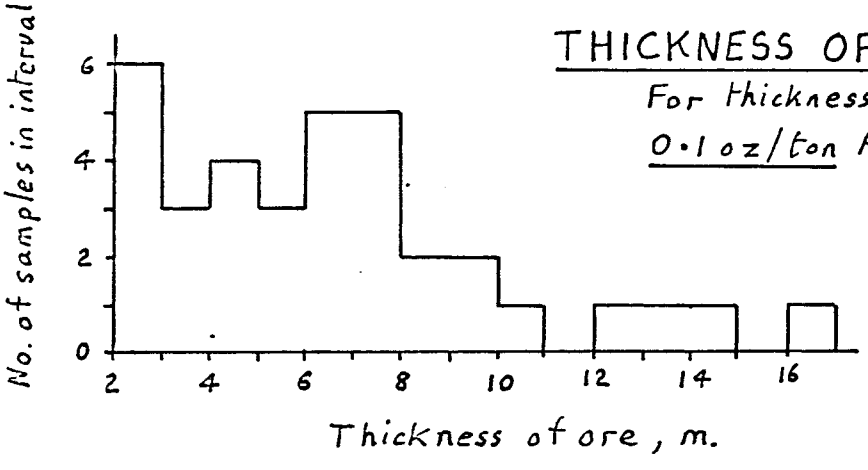
March 1986 D. Arscott,

BEAR ZONE, MUDDY LAKE, B.C.



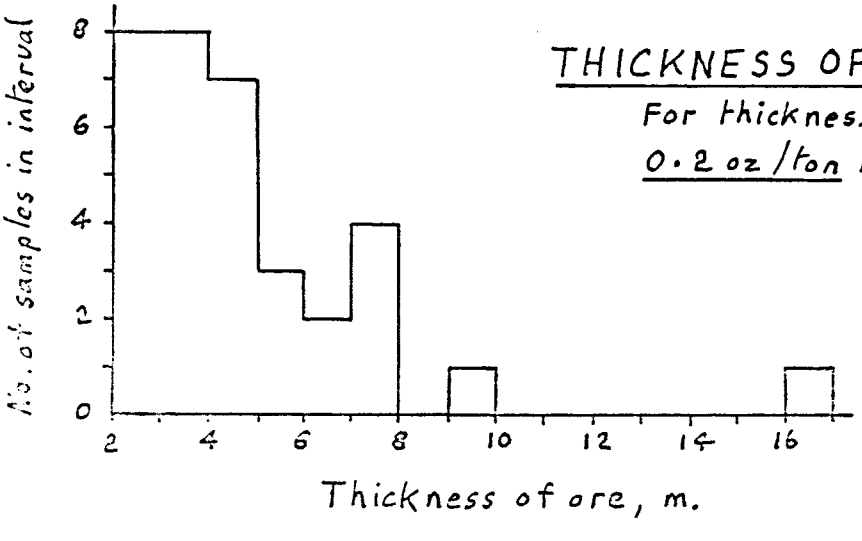
GRADE DISTRIBUTION

For grades, weighted averages, over 2.0m minimum thickness, 0.2 oz./ton Au cut-off



THICKNESS OF 'HW' ZONE

For thicknesses > 2.0m
0.1 oz/ton Au cut-off



THICKNESS OF 'HW' ZONE

For thicknesses > 2.0m
0.2 oz/ton Au cut-off

March '86

Exhibit B

FLEECE BOWL DEPOSIT

Muddy Lake, B.C.

Geological Notes

The Fleece Bowl lies within the same major fault system and has many similarities to the Bear Deposit. It is lensoid with an average width of 4.4m, strikes close to due N., and dips 70 to 80°E. The average (arithmetic) grade is 0.223 oz/ton Au (0.1 oz/t. cut-off).

Despite good continuity of the ore the host structure is complex in that the inter-slicing of carbonates and tuff is quite variable. Nevertheless major shear zones are less common than on the Bear, and hanging walls much more competent. The mining and development costs, as well as dilution, can be expected to be much more favourable.

This deposit, like the main Bear Zone, shows very strong horizontal control. The main zone has low ore grade values over mineable widths on 10 out of 12 cross-sections over an overall strike extent of 500m. The down-dip dimension is by contrast, close to 100m, all ore intersections but one lying between elevations of 1680 and 1760m. Below 1680m there is one good intersection, one moderately anomalous, and three duds.

The deposit then has a fairly clear bottom, but there is no a priori evidence against a repetition of similar structural conditions at unknown greater depth. Drilling to greater depths can be contemplated but is low priority and should be secondary to continued examination of more surficial levels along the strike of the major structure.

One item of interest from the exploration standpoint is the presence of good intersections in carbonates as much as 400m away from the nearest known tuff contact and not even associated in some cases with major faulting or brecciation.

Fleece Bowl Deposit

Grades, and grade x thickness products generally increase towards the N. end of the Fleece Bowl, especially in the vicinity of a highly altered and mineralized dyke, and away from the tuffs. It is possible that there is some unrecognized structural offset N. of section 25,900N.

In summary it can be said that the gold in the Fleece Bowl will be cheaper to mine and easier to extract but that a significant increase in the present tonnage is unlikely within the presently known periphery of the deposit.

3 Mar'86 D.A.

FLEECE BOWL
PROPOSED FILL-IN DRILLING 2 Mar '86

25,455N	24,750E	-55°	370m	For down dip extension and possible 2nd zone in FW.
25,503N	24,725E	060°	220m	Down dip extension
25,527N	24,675E	-50°	160m	On strike extension of secondary zone.
25,575N	24,675E	-50°	160m	On strike extension of secondary zone.
25,604N	24,725E	-67°	200m	Down dip extension.
25,652N	24,630E	-45°	70m	Up dip "
25,722N	24,650E	-45°	170m	On strike extension of secondary zone and of main zone.
25,775N	24,650E	-45°	170m	On strike extension of secondary zone and of main zone.
25,834N	24,700E	-45°	170m	Dip extension
25,846N	24,650E	-45°	160m	Strike extension
25,868N	24,650E	-45°	160m	Strike extension
25,940N	24,650E	-75°	170m	Dyke E of major fault, and major fault itself.
26,200N	24,525E	-45°	120m	Strike extent. good zone.
26,250N	24,525E	-45°	120m	Strike extent. good zone.

2300m @ $330 - $759,000.

DA.

Exhibit C

MUDDY LAKE PROSPECT
(104K/1W)

By T. G. Schroeter

INTRODUCTION

The Muddy Lake gold property consists primarily of the Bear and Totem group of claims and is located 137 kilometres west of Dease Lake at latitude 58 degrees 13 minutes north and longitude 132 degrees 17 minutes west. The claims lie immediately north of Bearskin Lake (locally called Muddy Lake), approximately 10 kilometres due south of Tatsamenie Lake (Fig. 121). Access is by float plane to Muddy Lake, or by helicopter from either Dease Lake or Atlin. A winter tote route connects the property with Telegraph Creek, approximately 75 kilometres to the southeast. The claims are owned by Chevron Canada Limited who have been actively involved in the region since 1980. They own several other claim groups in the vicinity of Tatsamenie Lake, including Misty, Nie, Iver, Highliner, Grand, Slam, Pole, and others. During 1983, 30 diamond-drill holes were completed, mainly on the Bear Main Zone (Bear claim), utilizing one to three drills. During 1984, a further 56 holes totalling approximately 10 000 metres were completed on two zones of interest using three to four drills. The base camp housed approximately 35 people and included an assay lab. The writer spent one and one half days on the property in late August 1984.

PROPERTY GEOLOGY

The zones of interest are within an assemblage of pre-Upper Triassic oceanic sedimentary and volcanic rocks and Triassic dioritic rocks (Souther, 1971). The pre-Upper Triassic rocks are comprised of pelagic sediments (mainly argillites and shales), carbonate bank limestone (mainly crinoid debris) and mafic volcanic and volcaniclastic rocks. The limestones have yielded Permian age dates from fusulinids (Geological Survey of Canada identification; H. Wober, personal communication) and are considered to be part of the Stikine Terrane assemblage rather than Cache Creek Group.

The western third of the property is predominantly limestone while the eastern two-thirds is predominantly greenstone and chloritic phyllite. The limestone unit is relatively pure and massive (compare, Carlin, Nevada) and thus may have been a very difficult rock unit for mineralizing solutions to penetrate. It occurs in varying shades of grey to white to black to pink - probably reflecting various concentrations of organic material and/or hematite. Limestone outcrops exhibit a homogeneous, sugary texture, almost unfractured but with a distinct layering which is best observed at a distance. Fossils are not abundant. Primary breccias occur as conformable layers within the limestone section and

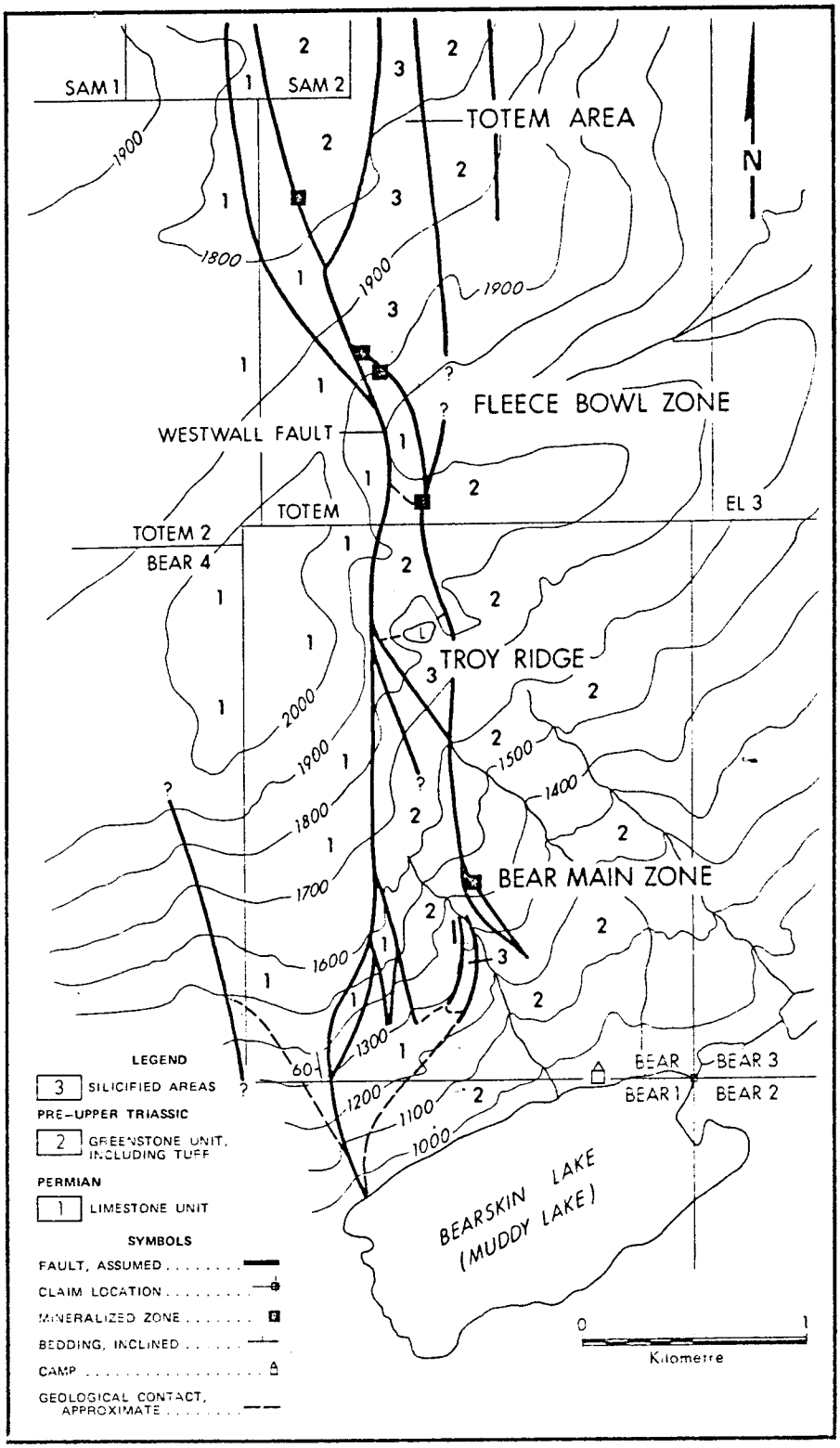


Figure 121. Geological plan of the Muddy Lake prospect (after company plans).

consist of angular to subangular clasts of limestone in a fine-grained carbonate mixture.

The greenstone unit is overprinted with greenschist facies metamorphism; it includes greenstone (overprinting of greenschist facies regional metamorphism), chloritic phyllite, gabbro (dykes and/or sills), augite porphyry, lapilli tuff, and aphanitic tuff. Fractures within the greenstone unit are commonly coated with chlorite, epidote and hematite.

STRUCTURE

A prominent and significant northerly to north-northwesterly trending fault zone (locally referred to as the Ophir Break Zone) extends through the property. It is defined by areas of intense fracturing, abundant slickensiding, and linear alteration zones consisting of Fe-carbonate, quartz±fuchsite and quartz-dolomite. The Ophir Break Zone may be as wide as 1 kilometre and several minor fault structures occur within it (personal communication, H. Wober). The faults appear to control development of the alteration zones; rocks between faults are relatively unaltered. Folding, especially in the limestone unit, has been observed by Chevron personnel.

ALTERATION

Two major alteration types exist:

(1) A quartz-dolomite assemblage which occurs primarily in the limestone unit;

(2) A quartz-Fe-carbonate-pyrite±fuchsite assemblage.

Both types are most intensely developed along fault zones.

The quartz-dolomite alteration consists of massive, fine-grained quartz, quartz breccia, and lesser dolomite. Outward from a zone of intense silicification, with or without brecciation, silica decreases and progresses from massive quartz to vein quartz to stringer quartz in a dolomite matrix. Further out, alteration grades into dolomite-limestone and finally to unaltered limestone. The dolomitic alteration may be due to release of magnesium from the adjacent greenstone unit. Brecciation is locally well developed in the quartz-dolomite alteration zone and consists of angular clasts in a fine-grained vuggy quartz matrix.

The quartz-Fe-carbonate-pyrite±fuchsite alteration assemblage is restricted mainly to rocks of the greenstone unit. The width or extent of altered zones depends upon the permeability of the host rocks but can be as much as 20 metres. Rare sericite has been observed.

MINERALIZATION

Mineralization is literally 'no-seeum' gold with minor silver values. The main sulphide noted is pyrite, which ranges from 0.1 to 5 per cent in the

TABLE 1

GRAB SAMPLES OF ALTERED ROCKS FROM THE MUDDY LAKE PROSPECT

	Sample Number	Description	Zone	Au ppm	Ag ppm	Hg ppb	As ppm	Sb ppm
1.	Bear-84-1	Silicified limestone	Fleece Bowl	2.7	<10	-	30	<2
2.	Bear-84-5	Silicified limestone breccia	Fleece Bowl	<0.3	<10	-	26	<2
3.	Bear-84-7	Silicified tuff limestone	Fleece Bowl	<0.3	<10	125	<5	3
4.	Bear-84-7a	Silicified tuff limestone	Fleece Bowl	<0.3	<10	23	56	9
5.	Bear-84-8	Silicified and pyritized greenstone	Fleece Bowl	<0.3	<10	725	0.31%	15
6.	Bear-84-9	Silicified limestone breccia	Fleece Bowl	<0.3	<10	96	48	9
7.	Bear-84-11	Silicified limestone	Bear (Main) (Tr. 1)	15.6	<10	-	114	2
8.	Bear-84-12	Silicified limestone	Bear (Main) (Tr. 1)	27.8	<10	-	95	8
9.	Bear-84-13	Silicified limestone	Bear (Main)	7.9	<10	-	30	<2
10.	Bear-84-14	Silicified limestone breccia	Bear (Main) (Tr. 4)	5.5	19	-	44	<2
11.	Bear-84-15	Silicified limestone breccia	Bear (Main) (Tr. 4)	9.3	26	-	44	5
12.	Bear-84-16	Silicified limestone breccia	Bear (Main) (Tr. 5)	9.3	11	-	167	8
13.	Bear-84-17	Silicified limestone breccia	Bear (Main) (Tr. 5)	26.0	67	-	875	12
14.	Bear-84-19	Black fault gouge breccia between silicified limestone and greenstone	Fleece Bowl	2.4	<10	224	96	12
15.	Bear-84-20	Silicified pinkish limestone breccia	Fleece Bowl	<0.3	<10	25	20	8
16.	Bear-84-22	Quartz-Fe-carbonate-fuchsite alteration with minor arsenopyrite	Fleece Bowl	<0.3	<10	78	96	7
17.	Bear-84-23	Quartz-Fe-carbonate-fuchsite alteration with pyrite	Fleece Bowl	<0.3	<10	224	56	28
18.	Bear-84-24	Quartz-Fe-carbonate-fuchsite alteration with arsenopyrite	Fleece Bowl	1	<10	4000	7.92%	29
19.	Bear-84-25	Quartz-Fe-carbonate-fuchsite alteration with arsenopyrite	Fleece Bowl	Lost in furnace		1800	4.08%	17
20.	Bear-84-26	Silicified limestone with pyrite	Troy Ridge	<0.3	<10	115	168	<3
21.	Bear-84-27	Quartz-Fe-carbonate-fuchsite alteration	Troy Ridge	<0.3	<10	66	88	<3
22.	Bear-84-28	Limestone breccia	Troy Ridge	<0.3	<10	42	<8	2
23.	Bear-84-29	Foliated hornblende-rich gabbroic rock	Troy Ridge	<0.3	<10	13	<8	<3

Bear Main Zone to trace in some Fleece Bowl mineralization. Trace amounts of arsenopyrite were also observed in some drill holes. Chalcopyrite occurs as amygdules in lapilli tuffs in the Bear Main Zone. Mineralization is of the high-level epithermal type with such characteristics as vuggy quartz, high Au to Ag ratios, and direct geochemical correlation between gold, silver, arsenic, antimony, and mercury.

Two main 'zones' were being tested: Bear Main and Fleece Bowl (Fig. 121). Much of the drilling has been done on the Bear Main Zone; it has indicated a pod of mineralization with a strike length of approximately 110 metres, and an average width of 10 metres. There are two host rocks in the Bear Main Zone; one is silicified limestone-dolomite breccia with a matrix of sugary to fine-grained silica; the second is carbonatized greenstone breccia with a matrix of pyrite and fine-grained rock fragments.

Drilling continued during 1984 on the Troy Ridge area and Fleece Bowl Zone where the host rocks are silicified limestone and dolomite in contact with greenstones; there are associated quartz-Fe-carbonate-pyrite-fuchsite alteration zones. Minor arsenopyrite has also been noted.

The Totem Silica area is a large area of pervasive silicification, similar to what one might expect to see near the top of an epithermal system. Assays of grab samples taken by the writer on the Bear Main Zone, Troy Ridge area, and Fleece Bowl Zone are shown in Table 1.

WORK DONE

During 1984, Chevron diamond drilled approximately 10 000 metres in 56 holes utilizing three to four drills. Detailed geological mapping, geophysical and geochemical surveys were also carried out. Road access was prepared from the base camp to the various mineralized zones.

ACKNOWLEDGMENTS

The writer would like to thank Chevron Canada Resources Limited (especially Helmut Wober and Ken Shannon) for providing access to the property and for their kind hospitality and openess while on the property.

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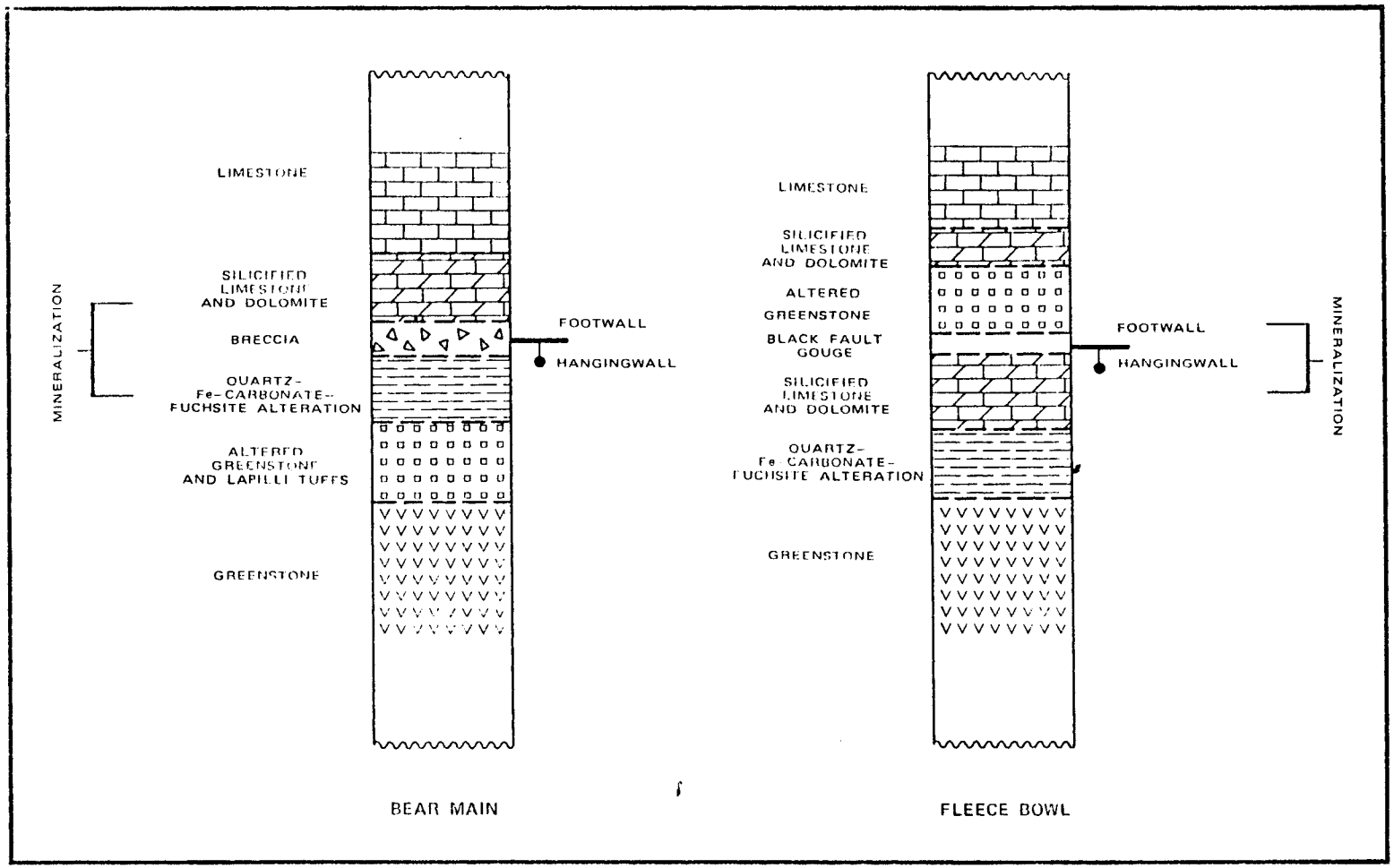

Figure 122. Schematic sections showing relationships of alteration and mineralization, Muddy Lake prospect.

Exhibit D

FALL 1985 ENVIRONMENTAL STUDIES FOR THE BEAR - TOTEM PROPERTY

Prepared for:

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December, 1985

CHEVRON CANADA RESOURCES LIMITED
BEAR - TOTEM PROJECT
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1.0 INTRODUCTION

1.1. Background

Chevron Canada Resources Limited is continuing exploration of the Bear-Totem gold property, located approximately 80 km northwest of Telegraph Creek in northwestern British Columbia. The project area lies on the east side of the coast mountains at elevations ranging from 915 m to 1830 m. Drainage from the site flows into Bearskin Creek which then flows into the Samotua River. The latter flows into the Sheslay River which joins the Inklin River, which then flows into the Taku River and empties into Taku Inlet in Alaska.

There is no all weather road access to the property although equipment has been brought in from Telegraph Creek along a winter trail. An all weather dirt road has been built from the camp to the Samotua River, to link up to the winter trail. Access is normally by fixed wing aircraft from Dease Lake or Whitehorse.

Preliminary mine development plans call for development of about a 300 t/day mill to process the ore on-site. Mine life is expected at least five to six years. Mining would initially be by open pit and in later years by underground methods. The workforce would be approximately 50-75 people on-site and would be on a fly-in, fly-out rotation with a single status camp at the mine. Road access would need to be constructed to the mine from the Dease Lake-Telegraph Creek road. This would be either a

winter or an all season road, depending on the expected mine life. Present plans call for a complete feasibility report about mid-1987.

An initial environmental reconnaissance survey and water quality sampling were undertaken by Norecol Environmental Consultants Ltd. in late July, 1985. The results of the July survey and a discussion of possible requirements for environmental studies and the government review process were reported in a preliminary report (Norecol Environmental Consultants Ltd. 1985). The following report presents the results of fall, 1985 work carried out on the mine site and a reconnaissance of the access route corridor.

1.2 Study Objectives

The objectives of this study were to:

- o conduct a fall water quality sampling, including several new sites,
- o conduct a fall fisheries survey to document distribution and abundance of fish species in Bearskin Creek and the Samotua River in the vicinity of the property,
- o describe fish habitat characteristics of Bearskin Creek and the Samotua River and identify potential salmonid spawning areas,
- o conduct a ground reconnaissance of the potential mine site area and generally describe wildlife habitat and capability,

- summarize wildlife populations and movements in the area from observations and discussions with Chevron field staff,

- collect and summarize available information on fisheries and wildlife from government agencies and other sources, and

- conduct an aerial reconnaissance of the proposed access road corridor from the property to the Dease Lake - Telegraph Creek road and identify potential problem areas, discuss potential significant impacts and suggest mitigative measures that would avoid or minimize potential impacts.

2.0 MINE SITE STUDIES

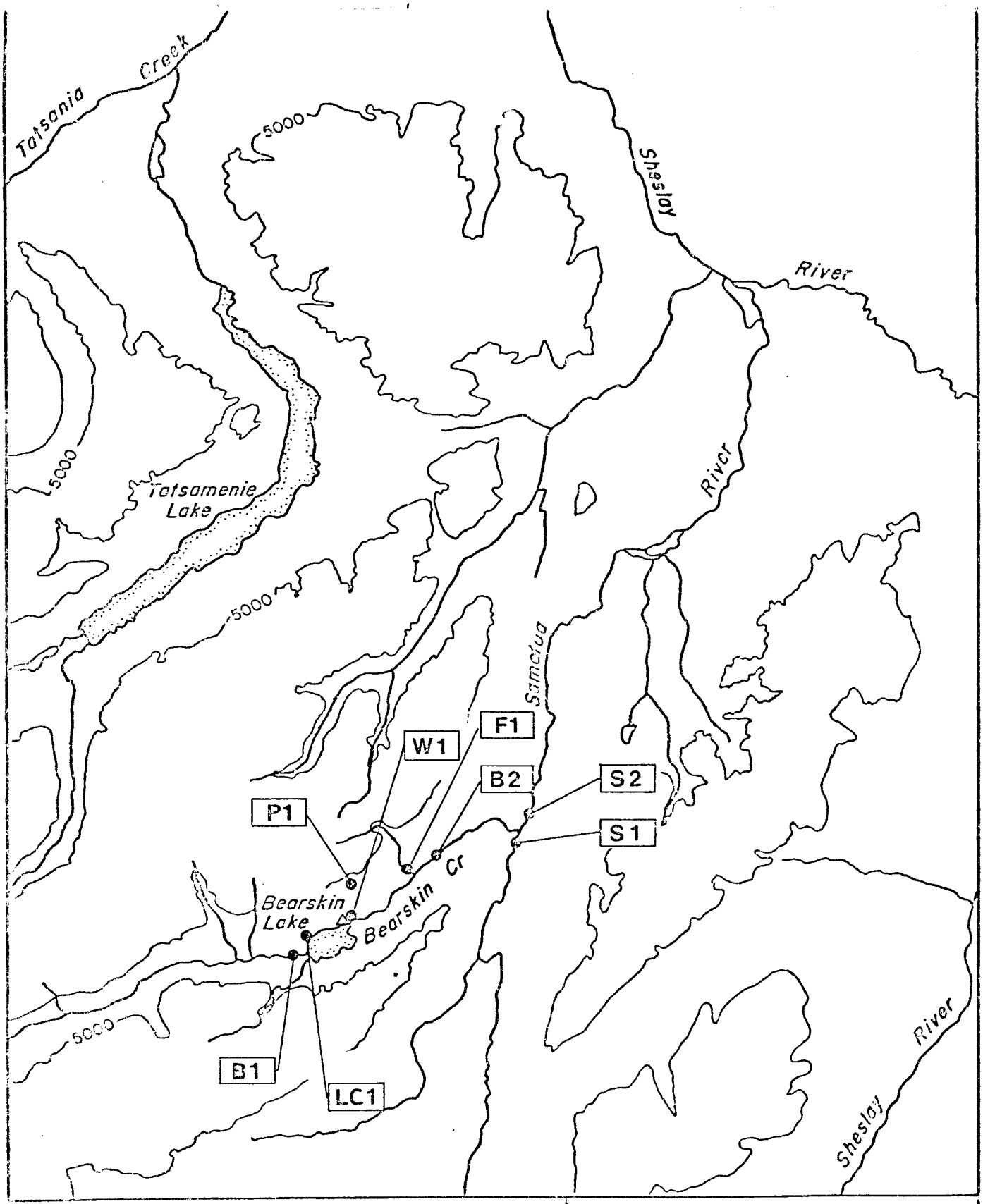
2.1 Water Quality

A water sampling program was initiated at the Bear-Totem property on July 30, 1985 with five surface sample sites and one sample from the Chevron camp's drinking water well. The first sampling represented a mid-summer period, during moderate to high flows in these glacial fed streams. A second sampling was conducted on October 9, 1985 and represented a fall low flow period. Several additional sites were sampled from groundwater flows which surfaced on the property. The camp drinking water was not sampled in October.

The sample sites are shown on Figure 1 and are described in Table 1. Data for the two water samplings conducted in 1985 are given in Appendix 1.

Analysis of samples included all characteristics that must be analyzed soon after collection plus analysis for total metal levels. Analysis for dissolved metals has been postponed to a later date.

Analysis of the camp drinking water sample (site W1 taken in July) showed that all characteristics measured were within the Canadian drinking water standards. The sample was relatively hard, slightly alkaline and had low levels of total metals (Appendix 1). The samples taken in October near groundwater outflows (sites LC1 and P1) were



LEGEND

CHEVRON CAMP △

SCALE

5 0 5 KM

WATER QUALITY SITES

Figure no. 1	BEAR-TOTEM PROPERTY ENVIRONMENTAL STUDIES
Date Nov. 1985	Drawn by Norecol

TABLE 1

WATER QUALITY SAMPLE SITES FOR
CHEVRON CANADA RESOURCES LIMITED'S BEAR-TOTEM PROPERTY

Site No.	Stream	Location
B1	Bearskin Creek	Above inflow to Bearskin Lake; about 500 m south and west of airstrip
B2	Bearskin Creek	Lower creek, at hydrograph site
F1	Fleece Creek	Taken immediately above access road
S1	Samotua River	Above confluence (100 m) of Bearskin Creek
S2	Samotua River	Below confluence (400 m) of Bearskin Creek
W1	Chevron camp well	Drinking water taken from camp laboratory facility
LC1	"Limestone Creek"	Groundwater flowing from slope above north side of Bearskin Lake into lake; sample taken 10 m above lake
P1	Pump site	Groundwater flow eminating from above camp; sample taken at exploration road

similar to the July well sample (site W1) but were about twice as hard as the well water. Nutrients (nitrogen and phosphorus) were low at all three sites sampled. Sites W1 and P1, though taken at different times, were close in most parameters.

Stream water samples indicated that during July, sites B1, B2, S1 and S2 had high total solids, suspended solids and turbidity. Both Bearskin Creek and the Samotua River are glacial meltwater fed streams and these results are not unusual. The settling basin effect of Bearskin Lake on Bearskin Creek is readily evident by comparing the upstream site (B1) with the downstream site (B2) for turbidity, total solids and suspended solids on July 30. This situation was marginally reversed during October, when B2 showed higher levels of these parameters than the upstream site, B1.

Total phosphorus was also elevated at sites B1, B2, S1 and S2 on July 30 compared to the October 9 sampling. This indicates that the higher phosphorus levels at these sites was probably associated with higher solids during July.

Similarly, higher levels of iron and copper at sites B1, S1 and S2 and elevated iron at B2 during July 30, appear to be related to high solids from glacial melt water. During the October 9 sampling when flows were substantially lower at most sites, levels of iron and copper were also lower. The relationship between high solids and higher concentrations of iron and copper

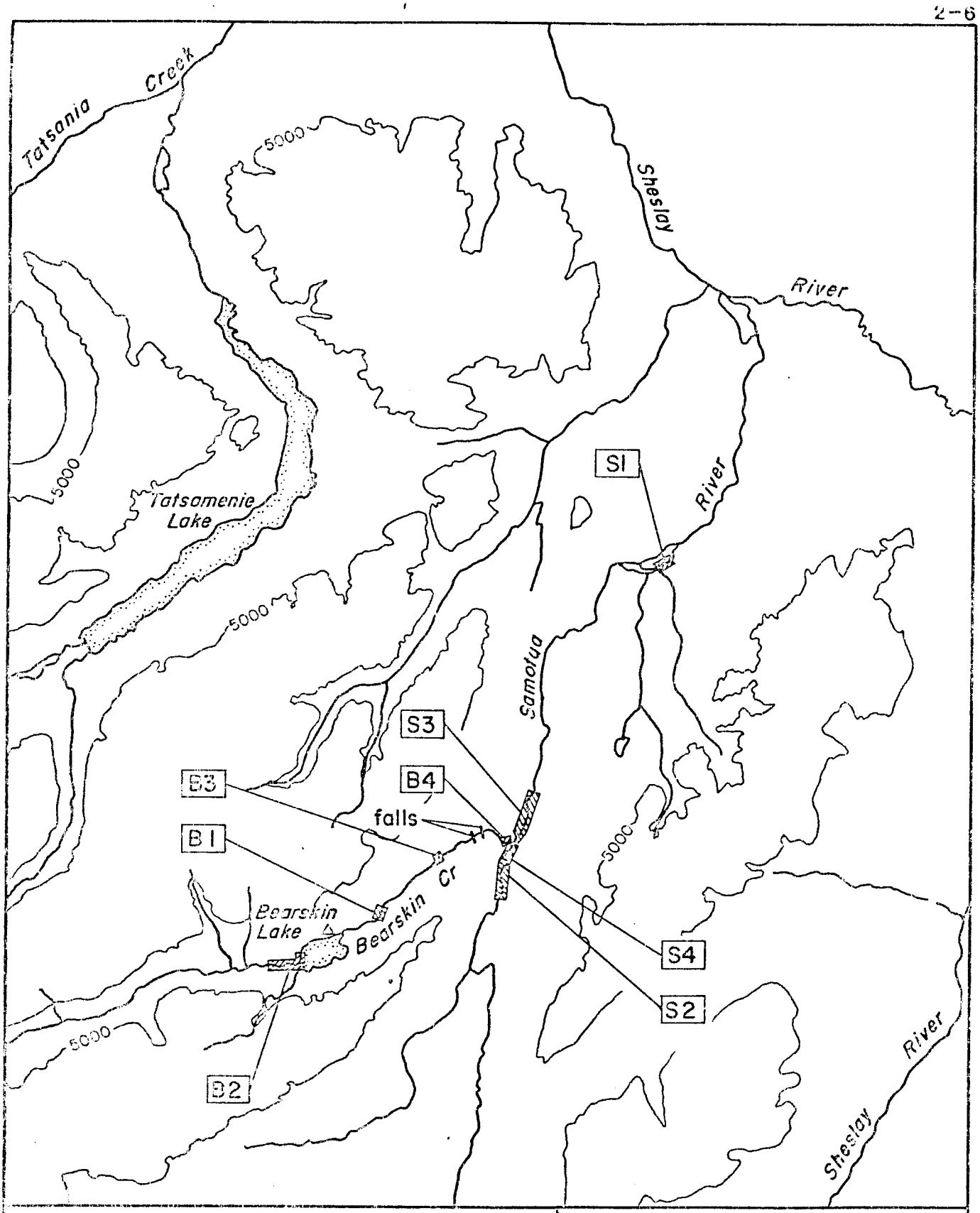
persisted at site B2 for October 9, where levels of iron and solids were both higher than during the July 30 sampling even though creek discharge was lower. This relationship at B2 was probably due to Bearskin Lake which continued to contribute high sediment loading to the creek even though inflow streams were relatively clear during the October sampling.

Sampling of Fleece Creek (site F1) indicated that this creek was different in character from either Bearskin Creek or the Samotua River. Compared to the other surface sites, F1 had low total solids, turbidity and suspended solids during July and October samplings. Total solids (mostly dissolved solids) were somewhat higher on October 9 than on July 30. Nutrients and total metals were low during both July 30 and October 9 samplings at Site F1 (Appendix 1).

2.2 Fisheries

2.2.1 Norecol Studies

Norecol conducted fisheries investigations in the Bear-Totem area during October 7 - 10, 1985. The focus of the investigation was to determine the presence of fish, species composition, population characteristics and fish habitat capability. Fish sampling and habitat capability assessment centered on drainages in the immediate vicinity of the study area, namely Bearskin Lake, Bearskin Creek and the Samotua River. Fish sampling sites are shown on Figure 2 and fish sampling activities are summarized in Table 2.



LEGEND

CHEVRON CAMP △

ELECTROSHOCKING ▨

GILL NET ●

SCALE

5 0 5 KM

FISH SAMPLING SITES

Figure no. 2	BEAR-TOTEM PROPERTY ENVIRONMENTAL STUDIES
Date Nov. 1985	Drawn by Norecol

TABLE 2

SUMMARY OF FISH SAMPLING AT THE BEAR-TOTEM PROPERTY
OCTOBER 7 - 10, 1985

Drainage	Site	Location	Sampling Method	Duration	No. Fish Captured** DV	ST	CH	CO
Samotua River	S1	3.5 km downstream of Bearskin Ck.	ES	32s	7	15	4	16
	S2	0-0.5 km upstream of Bearskin Ck.	ES	1009s	40	0	7	1
	S3	0-0.5 km downstream of Bearskin Ck.	ES	912s	31	0	1	0
	S4	0.2 km upstream of Bearskin Ck.	GN	17h	2	0	0	0
Bearskin Ck.	B1	0.4 km downstream of Bearskin Lake	ES	694s	0	0	0	0
	B2	0-0.3 km upstream of Bearskin Lake and margin of Bearskin Lake	ES	836s	0	0	0	0
	B3	1.0 km downstream of Bearskin Lake	ES	361s	0	0	0	0
	B4	0-0.1 km from mouth	ES	398s	14	0	0	0

* ES - electroshocking
GN - 7.6 cm gill net

** DV - Dolly Varden char
ST - steelhead trout
CH - chinook salmon
CO - coho salmon

Fish species captured during Norecol studies include Dolly Varden char (Salvelinus malma), steelhead trout (Salmo gairdneri), chinook salmon (Oncorhynchus tshawytscha) and coho salmon (O. kisutch). All fish were collected using a Coffelt BP-4 backpack electroshocker except at Site S4 where a 7.6 cm stretch mesh monofilament gill net was used. Biological characteristics of fish collected during this study appear in Appendix 2.

In addition to fish sampling, some site specific aquatic biophysical (point sample) information was collected on the Samotua River (Appendix 3).

Bearskin Creek

The Bear-Totem property lies in the Bearskin Creek drainage basin. The Bearskin Creek drainage includes a small, turbid lake which lies approximately half way between the creek mouth and its source. The stream above the lake is meandering and braided with substrate comprised of gravels and fines from glacial melt. During Norecol studies, Bearskin Lake was very turbid as was the creek downstream of the lake. Bearskin Creek has two falls, each about 10 - 15 m high and approximately 200 m upstream from the mouth. Downstream of the falls and near the confluence with the Samotua River, a series of bedrock outcrops confine the creek, forming chutes and falls 1-2 m high.

Fish sampling at three sites in Bearskin Creek upstream of the falls and at one site in Bearskin Lake did not yield any fish. It would appear, therefore, that the watershed above the falls is barren of fish. Fish were captured only within 100 m of the mouth (site B4) where the catch was comprised entirely of Dolly Varden, two of which were young-of-the-year.

The fish habitat capability of Bearskin Creek is low, primarily due to high suspended solids. This stream supports low densities of rearing Dolly Varden near its mouth but does not contain fish above the falls.

Samotua River

The Samotua River joins the Sheslay River approximately 25 km downstream of Bearskin Creek. Bearskin Creek enters the Samotua River in the middle of a canyon section that is 1-2 km in length. This section is largely confined and has some large bedrock controlled pools. Substrate is generally large with some small areas of good spawning gravels for salmon and Dolly Varden. This canyon section is bounded upstream and downstream by wide, braided, meandering sections comprised mainly of gravelly riffles and glides.

Fish sampling in the Samotua River indicates that Dolly Varden, steelhead trout, coho salmon and chinook salmon spawn and rear in this river in low numbers. Dolly Varden were the most abundant salmonid encountered and

the river probably supports migratory (to downstream larger rivers) and resident populations of this species. Two larger Dolly Varden captured at Site S4 (Appendix 2) may have originated from the Sheslay River. Both were females, one about to spawn and the other spent. This indicates that peak Dolly Varden spawning in this area probably occurs in early October. Redds of salmon and perhaps Dolly Varden, were only observed in low numbers in outflow channels of tributary streams on the gravelly flood plain downstream of the canyon section (Site S1).

The Sumotua River appears to have low fish habitat capability due to the cold water, elevated suspended solids and limited cover (i.e., lack of debris and boulder cover). The greatest concentrations of fish were found in backwater and side channels. Most adult maturation and overwintering habitat for resident Dolly Varden occurs in the canyon section. Based on catch data, the overall fish habitat capability of the Samotua River is considered to be low.

2.2.2 Existing information

A limited amount of fisheries information exists for the study area drainages. Spawning surveys flown by Fisheries and Oceans Canada have observed sockeye (Oncorhynchus nerka), coho and chinook salmon in the Samotua, Sheslay and Hackett rivers (Milligan, pers. comm.). These surveys noted that sockeye spawning in the Samotua River often use backwater areas fed by tributary streams.

A Canada/U.S.A. Transboundary study (1984) documented runs of sockeye, coho, chinook, chum and pink salmon to the Taku River. The Taku River supports an Alaskan drift gillnet fishery and a Canadian in-river gillnet fishery. Mean annual catch from these fisheries for the period between 1979 and 1983 is listed below:

	Sockeye	Coho	Chinook	Chum	Pink
Canadian Fishery	16,039*	6,102*	515	10,355	13,281*
Alaska District III	81,821	27,010	1,529	58,942	175,317

(* excludes 1982 because of restricted fishery)

The most recent information on the Taku River, provided by Fisheries and Oceans Canada, are 1985 counts for weirs (Harrison, pers. comm.). The 1985 counts were as follows:

	Sockeye	Coho	Pink	Chinook
Hackett River	2,309	931	-	434
Little Trapper Lake	14,886	56	-	18
Little Tatsamenie Lake	13,015	201	-	446
Nakina River	2,588	-	45,111	-
Tahltan River	67,326	-	-	-
Little Tahltan River	-	3,147	-	-

Salmon counts have only been conducted for one year except for the Nakina River and Little Trapper Lake. Counts for the Tahltan River and Little Tahltan River, in the Stikine River system, have been included because of their proximity to the proposed access route. Weirs in the Taku

River system which are most pertinent to the study area include the Hackett River, which is located near its confluence with the Sheslay River (about 25 km upstream of the Samotua/Sheslay confluence)and Little Tatsamenie Lake, which is located at the lake outflow.

2.3 Wildlife

Wildlife work in the project area has included several helicopter flights and ground reconnaissance during July 30-31 and October 7-10, 1985. A systematic record of significant wildlife observations by exploration crews and camp staff in the Bear-Totem exploration area was initiated by Chevron in April of 1985. This record has, to date, produced a valuable inventory of wildlife populations in the area.

2.3.1 Ungulates

The most common and abundant ungulates in the Bear-Totem area are Stone's sheep which inhabit the steep, rocky, south-facing slopes above Bearskin Lake. Most sheep have been observed on the northwest side of Bearskin Lake with few sightings recorded on the other side of the valley. Sheep occupy the Bear-Totem area throughout summer and have frequently been observed in the exploration area. Up to 104 sheep (ewes, lambs and yearlings) were observed on the ridges and slopes of the Bear-Totem area at one time. Usually, smaller groups of ewes, lambs and yearlings occur throughout the area into the fall. Rams generally remain outside of the Bear-Totem area until the fall.

Direct evidence of lambing in the Bear-Totem area has not been recorded although it appears that some lambing may occur in the area to the west. Small lambs have been observed on the slopes above the Chevron camp in early summer and would have moved there from nearby lambing sites.

By late October, rams would start to join the other sheep on the slopes above the lake in preparation for the rut. There is little information presently available for the rutting and winter period for sheep in the area. The program of recording observations should contribute significantly to an understanding of timing of the rut and winter activity in the area. Sheep usually have finished rutting activity by late December and then move off to their winter range, except where the rutting ranges coincide with the winter ranges. It is possible that at least part of the Stone's sheep population stays in the area (south-facing slopes above Bearskin Lake) throughout the winter.

More information on movement of sheep, population structure and habitat use will be available once a full year's data record has been established from the Chevron observation program.

An assessment of habitat capability would be of benefit in understanding habitat relationships in the area. From the initial reconnaissance and limited ground work to date, it appears that the Bear-Totem area has at least a moderate capability as summer and fall range for sheep. The terrain is suitably steep and rugged and adequate escape terrain exists over most of the area. Food

resources, however, appear to be limited. There are small areas of grasses, sedges and forbs and some low growing shrubs, but generally, food resources may be a limiting factor in the area, particularly if the area is used as winter and spring range.

Moose are relatively common in the lower elevations along the Bearskin Creek valley to the Samotua River. Moose are often seen in the slide areas on the south side of Bearskin Creek up as far as the lake and occasionally along the lake and farther to the west. Moose congregate in the Bearskin Creek valley for the fall rut and large numbers (over 20) have been observed in some years. By December, moose usually move down to the Samotua River or further on to their winter ranges in the Sheslay River valley. They reappear again in the Bearskin Creek valley as far as the lake by early summer. There is generally an abundance of forage for moose in the slide areas on both sides of the Bearskin Creek valley and in places along the creek.

Mountain goats also occur adjacent to the Bear-Totem property and have been observed several times on adjacent ridges, particularly to the north.

2.3.2 Carnivores and furbearers

Black bears are common at lower elevations of the exploration area but have also been observed in the spring and early summer feeding on the lower, grassy ridges to the northeast of the Chevron camp. Grizzly bears are less common but occasionally move through the area. One grizzly was regularly observed on the floodplain of Bearskin Creek above the lake in summer,

1985 and a sow and cub were observed for several days in October feeding in the slide areas on the lower, south facing valley slope west of the lake. Little is known of denning activity in the Bear-Totem area but both species may den in the vicinity.

Smaller carnivores and furbearers occur throughout part or all of the Bear-Totem area. Wolves were sighted or their sign observed occasionally. A red fox and a coyote were observed in the vicinity in summer 1985. Lynx were seldom observed and their numbers at present appear to be low. Small numbers of wolverine, marten and beaver occur in the area. There is a beaver pond along Bearskin Creek several km below the lake.

2.3.3 Birds

Larger birds in the area include Bald Eagles, Golden Eagles, Spruce Grouse and Ptarmigan (possibly several species). Waterfowl are limited to Bearskin Lake, the beaver ponds along Bearskin Creek below the lake and the Samotua River. Most waterfowl use of the area would be during the migration period and during the late summer molt period. The observation program by Chevron will provide information on the seasonal abundance of the larger species of birds in the area, particularly the large raptors.

3.0 ACCESS ROAD

3.1 Background

Project viability will require the construction of an access route to the Bear-Totem property from a point on the Dease Lake - Telegraph Creek road, a distance of approximately 147 km. An approximate corridor for the access route is shown on Figure 3 (back pocket). The corridor departs westward from the Telegraph Creek road near IR 10, approximately 14 km northeast of Telegraph Creek, and heads westward along the lower slopes of Level Mountain. The corridor then continues northwestward along the Hackett and Sheslay rivers to a point just south of the Sheslay and Samotua River confluence. From there, the corridor follows the Samotua River and then Bearskin Creek in a southwestward direction to the Bear-Totem property.

A reconnaissance survey of the route corridor was flown by helicopter on October 10, 1985. Observations were made on potential stream crossings, fish habitat capability, wildlife habitat and possible land use conflicts along the corridor. The access route corridor is shown on Figure 3 along with possible stream crossings and environmentally sensitive zones.

3.2 Aquatic Aspects

The aquatic resources along the proposed route include numerous headwater streams with limited fisheries capabilities and several rivers which are considered

to have high fisheries capabilities. The following discussion of the more important stream crossings presents information from our observtions and provides a preliminary assessment of the level of concern asociated with most crossings. Salmonid escapements for 1985 for selected Fisheries and Oceans Canada weirs near the road corridor appear on Figure 3.

Samotua River

The Samotua River has overall low fish habitat capability. The river has small numbers of Dolly Varden char, steelhead trout, coho salmon and chinook salmon. The proposed crossing occurs downstream of Bearskin Creek at a point where the river is confined on both banks by bedrock. A bridge would span the river with approaches well removed from the wetted perimeter. Due to the stability of this site, water quality concerns are minimal and fisheries resources are not expected to be significantly affected, provided that bridge piers do not significantly alter flow patterns.

A relatively incised right bank tributary to the Samotua River is crossed near the Sheslay River (Site 2). This stream is small and has doubtful fish habitat. If the stream were crossed by a culvert, then the fill would be large and would be of limited concern, primarily with regard to sedimentation to the Samotua and Sheslay rivers. Other tributaries to the Samotua River are small with no fisheries capability.

Sheslay River

The Sheslay River is an important river for anadromous and resident salmonids, with excellent spawning and rearing potential. The possible crossing area is quite steep and, unlike the Samotua River, is not confined by bedrock but rather by alluvial and colluvial material. The greatest concerns would be associated with effects of construction activity and hydraulic effects of bridge piers on fish migration.

Five small tributaries on the west side of the Sheslay River would be crossed by the proposed route. The first drainage (Site 3) is deeply incised and has unstable banks. The stream has low fisheries capability, but the length of fill and culvert required may cause sedimentation that could reach the Sheslay River. The second (Site 4), third (Site 5) and fourth (Site 6) drainages are moderately to deeply incised, have stable banks and have low fish capability. These are not expected to have significant potential sedimentation problems. The crossing of the fifth tributary (Site 7) would occur at, or slightly upstream of, a low gradient, stable section which has some fisheries potential. Concerns would primarily be associated with sedimentation of the stream and the Sheslay River.

Considerable cutting may be required along the length of road in the Sheslay Valley which could be of limited concern with regards to sedimentation problems.

Hackett River

The proposed route crosses Egnell Creek,a moderately sized tributary to the Hackett River. Egnell Creek has some potential for salmon spawning, but should not be difficult to cross. After crossing Egnell Creek, the route traverses away from the Hackett River along a ridge on the north side of the river and climbs to the slopes of Level Mountain. The route should not affect other tributaries to the Hackett River.

Tahltan River

Upon leaving the Hackett River drainage the corridor enters the Tahltan River - Stikine River basin and would cross several north side tributaries of the Tahltan River.

The crossing of the Little Tahltan River is expected to be one of the most difficult and potentially most sensitive. The route is expected to cross downstream of the last tributary in an area of steep side hills. The approaches to the bridge would require considerable cut and fill. Also, the channel was estimated to be approximately 30 m wide and have a gradient of about 1%. The Little Tahltan River is an important salmon bearing stream and has a Fisheries and Oceans Canada weir near its mouth. Sediment deposition, habitat alienation and hydraulic alteration must be minimized on this drainage.

Bear Creek is deeply incised at the possible crossing site with a channel about 10 m wide and a gradient of 2-3%. The fisheries values are considered to be low since riffle/run habitat and large substrate predominates, and a 20 m falls occurs near its mouth. Some sediment loading to the Tahltan River may occur during construction.

Beatty Creek is a large tributary of the Tahltan River. The stream appears to have moderate fisheries capability, and a canyon near the mouth may deter some fish from entering the upper watershed. The possible crossing area has a channel about 15 m wide and a gradient of about 2%. The stream is stable and sedimentation problems are not anticipated.

Middle Creek is a small stream which branches into two streams near its mouth. Both branches are crossed in stable, moderately steep areas where channel widths are about 2-3 m. The stream may have moderate fisheries capability near its mouth where the valley is wider and the gradient is more gradual. Fisheries concerns for this stream are low.

Hartz Creek is a small stream which is relatively deeply incised. The banks are stable, the gradient is about 2% and the channel is about 2-3 m wide. There would probably not be significant erosion problems and the stream is thought to have low fisheries capability.

Tuya River

Current plans are to connect with the Telegraph Creek road on the west side of the Tuya River. This road crosses the Tuya River about 2.5 km from its confluence with the Stikine River. The existing road crossing will require some upgrading. The Tuya River appears to have high fisheries values, but providing that upgrading of the existing crossing is not too extensive, no significant impact is anticipated.

In summary, the major concerns that would be associated with the access route would be: sedimentation (particularly during construction), alienation of fish habitat at the crossing location, and alteration of hydraulic patterns that could affect migration of fish. Another major concern is a management problem associated with new access to an area that has previously had limited access and has fish populations that are highly susceptible to angling pressure.

3.3 Wildlife Aspects

Wildlife habitat along the route is in various stages of succession, including post fire regeneration, maturing spruce-fir and mature black spruce with sedge meadow openings.

Along Bearskin Creek and the shoulder on the east side of the Samotua River, the route crosses older coniferous

forest with lodgepole pine-black spruce and openings of willow-birch-sedge. Along the benches above the Samotua River, and over to the Sheslay River, large areas are covered by post fire successional stages of lodgepole pine-spruce-fir and clumps of deciduous shrubs and trees (mostly birch, willow and aspen). The same type of post fire succession occurs on the lower slopes of the Sheslay River while the upper slopes have predominantly maturing coniferous forest.

The crossing of the Sheslay River would be the only crossing of a major river floodplain. Habitat along the floodplain includes deciduous shrub and tree (aspen and willow) on the lower valley slopes; poplar and spruce and willow-birch-sedge along the riverbanks; as well as large expanses of sedge meadow along old channels.

Habitat becomes increasingly dominated by mature coniferous forest heading up the Hackett River and eastward along the lower slopes of Level Mountain. Several large areas of post fire succession with mixed coniferous and deciduous trees and shrubs occur on the lower slopes of Level Mountain although most of the habitat is mature coniferous forest (mostly black spruce).

The proposed access route corridor crosses primarily moose summer and fall range throughout most of its length. Moose winter range would occur in the Shesley River valley floodplain as well as the lower slopes on both sides of the valley where the post fire succession of deciduous vegetation has provided abundant browse. Some moose winter range may also occur on the lower slopes of Level Mountain where regeneration of burn areas has provided suitable winter range.

Limited caribou range would be crossed by the access route, primarily along Level Mountain in the unburned, mature or maturing coniferous forest. The corridor does not contact known Stone's sheep or mountain goat range.

The main ungulate species that could be directly impacted would be moose. In terms of habitat loss, however, the actual amount of habitat that would be affected is small compared to the amount of similar habitat that would still be available. A small amount of caribou habitat may be affected in the coniferous zone on the lower slopes of Level Mountain.

The access route corridor also encompasses habitat for black bears and wolves, and a variety of smaller furbearers including beaver, wolverine, lynx, marten and mink. Potential impacts in terms of direct habitat effects would again be minor. The crossing of the Sheslay River would involve some of the better riparian or floodplain furbearer habitat in the region.

The most significant potential impacts, however, would be more indirect and would center on increased access to the area. This could increase significantly the presently, relatively low pressure on wildlife populations. The majority of hunting activity in the area is by guided hunters and as such is more or less "controlled" by the quotas set by the Wildlife Branch. There is also some trapping activity. Increasing access has the potential to significantly increase hunting pressure by allowing non-guided hunters to enter the area. This could not

only affect moose and caribou populations but also Stone's sheep and mountain goat populations in the higher regions.

The potential impacts of increasing access on wildlife could be largely mitigated by making the access road limited or restricted access, open only to authorized company and other business traffic. As well, firearms could be prohibited in all vehicles using the road and this would reduce the potential problems of hunting related impacts. Special regulations or hunting closures along the road and especially sensitive areas could also be used as a tool for reducing potential problems. Similar measures have been suggested to mitigate potential wildlife and fisheries related impacts along the Omineca mining road.

Another potential impact from an industrial access road is often related to animal kills from collisons with vehicles. This is a particular concern in winter ranges. The degree of this potential impact cannot be estimated without more information on the winter distribution of wildlife along the access road corridor. Again, this type of impact can usually be mitigated by appropriate management strategies, including speed limit restrictions, snow clearing to facilitate known crossing areas, wider rights-of-way near crossings, and familiarization programs for vehicle operators. A considerable amount of knowledge has recently become available on the problem of animal-vehicle collisions. Methods to avoid or minimize the potential problems could be applied to this access route as well.

3.4 Land Use Aspects

Potential land use effects of the access route could impact several traditional land uses of the area along the corridor, namely big game guiding and trapping. These activities have been practiced by locals of the Telegraph Creek area as well as other outfitters from northern communities and have the potential for being impacted by an access route. These potential impacts are again primarily wildlife related and could be partially mitigated by controlling or restricting access along the route.

Forestry values are generally low in the area and would be little affected by the access route. One positive impact could be for other mineral exploitation as both exploration and development activities of other mineralized areas would be enhanced by the presence of an access route.

4.0 RECOMMENDATIONS

4.1 Mine Site

General requirements for a complete Stage I environmental assessment of the mine site area were discussed in the earlier report by Norecol (1985). One of the recommendations in that report was that additional water quality sampling and a fall fisheries survey be conducted in the fall of 1985. This has been accomplished by the present work. It was also recommended that a winter water sampling be conducted in late winter in order to sample winter low flows (usually March in the area). At the same time, a winter wildlife survey could be carried out if a helicopter is used for the sampling. This work is recommended for March, 1986 so that the necessary full studies for a Stage I report can be completed in 1986.

A project Prospectus should be prepared for submission to government in early 1986 in order to maintain the project schedule for 1986 submission of a Stage I report. Based on the fall 1985 studies, the recommendations for Stage I studies as outlined in our earlier report (Norecol, 1985) are still valid in general terms.

The remaining environmental studies can be completed in the spring - late summer of 1986 with submission of the Stage I report in the fall of 1986.

4.2 Access Road

Assuming that the necessary environmental studies may also be required for the access road in 1986, it would be advisable to conduct a wildlife survey along the proposed route in March 1986. This can be done concurrently with the water sampling if a helicopter is available. Information from the survey would help to identify ungulate winter ranges (primarily moose) along the access route corridor. In conjunction with the field work, it would also be beneficial to start discussions with the Ministry of Environment about possible requirements for environmental studies along the corridor.

A program of environmental studies would be required in order to provide input to engineering design. The details of such a program would have to be discussed with the appropriate resource agencies, but would probably include more detailed studies of:

- water quality
- fisheries
- hydrology
- surficial materials
- wildlife habitat, population and range use, and
- land use aspects.

Most of these studies would be conducted during the spring-summer-fall period and, if a wildlife survey is conducted in March, 1986, could be completed by the fall of 1986.

The above work would be oriented to identifying specific difficulties along the route and suggesting alternatives or mitigative measures to avoid or reduce potential impacts from road construction and during the operating period.

5.0 WINTER 1986 WORK COST ESTIMATE

Work recommended for winter, 1986 would include the preparation of a Project Prospectus Report; a water sampling/wildlife reconnaissance of the Bear-Totem area and the proposed access road corridor; and an assessment of the potential for a spill from the mine on the Bearskin Creek - Samotua River - Sheslay River system. The costs for these are estimated below.

5.1 Prospectus Report

A Project Prospectus Report would be prepared in January - February, 1986.

Preparation

R. Hawes, J. Malick	32 h @	$60 =	$1,920
C. Schmidt	16 h @	50 =	$ 800
Word Processing, Secretarial	20 h @	30 =	$ 600
Drafting	16 h @	30 =	$ 480
Photocopies, report printing		=	$ 600
Travel expenses (1 trip to Victoria)		=	$ 100
	TOTAL		$4,500

* (Report covers and base maps as well as a description of the mine plan are to be provided by Chevron Canada Resources Limited.)

5.2 Field Work

Water sampling in the mine site area in early to mid-March, 1986 plus wildlife reconnaissance of mine site area and access road corridor.

Preparation, travel, field work*

C. Schmidt	40 h @ $50/h	=	$2,000
Airfare (Whitehorse return)		=	570
Travel expenses (hotel, equipment)		=	100
Air cargo		=	150
			$2,820

Lab Analysis

B.C. Research	6 sites @ $255/site	=	$1,350

Reporting

R. Hawes/J. Malick	8 h @ $60	= $	480
C. Schmidt	16 h @ 50	= $	800
Word Processing	10 h @ 30	= $	300
Secretarial			
Drafting	8 h @ 30	= $	240
Photocopies, printing, courier etc.			300
			$2,120
	TOTAL		$6,290

* (Air charter costs for Whitehorse to Bear-Totem camp and return plus helicopter time to be provided by Chevron Canada Resources Limited. If helicopter is used, then 5 -6 hours are estimated. Water sampling at mine site could be done by snowmobile and this could save 1 - 1.5 hours of helicopter time. Field assistant for 2-3 days to be provided by Chevron Canada Resources Limited.)

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APPENDIX 1

ANALYTICAL RESULTS FOR WATER SAMPLES FROM CHEVRON CANADA RESOURCES LIMITED BEAR-TOTEM PROJECT

ANALYTICAL RESULTS FOR WATER SAMPLES FROM
CHEVRON CANADA RESOURCES LTD. BEAR TOTEM PROJECT
SAMPLE SITE: B1

ANALYTICAL PARAMETER	JULY 30, 1985	OCTOBER 9, 1985
Temperature	-	2.0
pH	8.6	7.4
Alkalinity ($mgCaCO_3/L$)	34	43
Turbidity (NTU)	220	1.5
Conductance (µmhos/cm)	51	85
Total Solids (mg/L)	598	89
Suspended Solids (mg/L)	547	<1
EDTA-Hardness ($mgCaCO_3/L$)	29	45
Sulfate (mg/L)	5	7
Ammonia (mgN/L)	<0.005	<0.005
Nitrate (mgN/L)	0.012	0.005
Nitrite (mgN/L)	<0.002	<0.002
Total Phosphorus (mgP/L)	0.319	<0.003
Total Cyanide (mg/L)	<0.001	<0.001
TOTAL METALS: (mg/L)		
Ag	<0.0005	<0.0005
As	0.0026	<0.001
Ba	0.12	0.011
Cd	<0.0002	<0.0002
Cu	0.033	0.0007
Fe	7.0	0.065
Hg (µg/L)	<0.05	<0.05
Pb	0.0035	<0.001
Zn	0.0100	0.0006

ANALYTICAL RESULTS FOR WATER SAMPLES FROM
CHEVRON CANADA RESOURCES LTD. BEAR TOTEM PROJECT
SAMPLE SITE: B2

ANALYTICAL PARAMETER	JULY 30, 1985	OCTOBER 9, 1985
Temperature	-	4.5
pH	8.0	7.5
Alkalinity ($mgCaCO_3/L$)	40	50
Turbidity (NTU)	50	24
Conductance (µmhos/cm)	74	97
Total Solids (mg/L)	107	116
Suspended Solids (mg/L)	39	15
EDTA-Hardness ($mgCaCO_3/L$)	41	54
Sulfate (mg/L)	6	9
Ammonia (mgN/L)	<0.005	0.005
Nitrate (mgN/L)	0.020	0.010
Nitrite (mgN/L)	<0.002	<0.002
Total Phosphorus (mgP/L)	0.119	<0.003
Total Cyanide (mg/L)	<0.001	<0.001
TOTAL METALS: (mg/L)		
Ag	<0.0005	<0.0005
As	0.001	<0.001
Ba	0.040	0.023
Cd	<0.0002	<0.0002
Cu	0.0041	0.0026
Fe	1.08	1.13
Hg (µg/L)	<0.05	<0.05
Pb	<0.001	<0.002
Zn	0.0030	0.0012

ANALYTICAL RESULTS FOR WATER SAMPLES FROM
CHEVRON CANADA RESOURCES LTD. BEAR TOTEM PROJECT
SAMPLE SITE: F1

ANALYTICAL PARAMETER	JULY 30, 1985	OCTOBER 9, 1985
Temperature	-	2.5
pH	7.9	7.8
Alkalinity ($mgCaCO_3/L$)	38	58
Turbidity (NTU)	1.0	0.4
Conductance (μmhos/cm)	65	110
Total Solids (mg/L)	59	102
Suspended Solids (mg/L)	<1	2
EDTA-Hardness ($mgCaCO_3/L$)	38	62
Sulfate (mg/L)	3	10
Ammonia (mgN/L)	<0.005	<0.005
Nitrate (mgN/L)	<0.005	<0.005
Nitrite (mgN/L)	<0.002	<0.002
Total Phosphorus (mgP/L)	0.013	<0.003
Total Cyanide (mg/L)	<0.001	<0.001
TOTAL METALS: (mg/L)		
Ag	<0.0005	<0.0005
As	<0.001	<0.001
Ba	0.032	0.042
Cd	<0.0002	<0.0002
Cu	0.0012	0.0014
Fe	0.09	0.003
Hg (μg/L)	<0.05	<0.05
Pb	<0.001	<0.001
Zn	<0.0005	0.0005

ANALYTICAL RESULTS FOR WATER SAMPLES FROM
CHEVRON CANADA RESOURCES LTD. BEAR TOTEM PROJECT
SAMPLE SITE: S1

ANALYTICAL PARAMETER	JULY 30, 1985	OCTOBER 9, 1985
Temperature (°C)	-	3.0
pH	8.2	7.9
Alkalinity ($mgCaCO_3/L$)	38	71
Turbidity (NTU)	135	1.8
Conductance (µmhos/cm)	65	158
Total Solids (mg/L)	371	128
Suspended Solids (mg/L)	320	<1
EDTA-Hardness ($mgCaCO_3/L$)	37	172
Sulfate (mg/L)	7	19
Ammonia (mgN/L)	<0.005	<0.005
Nitrate (mgN/L)	0.020	0.026
Nitrite (mgN/L)	<0.002	<0.002
Total Phosphorus (mgP/L)	0.358	<0.003
Total Cyanide (mg/L)	<0.001	<0.001
TOTAL METALS: (mg/L)		
Ag	<0.0005	<0.0005
As	0.0050	0.0010
Ba	0.089	0.041
Cd	<0.0002	<0.0002
Cu	0.0105	0.0005
Fe	5.8	0.13
Hg (µg/L)	<0.05	0.06
Pb	0.0029	<0.001
Zn	0.0081	0.0007

ANALYTICAL RESULTS FOR WATER SAMPLES FROM
CHEVRON CANADA RESOURCES LTD. BEAR TOTEM PROJECT
SAMPLE SITE: S2

ANALYTICAL PARAMETER	JULY 30, 1985	OCTOBER 9, 1985
Temperature (°C)	-	3.5
pH	8.3	7.8
Alkalinity ($mgCaCO_3/L$)	38	67
Turbidity (NTU)	125	6.2
Conductance (umhos/cm)	67	140
Total Solids (mg/L)	295	122
Suspended Solids (mg/L)	230	4
EDTA-Hardness ($mgCaCO_3/L$)	39	87
Sulfate (mg/L)	7	17
Ammonia (mgN/L)	<0.005	<0.005
Nitrate (mgN/L)	0.020	0.030
Nitrite (mgN/L)	<0.002	<0.002
Total Phosphorus (mgP/L)	0.694	0.004
Total Cyanide (mg/L)	<0.001	<0.001
TOTAL METALS: (mg/L)		
Ag	<0.0005	<0.0005
As	0.0077	<0.001
Ba	0.13	0.039
Cd	<0.0002	<0.0002
Cu	0.0165	0.0010
Fe	11.3	0.41
Hg (µg/L)	<0.05	<0.5
Pb	0.0051	<0.001
Zn	0.0091	0.0008

ANALYTICAL RESULTS FOR WATER SAMPLES FROM
CHEVRON CANADA RESOURCES LTD. BEAR TOTEM PROJECT
SAMPLE SITE: W1

ANALYTICAL PARAMETER	JULY 30, 1985
pH	7.9
Alkalinity ($mgCaCO_3/L$)	142
Turbidity (NTU)	<0.1
Conductance (μmhos/cm)	271
Total Solids (mg/L)	125
Suspended Solids (mg/L)	<1
EDTA-Hardness ($mgCaCO_3/L$)	153
Sulfate (mg/L)	18
Ammonia (mgN/L)	<0.005
Nitrate (mgN/L)	0.112
Nitrite (mgN/L)	<0.002
Total Phosphorus (mgP/L)	0.003
Total Cyanide (mg/L)	<0.001
TOTAL METALS: (mg/L)	
Ag	<0.0005
As	<0.001
Ba	0.028
Cd	<0.0002
Cu	0.0017
Fe	0.032
Hg (μg/L)	<0.05
Pb	<0.001
Zn	0.0106

ANALYTICAL RESULTS FOR WATER SAMPLES FROM
CHEVRON CANADA RESOURCES LTD. BEAR TOTEM PROJECT
SAMPLE SITE: LC1

ANALYTICAL PARAMETER	OCTOBER 9, 1985
Temperature (°C)	9.0
pH	8.1
Alkalinity ($mgCaCO_3/L$)	72
Turbidity (NTU)	0.6
Conductance (µmhos/cm)	156
Total Solids (mg/L)	136
Suspended Solids (mg/L)	<1
EDTA-Hardness ($mgCaCO_3/L$)	79
Sulfate (mg/L)	25
Ammonia (mgN/L)	<0.005
Nitrate (mgN/L)	0.019
Nitrite (mgN/L)	<0.002
Total Phosphorus (mgP/L)	<0.003
Total Cyanide (mg/L)	<0.001
TOTAL METALS: (mg/L)	
Ag	<0.0005
As	0.0011
Ba	0.017
Cd	<0.0002
Cu	0.0005
Fe	0.038
Hg (µg/L)	<0.05
Pb	<0.001
Zn	0.0006

ANALYTICAL RESULTS FOR WATER SAMPLES FROM
CHEVRON CANADA RESOURCES LTD. BEAR TOTEM PROJECT
SAMPLE SITE: P1

ANALYTICAL PARAMETER	OCTOBER 9, 1985
Temperature	2.0
pH	8.1
Alkalinity ($mgCaCO_3/L$)	154
Turbidity (NTU)	0.3
Conductance ($\mu mhos/cm$)	267
Total Solids (mg/L)	122
Suspended Solids (mg/L)	<1
EDTA-Hardness ($mgCaCO_3/L$)	94
Sulfate (mg/L)	26
Ammonia (mgN/L)	<0.005
Nitrate (mgN/L)	0.033
Nitrite (mgN/L)	<0.002
Total Phosphorus (mgP/L)	<0.003
Total Cyanide (mg/L)	<0.001
TOTAL METALS: (mg/L)	
Ag	<0.0005
As	<0.001
Ba	0.044
Cd	<0.0002
Cu	0.0006
Fe	0.011
Hg ($\mu g/L$)	<0.05
Pb	<0.001
Zn	0.0005

APPENDIX 2

FISH CAPTURED IN THE BEAR-TOTEM PROPERTY, 1985

(pages 1 - 4)

APPENDIX 2
FISH CAPTURED IN THE BEAR-TOTEM PROPERTY, 1985

Drainage	Site	Date	Time	Method*	Species**	Length (mm)	Weight (g)	Sex	Age
Samotua R.	S1	Oct. 7	1700	EF	CO	07			
				EF	CH	93			
				EF	DV	122			
				EF	DV	79			
				EF	SH	55			
				EF	CO	53			
				EF	DV	96			
				EF	DV	81			
				EF	SH	55			
				EF	CO	56			
				EF	DV	123			
				EF	CO	64			
				EF	CH	69			
				EF	CO	66			
				EF	CO	62			
				EF	SH	58			
				EF	SH	50			
				EF	CO	58			
				EF	CH	90			
				EF	SH	70			
				EF	SH	58			
				EF	SH	56			
				EF	DV	49			
				EF	SH	53			
				EF	CO	53			
				EF	CH	76			
				EF	CO	61			
				EF	CO	65			
				EF	CO	54			
				EF	SH	50			
				EF	SH	52			
				EF	CO	54			
				EF	CO	66			
				EF	SH	50			
				EF	SH	49			
				EF	CO	54			
				EF	SH	62			

continued. . .

APPENDIX 2 (continued)

Drainage	Site	Date	Time	Method	Species	Length (mm)	Weight (g)	Sex	Age
Samotua River	S2	Oct.7	1700	EF	DV	45			
				EF	SH	49			
				EF	SH	55			
				EF	CO	48			
				EF	CO	51			
	S2	Oct.8	1200	EF	DV	123			
				EF	DV	131			
				EF	DV	140			
				EF	DV	43			
				EF	DV	41			
				EF	DV	95			
				EF	DV	114			
				EF	CO	65			
				EF	CH	76			
				EF	CH	78			
				EF	DV	88			
				EF	CH	75			
				EF	DV	41			
				EF	DV	53			
				EF	DV	112			
				EF	DV	105			
				EF	DV	93			
				EF	DV	70			
				EF	DV	78			
				EF	DV	73			
				EF	CH	84			
				EF	DV	48			
				EF	DV	84			
				EF	CH	78			
				EF	DV	71			
				EF	DV	37			
				EF	DV	77			
				EF	DV	101			
				EF	DV	51			
				EF	DV	78			
				EF	DV	45			
				EF	DV	74			
				EF	DV	43			
				EF	DV	47			
				EF	DV	77			

continued. . .

APPENDIX 2 (continued)

Drainage	Site	Date	Time	Method*	Species**	Length (mm)	Weight (g)	Sex	Age
Samotua River	S2	Oct.8	1200	EF	CH	64			
				EF	DV	41			
				EF	DV	46			
				EF	CH	61			
				EF	DV	32			
				EF	DV	39			
				EF	DV	35			
				EF	DV	52			
				EF	DV	39			
				EF	DV	71			
				EF	DV	48			
				EF	DV	41			
				EF	DV	42			
Bearskin Cr.	B4	Oct.8	1330	EF	DV	101			
				EF	DV	108			
				EF	DV	105			
				EF	DV	61			
				EF	DV	130			
				EF	DV	83			
				EF	DV	70			
				EF	DV	79			
				EF	DV	48			
				EF	DV	161			
				EF	DV	179			
				EF	DV	152			
				EF	DV	173			
				EF	DV	41			
Samotua River	S3	Oct.8	1430	EF	DV	51			
				EF	DV	76			
				EF	DV	81			
				EF	DV	64			
				EF	DV	66			
				EF	DV	93			
				EF	DV	98			
				EF	DV	82			
				EF	DV	45			
				EF	DV	81			
				EF	DV	45			
				EF	DV	71			
				EF	DV	75			
				EF	DV	68			

continued. . .

APPENDIX 2 (concluded)

Drainage	Site	Date	Time	Method*	Species**	Length (mm)	Weight (g)	Sex	Age
Samotua River	S3	Oct.8	1430	EF	CH	92			
				EF	DV	49			
				EF	DV	46			
				EF	DV	73			
				EF	DV	71			
				EF	DV	71			
				EF	DV	62			
				EF	DV	67			
				EF	DV	51			
				EF	DV	74			
				EF	DV	76			
				EF	DV	99			
				EF	DV	86			
				EF	DV	45			
				EF	DV	75			
				EF	DV	70			
				EF	DV	49			
				EF	DV	52			
Samotua R.	S4	Oct. 10	1100	GN	DV	455	940	F	7+
				GN	DV	455	900	F	8+

* EF - Electroshocker
GN - 3 in. gill net

** DV - Dolly Varden
ST - steelhead trout
CH - chinook salmon
CO - coho salmon

APPENDIX 3

APPENDIX 3

AQUATIC BIOPHYSICAL DATA COLLECTED ON THE SAMOTUA RIVER, OCTOBER 1985

POINT SAMPLE

Point No 1 of 1

System Name SAMOTUA RIVER
No.
Site Location 0.5 Km DOWNSTREAM OF BEARSKIN CREEK Reach No
Date 85 10 08 (yr mo day) Time 1500 Access H
NTS Map 104 K Agency C35 Crew JM
Field Photo Init. JM Photo Nos. ROLL 1 # 15-17
Weather 100% CLOUD, RAIN Fish Sample No. S3
Air Temp. °C 3 Water Sample No.

C	BANK L	BANK R
	Form	F R
	Genetic Mat.	L
	Texture %	
F	Org.	
80	Clay .004 / Silt .062 / Sand 2	80 F
G	S. Gr. 16	G
10	L. Gr. 64	10
L	Cob. 256	L
10	Boul	10
	Bedr	

Distr	Sp	VEG.	Sp	Distr
7	1	Conif.	1	7
2	2	Decid.	2	2
3		Under		4
6		Ground		9

CHANNEL COVER				
Distr	% Area	Level	% Area	Distr
	0	Crown	0	
	0	Over.	0	

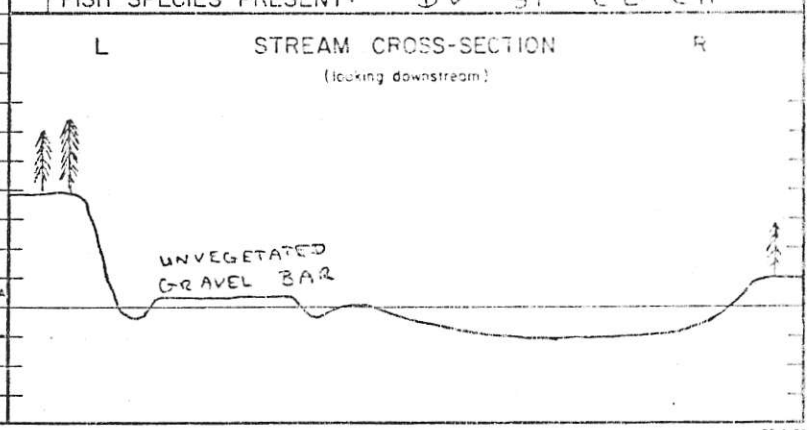
BIOTA	Sp	Abun
Aquatic Veg.		N
Invertebrates		L
Algae		L

C	BED MATERIAL				C	Texture (%)		
	Ice Scouring	Y (?) N				Org.		F
	Imbric	Nil (L) M H				Clay		
	Compac	Nil (L) M H				Silt		10
	Lag	Nil (L) M H				Sand	10	
	D_{90} (cm)	15						
	HYDRAULICS		Meth			S. Gr.	30	G
	Valley W(m)					L. Gr.	40	70
	Chan W(m)	72	M			Cob.	20	L
	Wet W(m)	38	M			Boul.		20
	Slope (%)	1	E			Bedr.		
	Max Depth (cm)	50	M					
	Avg. Depth (cm)	40	M					
	Wet X-sec area	15.2						
	Velocity (m/sec)	0.98	F					
	Flow (m^3/sec)	11.2	E1					
	Bank Height (m)	1.5	M					
	Fld. Signs (Ht./Type)	1 / D						
	Bank Ice Scour	Y (?) N						
	Stage	Dry (L) M H Fld						
	Flow Char.	P S (R) B T						
	Valley Chan	(0-2) 2-5 5-10 10+ N/A						
	Side Chan	Nil (L) M H						
DEBRIS	Channel	(Nil) L M H						
	Stable %							
	Floodplain	Nil (L) M H						

C	WATER QUAL.	Water temp.	Turbidity	TDS	D O	pH
		2 °C	10 Im (m)			

FISH SPECIES PRESENT: DV ST CO CH

STREAM CROSS-SECTION
(looking downstream)



PS 5 80

Comments:

S1 - Pinus contorta

S2 - Populus tremuloides

C1 - Some green algae

Province of
British Columbia
OFFICE OF THE
DEPUTY MINISTER

Ministry of
Energy, Mines and
Petroleum Resources

Parliament Buildings
Victoria
British Columbia
V8V IX4

Exhibit E

February 28, 1985

Mr. H. Wober,
Project Manager,
Chevron Canada Resources
Limited,
Minerals Staff,
1900-1055 West Hastings St.,
Vancouver, British Columbia.
V6E 2E9

Dear Mr. Wober:

Thank you for your letter of January 31, 1985 concerning the Bear Totem project and the road access issue for which you are potentially seeking assistance.

I am advised that you met with Mr. Lorne Sivertson and his staff on February 4, and that some of the criteria for our possible involvement were discussed. Please allow me to summarize our current approach.

First, we have been sharing costs on pre-engineering road access studies with several mining companies. Our share of costs has ranged up to 50 percent, depending on the circumstances of the project and when we perceive there to be significant public benefits by involving the government in route selection and engineering.

Second, for the more costly detailed road engineering and design studies, we must aproach our Cabinet seeking authority to assist in this financing. In principle we would be prepared to recommend assistance for the second phase of these studies on an equitable basis if there appear to be significant public benefits.

Third, we have sought authority from Cabinet to assist some projects with the capital costs of road access. Our approach, again pending Cabinet approval, would be to consider a road project for financial assistance where the following conditions are met:

.... /2

(a) Financial need, i.e. the project could not proceed without some government road assistance.

(b) There must be demonstrable net public benefits from the project as measured by tax payments to the government, jobs and regional benefits, etc. Such benefits should substantially exceed the level of assistance provided.

(c) A positive production decision by the project sponsor must be made prior to road expenditure commitments.

It has been our experience in negotiating road capital assistance that a financial information exchange between the sponsors and the government is necessary. Financial feasibility report information is required on a confidential basis. The forms of assistance that might be appropriate include loans (forgiveable, low interest, no-interest or normal interest), grants, or government assumed responsibility (for construction and maintenance), again depending on the circumstances of a project.

With respect to the Bear Totem project, we are prepared to entertain cost sharing with you on pre-engineering, and detailed engineering and design studies, subject to the necessary approvals by Cabinet.

It is likewise possible that we could entertain requests for road capital assistance at a later date. However, I understand that you may be at least two field seasons away from a production decision. Therefore, we would not likely be in a position to discuss the possibility of capital assistance in detail until the necessary mining reserves have been established.

I would encourage you to be in close contact with Lorne Sivertson regarding the project as we would require considerable advance information on your proposed scheduling in order to mobilize any government assistance.

Yours sincerely,

Roy Illing,
Deputy Minister.

KERR ADDISON, ML PROJECT, BASE CASE - EQUITY - $325 AU

CAPITAL EXPENDITURES
(THOUSANDS $)

	1986	1987	1988	1989	1990	1991	1992	1993	1994
PROCESSING FACILITIES	0.0	3000.0	3000.0	0.0	0.0	0.0	0.0	0.0	0.0
MINING & NON-PROCESSING CAPITAL	0.0	3500.0	4500.0	0.0	0.0	0.0	0.0	0.0	0.0
ROASTER	0.0	0.0	0.0	0.0	0.0	6000.0	0.0	0.0	0.0
TOTAL CAPITAL COSTS	0.0	6500.0	7500.0	0.0	0.0	6000.0	0.0	0.0	0.0
PRE-PRODUCTION STRIPPING	30.0	300.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
UNDERGROUND DEVELOPMENT	50.0	540.0	500.0	200.0	250.0	1250.0	0.0	0.0	0.0
OTHER DEVELOPMENT COSTS	0.0	4210.0	500.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL EXPLORATION/DEVELOPMENT	80.0	5050.0	1000.0	200.0	250.0	1250.0	0.0	0.0	0.0
TOTAL CAPITAL + E & D	80.0	11550.0	8500.0	200.0	250.0	7250.0	0.0	0.0	0.0

KEPR ADDISON, ML PROJECT, BASE CASE - EQUITY - $325 AU

CAPITAL EXPENDITURES
(THOUSANDS $)

	1995	1996	1997	1998	ACCUM
PROCESSING FACILITIES	0.0	0.0	0.0	0.0	6000.0
MINING & NON-PROCESSING CAPITAL	0.0	0.0	0.0	0.0	8000.0
ROASTER	0.0	0.0	0.0	0.0	6000.0
TOTAL CAPITAL COSTS	0.0	0.0	0.0	0.0	20000.0
PRE-PRODUCTION STRIPPING	0.0	0.0	0.0	0.0	330.0
UNDERGROUND DEVELOPMENT	0.0	0.0	0.0	0.0	2790.0
OTHER DEVELOPMENT COSTS	0.0	0.0	0.0	0.0	4710.0
TOTAL EXPLORATION/DEVELOPMENT	0.0	0.0	0.0	0.0	7830.0
TOTAL CAPITAL + E & D	0.0	0.0	0.0	0.0	27830.0

WELOFF FINANCIAL SYSTEM 86/ 4/21

KERR ADDISON, ML PROJECT, BASE CASE - EQUITY - $325 AU

OPERATING SUMMARY
(MILLIONS $)

	1995	1996	1997	1998	ACCUM
OXIDE ORE					
OXIDE ORE MILLED (000 TONS)	0.000	0.000	0.000	0.000	375.000
GOLD GRADE (OZS/TON)	0.000	0.000	0.000	0.000	0.297
GOLD RECOVERY (%)	0.0	0.0	0.0	0.0	85.0
PAYABLE GOLD (000 OZS)	0.000	0.000	0.000	0.000	94.669
GOLD PRICE ($US/OZ)	325.00	325.00	325.00	325.00	325.00
GROSS REVENUE - OXIDE ORE ($US)	0.000	0.000	0.000	0.000	30.767
- REFINING CHARGES @ $3.50/OZ	0.000	0.000	0.000	0.000	0.331
NET GOLD REVENUE ($US)	0.000	0.000	0.000	0.000	30.436
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	0.000	0.000	0.000	0.000	42.868
REFRACTORY ORE					
REFRACTORY ORE MILLED (000 TONS)	105.000	105.000	23.000	0.000	548.000
GOLD GRADE (OZS/TON)	0.387	0.387	0.387	0.000	0.387
GOLD RECOVERY (%)	90.0	90.0	90.0	0.0	90.0
PAYABLE GOLD (000 OZS)	36.571	36.571	8.011	0.000	190.868
GOLD PRICE ($US/OZ)	325.00	325.00	325.00	325.00	325.00
GROSS REVENUE - REFRACTORY ORE ($US)	11.886	11.886	2.604	0.000	62.032
- REFINING CHARGES @ $3.50/OZ	0.128	0.128	0.028	0.000	0.668
NET GOLD REVENUE ($US)	11.758	11.758	2.575	0.000	61.364
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	16.560	16.560	3.627	0.000	86.428
TOTAL NET REVENUE (CDN$)	16.560	16.560	3.627	0.000	129.296
- MINING COSTS	5.250	5.250	1.150	0.000	28.690
- MILLING COSTS	3.985	3.885	0.851	0.000	28.526
- GENERAL PLANT & ADMIN.	2.940	2.940	0.644	0.000	23.969
OPERATING PROFIT	4.485	4.485	0.982	0.000	48.111

WELOFF FINANCIAL SYSTEM 86/ 4/21

KERR ADDISON, ML PROJECT, BASE CASE - EQUITY - $325 AU

OPERATING SUMMARY
(MILLIONS $)

	1986	1987	1988	1989	1990	1991	1992	1993	1994
OXIDE ORE									
OXIDE ORE MILLED (000 TONS)	0.000	0.000	60.000	105.000	105.000	105.000	0.000	0.000	0.000
GOLD GRADE (OZS/TON)	0.000	0.000	0.297	0.297	0.297	0.297	0.000	0.000	0.000
GOLD RECOVERY (%)	0.0	0.0	85.0	85.0	85.0	85.0	0.0	0.0	0.0
PAYABLE GOLD (000 OZS)	0.000	0.000	15.147	26.507	26.507	26.507	0.000	0.000	0.000
GOLD PRICE ($US/OZ)	325.00	325.00	325.00	325.00	325.00	325.00	325.00	325.00	325.00
GROSS REVENUE - OXIDE ORE ($US)	0.000	0.000	4.923	8.615	8.615	8.615	0.000	0.000	0.000
- REFINING CHARGES @ $3.50/OZ	0.000	0.000	0.053	0.093	0.093	0.093	0.000	0.000	0.000
NET GOLD REVENUE ($US)	0.000	0.000	4.870	8.522	8.522	8.522	0.000	0.000	0.000
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	0.000	0.000	6.859	12.003	12.003	12.003	0.000	0.000	0.000
REFRACTORY ORE									
REFRACTORY ORE MILLED (000 TONS)	0.000	0.000	0.000	0.000	0.000	0.000	105.000	105.000	105.000
GOLD GRADE (OZS/TON)	0.000	0.000	0.000	0.000	0.000	0.000	0.387	0.387	0.387
GOLD RECOVERY (%)	0.0	0.0	0.0	0.0	0.0	0.0	90.0	90.0	90.0
PAYABLE GOLD (000 OZS)	0.000	0.000	0.000	0.000	0.000	0.000	36.571	36.571	36.571
GOLD PRICE ($US/OZ)	325.00	325.00	325.00	325.00	325.00	325.00	325.00	325.00	325.00
GROSS REVENUE - REFRACTORY ORE ($US)	0.000	0.000	0.000	0.000	0.000	0.000	11.886	11.886	11.886
- REFINING CHARGES @ $3.50/OZ	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.128	0.128
NET GOLD REVENUE ($US)	0.000	0.000	0.000	0.000	0.000	0.000	11.758	11.758	11.758
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	0.000	0.000	0.000	0.000	0.000	0.000	16.560	16.560	16.560
TOTAL NET REVENUE (CDN$)	0.000	0.000	6.859	12.003	12.003	12.003	16.560	16.560	16.560
- MINING COSTS	0.000	0.000	0.120	0.278	0.446	0.446	5.250	5.250	5.250
- MILLING COSTS	0.000	0.000	1.320	2.310	2.310	2.310	3.885	3.885	3.885
- GENERAL PLANT & ADMIN.	0.000	0.000	1.380	2.415	2.415	2.415	2.940	2.940	2.940
OPERATING PROFIT	0.000	0.000	4.039	7.000	6.832	6.832	4.485	4.485	4.485

KERR ADDISON, ML PROJECT, BASE CASE - EQUITY - $325 AU

CASHFLOW SUMMARY - PAGE 1
$ MILLIONS CAN.

39		1986	1987	1988	1989	1990	1991	1992	1993	1994
261	ORE MILLED (000 S TONS)	0.00	0.00	60.00	105.00	105.00	105.00	105.00	105.00	105.00
262	NET SMELTER RETURN	0.000	0.000	6.859	12.003	12.003	12.003	16.560	16.560	16.560
321	+SALES ADJUSTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
263	-OPERATING COSTS	0.000	0.000	2.820	5.003	5.171	5.171	12.075	12.075	12.075
310	-ROYALTY	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	MINE SITE INCOME	0.000	0.000	4.039	7.000	6.832	6.832	4.485	4.485	4.485
99	-FEDERAL INCOME TAX PAID	0.000	-0.130	-0.150	0.000	0.000	-0.120	0.000	0.000	0.000
118	-B.C. INCOME TAX PAID	0.000	0.000	0.000	0.000	0.000	0.000	0.549	0.602	0.497
132	-B.C. MIN RES TAX PAID	0.000	0.000	0.000	0.000	0.000	0.000	0.129	0.220	0.280
228	TOTAL TAXES PAID	0.000	-0.130	-0.150	0.000	0.000	-0.120	0.679	0.822	0.777
28	CASH FLOW BEFORE CAPITAL COSTS	0.000	0.130	4.189	7.000	6.832	6.952	3.806	3.663	3.708
380	- CAPITAL	0.000	6.500	7.500	0.000	0.000	6.000	0.000	0.000	0.000
381	- EXPLORATION & DEVELOPMENT	0.080	5.050	1.000	0.200	0.250	1.250	0.000	0.000	0.000
10	-WORKING CAPITAL REQUIRED	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
11	-CAPITALIZED INTEREST	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	INITIAL CAPITAL COSTS	0.080	11.550	9.500	0.200	0.250	7.250	0.000	0.000	0.000
252	+WORKING CAPITAL RECOVERY	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	+SALVAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
86	TOTAL CAPITAL COSTS	0.080	11.550	9.500	0.200	0.250	7.250	0.000	0.000	0.000
29	CASH FLOW BEFORE FINANCING	-0.080	-11.420	-5.311	6.800	6.582	-0.298	3.806	3.663	3.708
15	+PRIMARY BANK LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
322	+OPTIONAL LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
243	-SCHEDULED LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135	-OPTIONAL LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
149	NET EQUITY CASH AVAILABLE (REQUIRED	-0.080	-11.420	-5.311	6.800	6.582	-0.298	3.806	3.663	3.708
244	ACCUMULATIVE TOTAL	-0.080	-11.500	-16.811	-10.011	-3.429	-3.727	0.079	3.742	7.450
42	DISCOUNTED NCF (5.0 PCT)	-0.080	-10.876	-4.817	5.874	5.415	-0.234	2.840	2.603	2.510
34	DISCOUNTED NCF (10.0 PCT)	-0.080	-10.382	-4.389	5.109	4.496	-0.185	2.149	1.880	1.730
49	DISCOUNTED NCF (15.0 PCT)	-0.080	-9.930	-4.016	4.471	3.763	-0.148	1.646	1.377	1.212
248	DISCOUNTED NCF (20.0 PCT)	-0.080	-9.517	-3.688	3.935	3.174	-0.120	1.275	1.022	0.862
250	DISCOUNTED NCF (25.0 PCT)	-0.080	-9.136	-3.399	3.482	2.696	-0.098	0.998	0.768	0.622
239	BEFORE TAX PAYBACK PERIOD (YEARS	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	AFTER TAX PAYBACK PERIOD (YEARS)	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240	PRE-TAX RATE OF RETURN (PCT)	18.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
133	AFTER TAX RATE OF RETURN (PCT)	15.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CASHFLOW SUMMARY - PAGE 1
$ MILLIONS CAN.

39		1995	1996	1997	1998	ACCUM
261	ORE MILLED (000 S TONS)	105.00	105.00	23.00	0.00	923.00
262	NET SMELTER RETURN	16.560	16.560	3.627	0.000	129.296
321	+SALES ADJUSTMENT	0.000	0.000	0.000	0.000	0.000
263	-OPERATING COSTS	12.075	12.075	2.645	0.000	81.185
310	-ROYALTY	0.000	0.000	0.000	0.000	0.000
30	MINE SITE INCOME	4.485	4.485	0.982	0.000	48.111
99	-FEDERAL INCOME TAX PAID	1.351	0.957	0.481	0.000	2.388
118	-B.C. INCOME TAX PAID	0.463	0.512	0.290	0.000	2.914
132	-B.C. MIN RES TAX PAID	0.322	0.352	0.512	0.000	1.815
228	TOTAL TAXES PAID	2.136	1.821	1.283	0.000	7.117
28	CASH FLOW BEFORE CAPITAL COSTS	2.349	2.665	-0.301	0.000	40.993
380	- CAPITAL	0.000	0.000	0.000	0.000	20.000
381	- EXPLORATION & DEVELOPMENT	0.000	0.000	0.000	0.000	7.830
10	-WORKING CAPITAL REQUIRED	0.000	0.000	0.000	0.000	1.000
11	-CAPITALIZED INTEREST	0.000	0.000	0.000	0.000	0.000
80	INITIAL CAPITAL COSTS	0.000	0.000	0.000	0.000	28.830
252	+WORKING CAPITAL RECOVERY	0.000	0.000	1.000	0.000	1.000
18	+SALVAGE	0.000	0.000	2.000	0.000	2.000
86	TOTAL CAPITAL COSTS	0.000	0.000	-3.000	0.000	25.830
29	CASH FLOW BEFORE FINANCING	2.349	2.665	2.699	0.000	15.163
15	+PRIMARY BANK LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000
322	+OPTIONAL LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000
243	-SCHEDULED LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000
135	-OPTIONAL LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000
31	-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000
149	NET EQUITY CASH AVAILABLE (REQUIRED	2.349	2.665	2.699	0.000	15.163
244	ACCUMULATIVE TOTAL	9.800	12.464	15.163	15.163	0.000
42	DISCOUNTED NCF (5.0 PCT)	1.514	1.636	1.578	0.000	7.964
34	DISCOUNTED NCF (10.0 PCT)	0.996	1.027	0.946	0.000	3.296
49	DISCOUNTED NCF (15.0 PCT)	0.668	0.659	0.580	0.000	0.201
248	DISCOUNTED NCF (20.0 PCT)	0.455	0.430	0.363	0.000	-1.887
250	DISCOUNTED NCF (25.0 PCT)	0.315	0.286	0.232	0.000	-3.314
239	BEFORE TAX PAYBACK PERIOD (YEARS	0.0	0.0	0.0	0.0	0.0
101	AFTER TAX PAYBACK PERIOD (YEARS)	0.0	0.0	0.0	0.0	0.0
240	PRE-TAX RATE OF RETURN (PCT)	0.00	0.00	0.00	0.00	18.66
133	AFTER TAX RATE OF RETURN (PCT)	0.00	0.00	0.00	0.00	15.40

FEDERAL INCOME TAX - PAGE 2

	1986	1987	1988	1989	1990	1991	1992	1993	1994
OPERATING PROFIT	0.000	0.000	4.039	7.000	6.832	6.832	4.485	4.485	4.485
-INVENTORY CREDIT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS X CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS Y CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS 10 CCA	0.000	0.000	0.000	0.000	0.000	0.864	1.505	0.886	0.627
-CLASS Z CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS 28 CCA	0.000	0.000	0.000	3.945	6.499	3.276	-0.669	-0.451	0.000
-CLASS 12 CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-RESOURCE ALLOWANCE	0.000	0.000	1.010	0.764	0.083	0.673	0.912	1.012	0.964
-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CANADIAN DEVELOPMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-FOREIGN EXPLORATION	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CANADIAN EXPLORATION	0.000	0.000	3.029	2.291	0.250	2.019	0.241	0.000	0.000
-EARNED DEPLETION	0.000	0.000	0.000	0.000	0.000	0.000	0.624	0.759	0.723
FEDERAL TAXABLE INCOME	0.000	0.000	0.000	0.000	0.000	0.000	1.872	2.279	2.170
+LOSS CARRY FORWARD CREATED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-LOSS CARRY FORWARD CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NET FEDERAL TAXABLE INCOME	0.000	0.000	0.000	0.000	0.000	0.000	1.872	2.279	2.170
FEDERAL TAX CALCULATED (36 PCT)	0.000	0.000	0.000	0.000	0.000	0.000	0.674	0.820	0.781
+TAX LOSS CARRY BACK	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-INVESTMENT TAX CREDIT	0.000	0.000	0.000	0.000	0.000	0.000	0.674	0.820	0.106
- ITC TAX LOSS CARRY BACK	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
- ITC CASH CREDIT	0.000	0.130	0.150	0.000	0.000	0.120	0.000	0.000	0.000
FEDERAL TAX LIABLE	0.000	-0.130	-0.150	0.000	0.000	-0.120	0.000	0.000	0.675
FEDERAL TAX PAID	0.000	-0.130	-0.150	0.000	0.000	-0.120	0.000	0.000	0.000

FEDERAL INCOME TAX - PAGE 2

	1995	1996	1997	1998	ACCUM
OPERATING PROFIT	4.485	4.485	0.982	0.000	48.111
-INVENTORY CREDIT	0.000	0.000	0.000	0.000	0.000
-CLASS X CCA	0.000	0.000	0.000	0.000	0.000
-CLASS Y CCA	0.000	0.000	0.000	0.000	0.000
-CLASS 10 CCA	0.455	0.319	-1.256	0.000	3.400
-CLASS Z CCA	0.000	0.000	0.000	0.000	0.000
-CLASS 28 CCA	0.000	0.000	0.000	0.000	12.600
-CLASS 12 CCA	0.000	0.000	0.000	0.000	0.000
-RESOURCE ALLOWANCE	1.007	1.042	0.560	0.000	8.028
-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000
-CANADIAN DEVELOPMENT	0.000	0.000	0.000	0.000	0.000
-FOREIGN EXPLORATION	0.000	0.000	0.000	0.000	0.000
-CANADIAN EXPLORATION	0.000	0.000	0.000	0.000	7.830
-EARNED DEPLETION	0.756	0.781	0.420	0.000	4.063
FEDERAL TAXABLE INCOME	2.267	2.344	1.259	0.000	12.190
+LOSS CARRY FORWARD CREATED	0.000	0.000	0.000	0.000	0.000
-LOSS CARRY FORWARD CLAIMED	0.000	0.000	0.000	0.000	0.000
NET FEDERAL TAXABLE INCOME	2.267	2.344	1.259	0.000	12.190
FEDERAL TAX CALCULATED (36 PCT)	0.816	0.844	0.453	0.000	4.388
+TAX LOSS CARRY BACK	0.000	0.000	0.000	0.000	0.000
-INVESTMENT TAX CREDIT	0.000	0.000	0.000	0.000	1.600
- ITC TAX LOSS CARRY BACK	0.000	0.000	0.000	0.000	0.000
- ITC CASH CREDIT	0.000	0.000	0.000	0.000	0.400
FEDERAL TAX LIABLE	0.816	0.844	0.453	0.000	2.388
FEDERAL TAX PAID	1.351	0.957	0.481	0.000	2.388

B.C. INCOME TAX - PAGE 3

	1986	1987	1988	1989	1990	1991	1992	1993	1994
OPERATING PROFIT	0.000	0.000	4.039	7.000	6.832	6.832	4.485	4.485	4.485
-INVENTORY CREDIT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS X CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS Y CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS 10 CCA	0.000	0.000	0.000	0.000	0.000	0.864	1.505	0.997	0.626
-CLASS Z CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS 28 CCA	0.000	0.000	4.039	7.000	2.681	0.000	-0.674	-0.446	0.000
-CLASS 12 CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CANADIAN DEVELOPMENT EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-FOREIGN EXPLORATION	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CANADIAN EXPLORATION	0.000	0.000	0.000	0.000	4.151	3.679	0.000	0.000	0.000
-EARNED DEPLETION	0.000	0.000	0.000	0.000	0.000	0.572	0.914	0.983	0.965
B.C. TAXABLE INCOME	0.000	0.000	0.000	0.000	0.000	1.716	2.741	2.950	2.894
+LOSS CARRY FORWARD CREATED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-LOSS CARRY FORWARD CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NET B.C. TAXABLE INCOME	0.000	0.000	0.000	0.000	0.000	1.716	2.741	2.950	2.894
B.C. TAX CALCULATED (16 PCT)	0.000	0.000	0.000	0.000	0.000	0.275	0.439	0.472	0.463
+TAX LOSS CARRY BACK	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
B.C. TAX LIABLE	0.000	0.000	0.000	0.000	0.000	0.275	0.439	0.472	0.463
B.C. TAX PAID	0.000	0.000	0.000	0.000	0.000	0.000	0.549	0.602	0.497

B.C. INCOME TAX - PAGE 3

	1995	1996	1997	1998	ACCUM
OPERATING PROFIT	4.485	4.495	0.982	0.000	48.111
-INVENTORY CREDIT	0.000	0.000	0.000	0.000	0.000
-CLASS X CCA	0.000	0.000	0.000	0.000	0.000
-CLASS Y CCA	0.000	0.000	0.000	0.000	0.000
-CLASS 10 CCA	0.422	0.296	-1.310	0.000	3.400
-CLASS Z CCA	0.000	0.000	0.000	0.000	0.000
-CLASS 28 CCA	0.000	0.000	0.000	0.000	12.600
-CLASS 12 CCA	0.000	0.000	0.000	0.000	0.000
-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000
-CANADIAN DEVELOPMENT EXPENSE	0.000	0.000	0.000	0.000	0.000
-FOREIGN EXPLORATION	0.000	0.000	0.000	0.000	0.000
-CANADIAN EXPLORATION	0.000	0.000	0.000	0.000	7.830
-EARNED DEPLETION	1.016	1.047	0.573	0.000	6.070
B.C. TAXABLE INCOME	3.047	3.142	1.719	0.000	18.211
+LOSS CARRY FORWARD CREATED	0.000	0.000	0.000	0.000	0.000
-LOSS CARRY FORWARD CLAIMED	0.000	0.000	0.000	0.000	0.000
NET B.C. TAXABLE INCOME	3.047	3.142	1.719	0.000	18.211
B.C. TAX CALCULATED (16 PCT)	0.488	0.503	0.275	0.000	2.914
+TAX LOSS CARRY BACK	0.000	0.000	0.000	0.000	0.000
B.C. TAX LIABLE	0.488	0.503	0.275	0.000	2.914
B.C. TAX PAID	0.463	0.512	0.290	0.000	2.914

B.C. MINERAL RESOURCES TAX (MRT) - PAGE 4

	1986	1987	1988	1989	1990	1991	1992	1993	1994
OPERATING PROFIT	0.000	0.000	4.039	7.000	6.832	6.832	4.485	4.485	4.485
-INVENTORY CREDIT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS X CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS Y CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS 10 CCA	0.000	0.000	0.000	0.000	0.000	0.900	1.530	1.071	0.750
-CLASS Z CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-CLASS 28 CCA	0.000	0.000	4.039	7.000	2.961	0.000	0.000	0.000	0.000
-CLASS 12 CCA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-BC DEVELOPMENT EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-BC EXPLORATION EXPENSE	0.000	0.000	0.000	0.000	3.871	3.959	0.000	0.000	0.000
-DEPLETION CLAIMED	0.000	0.000	0.000	0.000	0.000	0.493	0.739	0.354	0.934
-PROCESSING ALLOWANCE	0.000	0.000	0.000	0.000	0.000	0.740	0.960	0.960	0.960
INCOME SUBJECT TO MRT	0.000	0.000	0.000	0.000	0.000	0.740	1.256	1.601	1.842
B.C. MRT LIABILITY (17.5 PCT)	0.000	0.000	0.000	0.000	0.000	0.129	0.220	0.280	0.322
B.C. MRT PAID	0.000	0.000	0.000	0.000	0.000	0.000	0.129	0.220	0.280

B.C. MINERAL RESOURCES TAX (MRT) - PAGE 4

	1995	1996	1997	1998	ACCUM
OPERATING PROFIT	4.485	4.485	0.982	0.000	48.111
-INVENTORY CREDIT	0.000	0.000	0.000	0.000	0.000
-CLASS X CCA	0.000	0.000	0.000	0.000	0.000
-CLASS Y CCA	0.000	0.000	0.000	0.000	0.000
-CLASS 10 CCA	0.525	0.367	-1.143	0.000	4.000
-CLASS Z CCA	0.000	0.000	0.000	0.000	0.000
-CLASS 28 CCA	0.000	0.000	0.000	0.000	14.000
-CLASS 12 CCA	0.000	0.000	0.000	0.000	0.000
-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000
-BC DEVELOPMENT EXPENSE	0.000	0.000	0.000	0.000	0.000
-BC EXPLORATION EXPENSE	0.000	0.000	0.000	0.000	7.830
-DEPLETION CLAIMED	0.990	1.029	0.531	0.000	5.570
-PROCESSING ALLOWANCE	0.960	0.960	0.797	0.000	6.337
INCOME SUBJECT TO MRT	2.010	2.128	0.797	0.000	10.374
B.C. MRT LIABILITY (17.5 PCT)	0.352	0.372	0.139	0.000	1.815
B.C. MRT PAID	0.322	0.352	0.512	0.000	1.815

CCA ACCOUNTS FOR FEDERAL INCOME TAX - PAGE 5

	1986	1987	1988	1989	1990	1991	1992	1993	1994
A. CLASS 28 CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	6.370	13.720	9.775	3.276	0.000	-0.005	0.000
+PROJECT COSTS	0.000	6.500	7.500	0.000	0.000	0.000	0.000	0.000	0.000
+PREPRODUCTION INTEREST	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-INVESTMENT TAX CREDIT	0.000	0.130	0.150	0.000	0.000	0.000	0.674	0.446	0.000
CLASS 28 CCA MAX AVAILABLE	0.000	3.120	9.970	13.720	9.775	3.276	-0.674	-0.451	0.000
CLASS 28 CCA CLAIMED	0.000	0.000	0.000	3.945	6.499	3.276	-0.669	-0.451	0.000
B. CLASS 10 CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	5.016	3.511	2.251
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	6.000	0.000	0.000	0.000
-SALVAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-INVESTMENT TAX CREDIT	0.000	0.000	0.000	0.000	0.000	0.120	0.000	0.374	0.106
CLASS 10 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.864	1.505	0.941	0.644
CLASS 10 CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.864	1.505	0.886	0.627
C. CLASS 12 CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CCA ACCOUNTS FOR FEDERAL INCOME TAX - PAGE 5

	1995	1996	1997	1998	ACCUM
A. CLASS 28 CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+PROJECT COSTS	0.000	0.000	0.000	0.000	14.000
+PREPRODUCTION INTEREST	0.000	0.000	0.000	0.000	0.000
-INVESTMENT TAX CREDIT	0.000	0.000	0.000	0.000	1.400
CLASS 28 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	12.600
CLASS 28 CCA CLAIMED	0.000	0.000	0.000	0.000	12.600
B. CLASS 10 CAPITAL COST ALLOWANCE					
OPENING BALANCE	1.518	1.063	0.744	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	6.000
-SALVAGE	0.000	0.000	2.000	0.000	2.000
-INVESTMENT TAX CREDIT	0.000	0.000	0.000	0.000	0.600
CLASS 10 CCA MAX AVAILABLE	0.455	0.319	-1.256	0.000	3.400
CLASS 10 CCA CLAIMED	0.455	0.319	-1.256	0.000	3.400
C. CLASS 12 CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA CLAIMED	0.000	0.000	0.000	0.000	0.000

CCA ACCOUNTS FOR FEDERAL INCOME TAX CON'T - PAGE 5

	1986	1987	1988	1989	1990	1991	1992	1993	1994
D. CLASS X CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS X CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS X CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E. CLASS Y CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F. CLASS Z CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G. TOTAL FEDERAL CAPITAL COST ALLOWANCE									
CCA MAX AVAILABLE	0.000	3.120	9.970	13.720	9.775	4.140	0.831	0.490	0.644
CCA CLAIMED	0.000	0.000	0.000	3.945	6.499	4.140	0.835	0.435	0.627

CCA ACCOUNTS FOR FEDERAL INCOME TAX CON'T - PAGE 5

	1995	1996	1997	1998	ACCUM
D. CLASS X CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS X CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS X CCA CLAIMED	0.000	0.000	0.000	0.000	0.000
E. CLASS Y CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA CLAIMED	0.000	0.000	0.000	0.000	0.000
F. CLASS Z CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA CLAIMED	0.000	0.000	0.000	0.000	0.000
G. TOTAL FEDERAL CAPITAL COST ALLOWANCE					
CCA MAX AVAILABLE	0.455	0.319	-1.256	0.000	16.000
CCA CLAIMED	0.455	0.319	-1.256	0.000	16.000

CCA ACCOUNTS FOR B.C. INCOME TAX - PAGE 6

	1986	1987	1988	1989	1990	1991	1992	1993	1994
A. CLASS 28 CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	6.370	9.681	2.681	0.000	0.000	0.000	0.000
+PROJECT COSTS	0.000	6.500	7.500	0.000	0.000	0.000	0.000	0.000	0.000
+PREPRODUCTION INTEREST	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-INVESTMENT TAX CREDIT	0.000	0.130	0.150	0.000	0.000	0.000	0.674	0.446	0.000
CLASS 28 CCA MAX AVAILABLE	0.000	3.120	9.970	9.681	2.681	0.000	-0.674	-0.446	0.000
CLASS 28 CCA CLAIMED	0.000	0.000	4.039	7.000	2.681	0.000	-0.674	-0.446	0.000
B. CLASS 10 CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	5.016	3.511	2.140
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	6.000	0.000	0.000	0.000
-SALVAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-INVESTMENT TAX CREDIT	0.000	0.000	0.000	0.000	0.000	0.120	0.000	0.374	0.106
CLASS 10 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.864	1.505	0.941	0.610
CLASS 10 CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.864	1.505	0.997	0.626
C. CLASS 12 CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CCA ACCOUNTS FOR B.C. INCOME TAX - PAGE 6

	1995	1996	1997	1998	ACCUM
A. CLASS 28 CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+PROJECT COSTS	0.000	0.000	0.000	0.000	14.000
+PREPRODUCTION INTEREST	0.000	0.000	0.000	0.000	0.000
-INVESTMENT TAX CREDIT	0.000	0.000	0.000	0.000	1.400
CLASS 28 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	12.600
CLASS 28 CCA CLAIMED	0.000	0.000	0.000	0.000	12.600
B. CLASS 10 CAPITAL COST ALLOWANCE					
OPENING BALANCE	1.408	0.986	0.690	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	6.000
-SALVAGE	0.000	0.000	2.000	0.000	2.000
-INVESTMENT TAX CREDIT	0.000	0.000	0.000	0.000	0.600
CLASS 10 CCA MAX AVAILABLE	0.422	0.296	-1.310	0.000	3.400
CLASS 10 CCA CLAIMED	0.422	0.296	-1.310	0.000	3.400
C. CLASS 12 CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA CLAIMED	0.000	0.000	0.000	0.000	0.000

CCA ACCOUNTS FOR B.C. INCOME TAX CON'T - PAGE 6

	1986	1987	1988	1989	1990	1991	1992	1993	1994
D. CLASS X CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS X CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS X CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E. CLASS Y CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F. CLASS Z CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G. TOTAL PROVINCIAL CAPITAL COST ALLOWANCE									
CCA MAX AVAILABLE	0.000	3.120	9.970	9.681	2.681	0.864	0.831	0.495	0.610
CCA CLAIMED	0.000	0.000	4.039	7.000	2.681	0.864	0.831	0.551	0.626

CCA ACCOUNTS FOR B.C. INCOME TAX CON'T - PAGE 6

	1995	1996	1997	1998	ACCUM
D. CLASS X CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS X CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS X CCA CLAIMED	0.000	0.000	0.000	0.000	0.000
E. CLASS Y CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA CLAIMED	0.000	0.000	0.000	0.000	0.000
F. CLASS Z CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA CLAIMED	0.000	0.000	0.000	0.000	0.000
G. TOTAL PROVINCIAL CAPITAL COST ALLOWANCE					
CCA MAX AVAILABLE	0.422	0.296	-1.310	0.000	16.000
CCA CLAIMED	0.422	0.296	-1.310	0.000	16.000

CCA ACCOUNTS FOR B.C. MINERAL RESOURCES TAX - PAGE 7

	1986	1987	1988	1989	1990	1991	1992	1993	1994
A. CLASS 28 CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	6.500	9.961	2.961	0.000	0.000	0.000	0.000
+PROJECT COSTS	0.000	6.500	7.500	0.000	0.000	0.000	0.000	0.000	0.000
+PREPRODUCTION INTEREST	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS 28 CCA MAX AVAILABLE	0.000	3.250	10.250	9.961	2.961	0.000	0.000	0.000	0.000
CLASS 28 CCA CLAIMED	0.000	0.000	4.039	7.000	2.961	0.000	0.000	0.000	0.000
B. CLASS 10 CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	5.100	3.570	2.499
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	6.000	0.000	0.000	0.000
-SALVAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS 10 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.900	1.530	1.071	0.750
CLASS 10 CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.900	1.530	1.071	0.750
C. CLASS 12 CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CCA ACCOUNTS FOR B.C. MINEPAL RESOURCES TAX - PAGE 7

	1995	1996	1997	1998	ACCUM
A. CLASS 28 CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+PROJECT COSTS	0.000	0.000	0.000	0.000	14.000
+PREPRODUCTION INTEREST	0.000	0.000	0.000	0.000	0.000
CLASS 28 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	14.000
CLASS 28 CCA CLAIMED	0.000	0.000	0.000	0.000	14.000
B. CLASS 10 CAPITAL COST ALLOWANCE					
OPENING BALANCE	1.749	1.225	0.857	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	6.000
-SALVAGE	0.000	0.000	2.000	0.000	2.000
CLASS 10 CCA MAX AVAILABLE	0.525	0.367	-1.143	0.000	4.000
CLASS 10 CCA CLAIMED	0.525	0.367	-1.143	0.000	4.000
C. CLASS 12 CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS 12 CCA CLAIMED	0.000	0.000	0.000	0.000	0.000

CCA ACCOUNTS FOR B.C. MINERAL RESOURCES TAX CON'T - PAGE 7

	1986	1987	1988	1989	1990	1991	1992	1993	1994
D. CLASS X CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS X CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS X CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
E. CLASS Y CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F. CLASS Z CAPITAL COST ALLOWANCE									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
G. TOTAL MRT CAPITAL COST ALLOWANCE									
CCA MAX AVAILABLE	0.027	7.100	13.083	10.028	3.045	3.317	1.530	1.071	0.750
CCA CLAIMED	0.000	0.000	4.039	7.000	2.961	0.900	1.530	1.071	0.750

CCA ACCOUNTS FOR B.C. MINERAL RESOURCES TAX CON'T - PAGE 7

	1995	1996	1997	1998	ACCUM
D. CLASS X CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS X CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS X CCA CLAIMED	0.000	0.000	0.000	0.000	0.000
E. CLASS Y CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS Y CCA CLAIMED	0.000	0.000	0.000	0.000	0.000
F. CLASS Z CAPITAL COST ALLOWANCE					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
+ADDITIONS	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
CLASS Z CCA CLAIMED	0.000	0.000	0.000	0.000	0.000
G. TOTAL MRT CAPITAL COST ALLOWANCE					
CCA MAX AVAILABLE	0.525	0.367	-0.143	0.000	18.000
CCA CLAIMED	0.525	0.367	-1.143	0.000	18.000

FEDERAL EXPLORATION, DEVELOPMENT, DEPLETION SCHEDULE - PAGE 8

	1986	1987	1988	1989	1990	1991	1992	1993	1994
A. EXPLORATION EXPENSES									
OPENING BALANCE	0.000	0.080	5.130	3.101	1.010	1.010	0.241	0.000	0.000
ADDITIONS	0.080	5.050	1.000	0.200	0.250	1.250	0.000	0.000	0.000
+PRE-PRODUCTION INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.080	5.130	6.130	3.301	1.260	2.260	0.241	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	3.029	2.291	0.250	2.019	0.241	0.000	0.000
B. DEVELOPMENT EXPENSES (30 PCT)									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C. FOREIGN EXPL & DEV EXPENSES (10 PCT)									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D. DEPLETION ALLOWANCE									
OPENING BALANCE	0.000	0.027	3.877	6.710	6.777	6.860	9.277	8.653	7.893
ADDITIONS	0.027	3.850	2.833	0.067	0.083	2.417	0.000	0.000	0.000
EARNED DEPLETION BASE LIMIT	0.027	3.877	6.710	6.777	6.860	9.277	9.277	8.653	7.893
TAXABLE INCOME LIMIT	0.000	0.000	0.000	0.000	0.000	0.000	0.624	0.759	0.723
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.624	0.759	0.723

FEDERAL EXPLORATION, DEVELOPMENT, DEPLETION SCHEDULE - PAGE 8

	1995	1996	1997	1998	ACCUM
A. EXPLORATION EXPENSES					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	7.830
+PRE-PRODUCTION INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	7.830
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	7.830
B. DEVELOPMENT EXPENSES (30 PCT)					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000
C. FOREIGN EXPL & DEV EXPENSES (10 PCT)					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000
D. DEPLETION ALLOWANCE					
OPENING BALANCE	7.170	6.414	5.633	5.213	0.000
ADDITIONS	0.000	0.000	0.000	0.000	9.277
EARNED DEPLETION BASE LIMIT	7.170	6.414	5.633	5.213	9.277
TAXABLE INCOME LIMIT	0.756	0.781	0.420	0.000	4.063
ALLOWANCE CLAIMED	0.756	0.781	0.420	0.000	4.063

B.C. PROV EXPLORATION, DEVELOPMENT, DEPLETION SCHEDULE - PAGE 9

	1986	1987	1988	1989	1990	1991	1992	1993	1994
A. EXPLORATION EXPENSES									
OPENING BALANCE	0.000	0.080	5.130	6.130	6.330	2.429	0.000	0.000	0.000
ADDITIONS	0.080	5.050	1.000	0.200	0.250	1.250	0.000	0.000	0.000
+PRE-PRODUCTION INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.080	5.130	6.130	6.330	6.580	3.679	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	4.151	3.679	0.000	0.000	0.000
B. DEVELOPMENT EXPENSES (30 PCT)									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C. FOREIGN EXPL & DEV EXPENSES (10 PCT)									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D. DEPLETION ALLOWANCE									
OPENING BALANCE	0.000	0.027	3.877	6.710	6.777	6.860	8.704	7.791	6.807
ADDITIONS	0.027	3.850	2.833	0.067	0.083	2.417	0.000	0.000	0.000
EARNED DEPLETION BASE LIMIT	0.027	3.877	6.710	6.777	6.860	9.277	8.704	7.791	6.807
TAXABLE INCOME LIMIT	0.000	0.000	0.000	0.000	0.000	0.572	0.914	0.983	0.965
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000	0.572	0.914	0.983	0.965

B.C. PROV EXPLORATION, DEVELOPMENT, DEPLETION SCHEDULE - PAGE 9

	1995	1996	1997	1998	ACCUM
A. EXPLORATION EXPENSES					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	7.830
+PRE-PRODUCTION INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	7.830
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	7.830
B. DEVELOPMENT EXPENSES (30 PCT)					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000
C. FOREIGN EXPL & DEV EXPENSES (10 PCT)					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000
D. DEPLETION ALLOWANCE					
OPENING BALANCE	5.843	4.827	3.780	3.206	0.000
ADDITIONS	0.000	0.000	0.000	0.000	9.277
EARNED DEPLETION BASE LIMIT	5.843	4.827	3.780	3.206	9.277
TAXABLE INCOME LIMIT	1.016	1.047	0.573	0.000	6.070
ALLOWANCE CLAIMED	1.016	1.047	0.573	0.000	6.070

B.C. MINERAL RESOURCES TAX SCHEDULE - PAGE 10

	1986	1987	1988	1989	1990	1991	1992	1993	1994
A. EXPLORATION + DEVELOPMENT EXPENSES									
OPENING BALANCE	0.000	0.080	5.130	6.130	6.330	2.709	0.000	0.000	0.000
ADDITIONS	0.080	5.050	1.000	0.200	0.250	1.250	0.000	0.000	0.000
+PRE-PRODUCTION INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.080	5.130	6.130	6.330	6.580	3.959	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	3.871	3.959	0.000	0.000	0.000
B. DEVELOPMENT EXPENSES (30 PCT)									
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
C. DEPLETION ALLOWANCE									
OPENING BALANCE	0.000	0.027	3.877	6.710	6.777	6.860	8.783	8.045	7.191
ADDITIONS	0.027	3.850	2.833	0.067	0.083	2.417	0.000	0.000	0.000
EARNED DEPLETION BASE LIMIT	0.027	3.877	6.710	6.777	6.860	9.277	8.783	8.045	7.191
TAXABLE INCOME LIMIT	0.000	0.000	0.000	0.000	0.000	0.493	0.739	0.854	0.934
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000	0.493	0.739	0.854	0.934
D. PROCESSING ALLOWANCE									
NET TAXABLE INCOME	0.000	0.000	0.000	0.000	0.000	0.740	1.256	1.601	1.842
MINIMUM ALLOWANCE (15 PCT)	0.000	0.000	0.000	0.000	0.000	0.222	0.332	0.384	0.420
MAXIMUM ALLOWANCE (65 PCT)	0.000	0.000	0.000	0.000	0.000	0.740	1.108	1.280	1.401
ALLOWANCE BASED ON ASSETS (8 PCT)	0.000	0.240	0.480	0.480	0.480	0.960	0.960	0.960	0.960
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000	0.740	0.960	0.960	0.960

B.C. MINERAL RESOURCES TAX SCHEDULE - PAGE 10

	1995	1996	1997	1998	ACCUM
A. EXPLORATION + DEVELOPMENT EXPENSES					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	7.830
+PRE-PRODUCTION INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	7.830
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	7.830
B. DEVELOPMENT EXPENSES (30 PCT)					
OPENING BALANCE	0.000	0.000	0.000	0.000	0.000
ADDITIONS	0.000	0.000	0.000	0.000	0.000
ALLOWANCE MAX AVAILABLE	0.000	0.000	0.000	0.000	0.000
ALLOWANCE CLAIMED	0.000	0.000	0.000	0.000	0.000
C. DEPLETION ALLOWANCE					
OPENING BALANCE	6.257	5.267	4.238	3.706	0.000
ADDITIONS	0.000	0.000	0.000	0.000	9.277
EARNED DEPLETION BASE LIMIT	6.257	5.267	4.238	3.706	9.277
TAXABLE INCOME LIMIT	0.990	1.029	0.531	0.000	5.570
ALLOWANCE CLAIMED	0.990	1.029	0.531	0.000	5.570
D. PROCESSING ALLOWANCE					
NET TAXABLE INCOME	2.010	2.128	0.797	0.000	10.374
MINIMUM ALLOWANCE (15 PCT)	0.446	0.463	0.239	0.000	2.507
MAXIMUM ALLOWANCE (65 PCT)	1.485	1.544	0.797	0.000	8.355
ALLOWANCE BASED ON ASSETS (8 PCT)	0.960	0.960	0.960	0.960	9.360
ALLOWANCE CLAIMED	0.960	0.960	0.797	0.000	6.337

WELOFF FINANCIAL SYSTEM 86/ 4/21

KERR ADDISON, ML PROJECT, EQUITY - $300 AU

OPERATING SUMMARY
(MILLIONS $)

	1986	1987	1988	1989	1990	1991	1992	1993	1994
OXIDE ORE									
OXIDE ORE MILLED (000 TONS)	0.000	0.000	60.000	105.000	105.000	105.000	0.000	0.000	0.000
GOLD GRADE (OZS/TON)	0.000	0.000	0.297	0.297	0.297	0.297	0.000	0.000	0.000
GOLD RECOVERY (%)	0.0	0.0	85.0	85.0	85.0	85.0	0.0	0.0	0.0
PAYABLE GOLD (000 OZS)	0.000	0.000	15.147	26.507	26.507	26.507	0.000	0.000	0.000
GOLD PRICE ($US/OZ)	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00
GROSS REVENUE - OXIDE ORE ($US)	0.000	0.000	4.544	7.952	7.952	7.952	0.000	0.000	0.000
- REFINING CHARGES @ $3.50/OZ	0.000	0.000	0.053	0.093	0.093	0.093	0.000	0.000	0.000
NET GOLD REVENUE ($US)	0.000	0.000	4.491	7.859	7.859	7.859	0.000	0.000	0.000
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	0.000	0.000	6.325	11.070	11.070	11.070	0.000	0.000	0.000
REFRACTORY ORE									
REFRACTORY ORE MILLED (000 TONS)	0.000	0.000	0.000	0.000	0.000	0.000	105.000	105.000	105.000
GOLD GRADE (OZS/TON)	0.000	0.000	0.000	0.000	0.000	0.000	0.387	0.387	0.387
GOLD RECOVERY (%)	0.0	0.0	0.0	0.0	0.0	0.0	90.0	90.0	90.0
PAYABLE GOLD (000 OZS)	0.000	0.000	0.000	0.000	0.000	0.000	36.571	36.571	36.571
GOLD PRICE ($US/OZ)	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00	300.00
GROSS REVENUE - REFRACTORY ORE ($US)	0.000	0.000	0.000	0.000	0.000	0.000	10.971	10.971	10.971
- REFINING CHARGES @ $3.50/OZ	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.128	0.128
NET GOLD REVENUE ($US)	0.000	0.000	0.000	0.000	0.000	0.000	10.843	10.843	10.843
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	0.000	0.000	0.000	0.000	0.000	0.000	15.272	15.272	15.272
TOTAL NET REVENUE (CDN$)	0.000	0.000	6.325	11.070	11.070	11.070	15.272	15.272	15.272
- MINING COSTS	0.000	0.000	0.120	0.278	0.446	0.446	5.250	5.250	5.250
- MILLING COSTS	0.000	0.000	1.320	2.310	2.310	2.310	3.885	3.885	3.885
- GENERAL PLANT & ADMIN.	0.000	0.000	1.380	2.415	2.415	2.415	2.940	2.940	2.940
OPERATING PROFIT	0.000	0.000	3.505	6.067	5.899	5.899	3.197	3.197	3.197

WELOFF FINANCIAL SYSTEM 86/ 4/21

KERR ADDISON, ML PROJECT, EQUITY - $300 AU

OPERATING SUMMARY
(MILLIONS $)

	1995	1996	1997	1998	ACCUM
OXIDE ORE					
OXIDE ORE MILLED (000 TONS)	0.000	0.000	0.000	0.000	375.000
GOLD GRADE (OZS/TON)	0.000	0.000	0.000	0.000	0.297
GOLD RECOVERY (%)	0.0	0.0	0.0	0.0	85.0
PAYABLE GOLD (000 OZS)	0.000	0.000	0.000	0.000	94.669
GOLD PRICE ($US/OZ)	300.00	300.00	300.00	300.00	300.00
GROSS REVENUE - OXIDE ORE ($US)	0.000	0.000	0.000	0.000	28.401
- REFINING CHARGES @ $3.50/OZ	0.000	0.000	0.000	0.000	0.331
NET GOLD REVENUE ($US)	0.000	0.000	0.000	0.000	28.069
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	0.000	0.000	0.000	0.000	39.534
REFRACTORY ORE					
REFRACTORY ORE MILLED (000 TONS)	105.000	105.000	23.000	0.000	548.000
GOLD GRADE (OZS/TON)	0.387	0.387	0.387	0.000	0.387
GOLD RECOVERY (%)	90.0	90.0	90.0	0.0	90.0
PAYABLE GOLD (000 OZS)	36.571	36.571	8.011	0.000	190.868
GOLD PRICE ($US/OZ)	300.00	300.00	300.00	300.00	300.00
GROSS REVENUE - REFRACTORY ORE ($US)	10.971	10.971	2.403	0.000	57.260
- REFINING CHARGES @ $3.50/OZ	0.128	0.128	0.028	0.000	0.668
NET GOLD REVENUE ($US)	10.843	10.843	2.375	0.000	56.592
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	15.272	15.272	3.345	0.000	79.708
TOTAL NET REVENUE (CDN$)	15.272	15.272	3.345	0.000	119.242
- MINING COSTS	5.250	5.250	1.150	0.000	28.690
- MILLING COSTS	3.885	3.885	0.851	0.000	28.526
- GENERAL PLANT & ADMIN.	2.940	2.940	0.644	0.000	23.969
OPERATING PROFIT	3.197	3.197	0.700	0.000	38.057

KERR ADDISON, ML PROJECT, EQUITY - $300 AU

CASHFLOW SUMMARY - PAGE 1
$ MILLIONS CAN.

39		1986	1987	1988	1989	1990	1991	1992	1993	1994
261	ORE MILLED (000 S TONS)	0.00	0.00	60.00	105.00	105.00	105.00	105.00	105.00	105.00
262	NET SMELTER RETURN	0.000	0.000	6.325	11.070	11.070	11.070	15.272	15.272	15.272
321	+SALES ADJUSTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
263	-OPERATING COSTS	0.000	0.000	2.820	5.003	5.171	5.171	12.075	12.075	12.075
310	-ROYALTY	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	MINE SITE INCOME	0.000	0.000	3.505	6.067	5.899	5.899	3.197	3.197	3.197
99	-FEDERAL INCOME TAX PAID	0.000	-0.130	-0.150	0.000	0.000	-0.120	0.000	0.000	0.000
118	-B.C. INCOME TAX PAID	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.155	0.447
132	-B.C. MIN RES TAX PAID	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.140
228	TOTAL TAXES PAID	0.000	-0.130	-0.150	0.000	0.000	-0.120	0.000	0.176	0.586
28	CASH FLOW BEFORE CAPITAL COSTS	0.000	0.130	3.655	6.067	5.899	6.019	3.197	3.022	2.611
380	- CAPITAL	0.000	6.500	7.500	0.000	0.000	6.000	0.000	0.000	0.000
381	- EXPLORATION & DEVELOPMENT	0.080	5.050	1.000	0.200	0.250	1.250	0.000	0.000	0.000
10	-WORKING CAPITAL REQUIRED	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
11	-CAPITALIZED INTEREST	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	INITIAL CAPITAL COSTS	0.080	11.550	9.500	0.200	0.250	7.250	0.000	0.000	0.000
252	+WORKING CAPITAL RECOVERY	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	+SALVAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
86	TOTAL CAPITAL COSTS	0.080	11.550	9.500	0.200	0.250	7.250	0.000	0.000	0.000
29	CASH FLOW BEFORE FINANCING	-0.080	-11.420	-5.845	5.867	5.649	-1.231	3.197	3.022	2.611
15	+PRIMARY BANK LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
322	+OPTIONAL LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
243	-SCHEDULED LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135	-OPTIONAL LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
149	NET EQUITY CASH AVAILABLE (REQUIRED	-0.080	-11.420	-5.845	5.867	5.649	-1.231	3.197	3.022	2.611
244	ACCUMULATIVE TOTAL	-0.080	-11.500	-17.345	-11.478	-5.829	-7.061	-3.863	-0.842	1.770
42	DISCOUNTED NCF (5.0 PCT)	-0.080	-10.876	-5.301	5.068	4.647	-0.965	2.386	2.148	1.767
34	DISCOUNTED NCF (10.0 PCT)	-0.080	-10.382	-4.830	4.408	3.858	-0.765	1.805	1.551	1.218
49	DISCOUNTED NCF (15.0 PCT)	-0.080	-9.930	-4.419	3.857	3.230	-0.612	1.382	1.136	0.854
248	DISCOUNTED NCF (20.0 PCT)	-0.080	-9.517	-4.059	3.395	2.724	-0.495	1.071	0.843	0.607
250	DISCOUNTED NCF (25.0 PCT)	-0.080	-9.136	-3.741	3.004	2.314	-0.404	0.838	0.634	0.438
239	BEFORE TAX PAYBACK PERIOD (YEARS	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	AFTER TAX PAYBACK PERIOD (YEARS)	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240	PRE-TAX RATE OF RETURN (PCT)	11.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
133	AFTER TAX RATE OF RETURN (PCT)	9.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

KERR ADDISON, ML PROJECT, EQUITY - $300 AU

CASHFLOW SUMMARY - PAGE 1
$ MILLIONS CAN.

39		1995	1996	1997	1998	ACCUM
261	ORE MILLED (000 S TONS)	105.00	105.00	23.00	0.00	923.00
262	NET SMELTER RETURN	15.272	15.272	3.345	0.000	119.242
321	+SALES ADJUSTMENT	0.000	0.000	0.000	0.000	0.000
263	-OPERATING COSTS	12.075	12.075	2.645	0.000	81.185
310	-ROYALTY	0.000	0.000	0.000	0.000	0.000
30	MINE SITE INCOME	3.197	3.197	0.700	0.000	38.057
99	-FEDERAL INCOME TAX PAID	0.000	0.000	0.994	0.000	0.594
118	-B.C. INCOME TAX PAID	0.408	0.409	0.251	0.000	1.670
132	-B.C. MIN RES TAX PAID	0.161	0.183	0.324	0.000	0.828
228	TOTAL TAXES PAID	0.568	0.592	1.569	0.000	3.091
28	CASH FLOW BEFORE CAPITAL COSTS	2.629	2.605	-0.869	0.000	34.965
380	- CAPITAL	0.000	0.000	0.000	0.000	20.000
381	- EXPLORATION & DEVELOPMENT	0.000	0.000	0.000	0.000	7.330
10	-WORKING CAPITAL REQUIRED	0.000	0.000	0.000	0.000	1.000
11	-CAPITALIZED INTEREST	0.000	0.000	0.000	0.000	0.000
80	INITIAL CAPITAL COSTS	0.000	0.000	0.000	0.000	28.830
252	+WORKING CAPITAL RECOVERY	0.000	0.000	1.000	0.000	1.000
18	+SALVAGE	0.000	0.000	2.000	0.000	2.000
86	TOTAL CAPITAL COSTS	0.000	0.000	-3.000	0.000	25.830
29	CASH FLOW BEFORE FINANCING	2.629	2.605	2.131	0.000	9.135
15	+PRIMARY BANK LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000
322	+OPTIONAL LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000
243	-SCHEDULED LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000
135	-OPTIONAL LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000
31	-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000
149	NET EQUITY CASH AVAILABLE (REQUIRED	2.629	2.605	2.131	0.000	9.135
244	ACCUMULATIVE TOTAL	4.399	7.004	9.135	9.135	0.000
42	DISCOUNTED NCF (5.0 PCT)	1.695	1.599	1.246	0.000	3.334
34	DISCOUNTED NCF (10.0 PCT)	1.115	1.004	0.747	0.000	-0.351
49	DISCOUNTED NCF (15.0 PCT)	0.747	0.644	0.458	0.000	-2.734
248	DISCOUNTED NCF (20.0 PCT)	0.510	0.421	0.287	0.000	-4.293
250	DISCOUNTED NCF (25.0 PCT)	0.353	0.280	0.183	0.000	-5.317
239	BEFORE TAX PAYBACK PERIOD (YEARS	0.0	0.0	0.0	0.0	0.0
101	AFTER TAX PAYBACK PERIOD (YEARS)	0.0	0.0	0.0	0.0	0.0
240	PRE-TAX RATE OF RETURN (PCT)	0.00	0.00	0.00	0.00	11.07
133	AFTER TAX RATE OF RETURN (PCT)	0.00	0.00	0.00	0.00	9.42

WELOFF FINANCIAL SYSTEM 86/ 4/21

KEPR ADDISON, ML PROJECT, EQUITY - $350 AU

OPERATING SUMMARY
(MILLIONS $)

	1986	1987	1988	1989	1990	1991	1992	1993	1994
OXIDE ORE									
OXIDE ORE MILLED (000 TONS)	0.000	0.000	60.000	105.000	105.000	105.000	0.000	0.000	0.000
GOLD GRADE (OZS/TON)	0.000	0.000	0.297	0.297	0.297	0.297	0.000	0.000	0.000
GOLD RECOVERY (%)	0.0	0.0	85.0	85.0	85.0	85.0	0.0	0.0	0.0
PAYABLE GOLD (000 OZS)	0.000	0.000	15.147	26.507	26.507	26.507	0.000	0.000	0.000
GOLD PRICE ($US/OZ)	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00
GROSS REVENUE - OXIDE ORE ($US)	0.000	0.000	5.301	9.278	9.278	9.278	0.000	0.000	0.000
- REFINING CHARGES @ $3.50/OZ	0.000	0.000	0.053	0.093	0.093	0.093	0.000	0.000	0.000
NET GOLD REVENUE ($US)	0.000	0.000	5.248	9.185	9.185	9.185	0.000	0.000	0.000
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	0.000	0.000	7.392	12.936	12.936	12.936	0.000	0.000	0.000
REFRACTORY ORE									
REFRACTORY ORE MILLED (000 TONS)	0.000	0.000	0.000	0.000	0.000	0.000	105.000	105.000	105.000
GOLD GRADE (OZS/TON)	0.000	0.000	0.000	0.000	0.000	0.000	0.387	0.387	0.387
GOLD RECOVERY (%)	0.0	0.0	0.0	0.0	0.0	0.0	90.0	90.0	90.0
PAYABLE GOLD (000 OZS)	0.000	0.000	0.000	0.000	0.000	0.000	36.571	36.571	36.571
GOLD PRICE ($US/OZ)	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00
GROSS REVENUE - REFRACTORY ORE ($US)	0.000	0.000	0.000	0.000	0.000	0.000	12.800	12.800	12.800
- REFINING CHARGES @ $3.50/OZ	0.000	0.000	0.000	0.000	0.000	0.000	0.128	0.128	0.128
NET GOLD REVENUE ($US)	0.000	0.000	0.000	0.000	0.000	0.000	12.672	12.672	12.672
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	0.000	0.000	0.000	0.000	0.000	0.000	17.848	17.848	17.848
TOTAL NET REVENUE (CDN$)	0.000	0.000	7.392	12.936	12.936	12.936	17.848	17.848	17.848
- MINING COSTS	0.000	0.000	0.120	0.278	0.446	0.446	5.250	5.250	5.250
- MILLING COSTS	0.000	0.000	1.320	2.310	2.310	2.310	3.885	3.885	3.885
- GENERAL PLANT & ADMIN.	0.000	0.000	1.330	2.415	2.415	2.415	2.940	2.940	2.940
OPERATING PROFIT	0.000	0.000	4.572	7.933	7.765	7.765	5.773	5.773	5.773

WELOFF FINANCIAL SYSTEM 86/ 4/21

KERR ADDISON, ML PROJECT, EQUITY - $350 AU

OPERATING SUMMARY
(MILLIONS $)

	1995	1996	1997	1998	ACCUM
OXIDE ORE					
OXIDE ORE MILLED (000 TONS)	0.000	0.000	0.000	0.000	375.000
GOLD GRADE (OZS/TON)	0.000	0.000	0.000	0.000	0.297
GOLD RECOVERY (%)	0.0	0.0	0.0	0.0	85.0
PAYABLE GOLD (000 OZS)	0.000	0.000	0.000	0.000	94.669
GOLD PRICE ($US/OZ)	350.00	350.00	350.00	350.00	350.00
GROSS REVENUE - OXIDE ORE ($US)	0.000	0.000	0.000	0.000	33.134
- REFINING CHARGES @ $3.50/OZ	0.000	0.000	0.000	0.000	0.331
NET GOLD REVENUE ($US)	0.000	0.000	0.000	0.000	32.803
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	0.000	0.000	0.000	0.000	46.201
REFRACTORY ORE					
REFRACTORY ORE MILLED (000 TONS)	105.000	105.000	23.000	0.000	548.000
GOLD GRADE (OZS/TON)	0.387	0.387	0.387	0.000	0.387
GOLD RECOVERY (%)	90.0	90.0	90.0	0.0	90.0
PAYABLE GOLD (000 OZS)	36.571	36.571	8.011	0.000	190.868
GOLD PRICE ($US/OZ)	350.00	350.00	350.00	350.00	350.00
GROSS REVENUE - REFRACTORY ORE ($US)	12.800	12.800	2.804	0.000	66.804
- REFINING CHARGES @ $3.50/OZ	0.128	0.128	0.028	0.000	0.668
NET GOLD REVENUE ($US)	12.672	12.672	2.776	0.000	66.136
EXCHANGE RATE ($CDN/$US)	1.408	1.408	1.408	1.408	1.408
NET GOLD REVENUE ($CDN)	17.848	17.848	3.910	0.000	93.149
TOTAL NET REVENUE (CDNS)	17.848	17.848	3.910	0.000	139.350
- MINING COSTS	5.250	5.250	1.150	0.000	28.690
- MILLING COSTS	3.885	3.885	0.851	0.000	28.526
- GENERAL PLANT & ADMIN.	2.940	2.940	0.644	0.000	23.969
OPERATING PROFIT	5.773	5.773	1.265	0.000	53.165

WELOFF FINANCIAL SYSTEM 86/ 4/21

KERR ADDISON, ML PROJECT, EQUITY - $350 AU

CASHFLOW SUMMARY - PAGE 1
$ MILLIONS CAN.

39		1986	1987	1988	1989	1990	1991	1992	1993	1994
261	ORE MILLED (000 S TONS)	0.00	0.00	60.00	105.00	105.00	105.00	105.00	105.00	105.00
262	NET SMELTER RETURN	0.000	0.000	7.392	12.936	12.936	12.936	17.848	17.848	17.848
321	+SALES ADJUSTMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
263	-OPERATING COSTS	0.000	0.000	2.820	5.003	5.171	5.171	12.075	12.075	12.075
310	-ROYALTY	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	MINE SITE INCOME	0.000	0.000	4.572	7.933	7.765	7.765	5.773	5.773	5.773
99	-FEDERAL INCOME TAX PAID	0.000	-0.130	-0.150	0.000	0.000	-0.120	0.000	0.290	1.799
118	-B.C. INCOME TAX PAID	0.000	0.000	0.000	0.000	0.000	0.000	1.330	0.574	0.588
132	-B.C. MIN RES TAX PAID	0.000	0.000	0.000	0.000	0.000	0.000	0.528	0.389	0.449
228	TOTAL TAXES PAID	0.000	-0.130	-0.150	0.000	0.000	-0.120	1.858	1.252	2.836
28	CASH FLOW BEFORE CAPITAL COSTS	0.000	0.130	4.722	7.933	7.765	7.885	3.915	4.521	2.937
380	- CAPITAL	0.000	6.500	7.500	0.000	0.000	6.000	0.000	0.000	0.000
381	- EXPLORATION & DEVELOPMENT	0.080	5.050	1.000	0.200	0.250	1.250	0.000	0.000	0.000
10	-WORKING CAPITAL REQUIRED	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
11	-CAPITALIZED INTEREST	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
80	INITIAL CAPITAL COSTS	0.080	11.550	9.500	0.200	0.250	7.250	0.000	0.000	0.000
252	+WORKING CAPITAL RECOVERY	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	+SALVAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
86	TOTAL CAPITAL COSTS	0.080	11.550	9.500	0.200	0.250	7.250	0.000	0.000	0.000
29	CASH FLOW BEFORE FINANCING	-0.080	-11.420	-4.778	7.733	7.515	0.635	3.915	4.521	2.937
15	+PRIMARY BANK LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
322	+OPTIONAL LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
243	-SCHEDULED LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
135	-OPTIONAL LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
31	-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
149	NET EQUITY CASH AVAILABLE (REQUIRED	-0.080	-11.420	-4.778	7.733	7.515	0.635	3.915	4.521	2.937
244	ACCUMULATIVE TOTAL	-0.080	-11.500	-16.278	-8.545	-1.029	-0.394	3.521	8.041	10.978
42	DISCOUNTED NCF (5.0 PCT)	-0.080	-10.876	-4.334	6.680	6.183	0.498	2.921	3.213	1.988
34	DISCOUNTED NCF (10.0 PCT)	-0.080	-10.382	-3.949	5.810	5.133	0.394	2.210	2.320	1.370
49	DISCOUNTED NCF (15.0 PCT)	-0.080	-9.930	-3.613	5.085	4.297	0.316	1.692	1.700	0.960
248	DISCOUNTED NCF (20.0 PCT)	-0.080	-9.517	-3.318	4.475	3.624	0.255	1.311	1.262	0.683
250	DISCOUNTED NCF (25.0 PCT)	-0.080	-9.136	-3.058	3.959	3.078	0.208	1.026	0.948	0.493
239	BEFORE TAX PAYBACK PERIOD (YEARS	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
101	AFTER TAX PAYBACK PERIOD (YEARS)	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240	PRE-TAX RATE OF RETURN (PCT)	25.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
133	AFTER TAX RATE OF RETURN (PCT)	20.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

KERR ADDISON, ML PROJECT, EQUITY - $350 AU

CASHFLOW SUMMARY - PAGE 1
$ MILLIONS CAN.

39		1995	1996	1997	1998	ACCUM
261	ORE MILLED (000 S TONS)	105.00	105.00	23.00	0.00	923.00
262	NET SMELTER RETURN	17.848	17.848	3.910	0.000	139.350
321	+SALES ADJUSTMENT	0.000	0.000	0.000	0.000	0.000
263	-OPERATING COSTS	12.075	12.075	2.645	0.000	81.185
310	-ROYALTY	0.000	0.000	0.000	0.000	0.000
30	MINE SITE INCOME	5.773	5.773	1.265	0.000	58.165
99	-FEDERAL INCOME TAX PAID	1.090	1.114	0.532	0.000	4.424
118	-B.C. INCOME TAX PAID	0.648	0.661	0.319	0.000	4.120
132	-B.C. MIN RES TAX PAID	0.491	0.521	0.699	0.000	3.078
228	TOTAL TAXES PAID	2.229	2.296	1.550	0.000	11.622
28	CASH FLOW BEFORE CAPITAL COSTS	3.543	3.477	-0.286	0.000	46.542
380	- CAPITAL	0.000	0.000	0.000	0.000	20.000
381	- EXPLORATION & DEVELOPMENT	0.000	0.000	0.000	0.000	7.830
10	-WORKING CAPITAL REQUIRED	0.000	0.000	0.000	0.000	1.000
11	-CAPITALIZED INTEREST	0.000	0.000	0.000	0.000	0.000
80	INITIAL CAPITAL COSTS	0.000	0.000	0.000	0.000	28.830
252	+WORKING CAPITAL RECOVERY	0.000	0.000	1.000	0.000	1.000
18	+SALVAGE	0.000	0.000	2.000	0.000	2.000
86	TOTAL CAPITAL COSTS	0.000	0.000	-3.000	0.000	25.830
29	CASH FLOW BEFORE FINANCING	3.543	3.477	2.714	0.000	20.712
15	+PRIMARY BANK LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000
322	+OPTIONAL LOAN DRAWDOWN	0.000	0.000	0.000	0.000	0.000
243	-SCHEDULED LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000
135	-OPTIONAL LOAN REPAYMENT	0.000	0.000	0.000	0.000	0.000
31	-INTEREST EXPENSE	0.000	0.000	0.000	0.000	0.000
149	NET EQUITY CASH AVAILABLE (REQUIRED	3.543	3.477	2.714	0.000	20.712
244	ACCUMULATIVE TOTAL	14.522	17.998	20.712	20.712	0.000
42	DISCOUNTED NCF (5.0 PCT)	2.284	2.134	1.587	0.000	12.198
34	DISCOUNTED NCF (10.0 PCT)	1.503	1.340	0.951	0.000	6.621
49	DISCOUNTED NCF (15.0 PCT)	1.007	0.859	0.583	0.000	2.876
248	DISCOUNTED NCF (20.0 PCT)	0.687	0.562	0.365	0.000	0.309
250	DISCOUNTED NCF (25.0 PCT)	0.476	0.373	0.233	0.000	-1.479
239	BEFORE TAX PAYBACK PERIOD (YEARS	0.0	0.0	0.0	0.0	0.0
101	AFTER TAX PAYBACK PERIOD (YEARS)	0.0	0.0	0.0	0.0	0.0
240	PRE-TAX RATE OF RETURN (PCT)	0.00	0.00	0.00	0.00	25.45
133	AFTER TAX RATE OF RETURN (PCT)	0.00	0.00	0.00	0.00	20.75

BEAR-TOTEM GOLD MINE
(OXIDE ORE, AND REFRACTORY ORE, ALL WEATHER ACCESS)
CASH FLOW SUMMARY
CONSTANT 1986 $M U.S.

	1986	1987	1988	1989	1990	1991	TOTAL
EXPLORATION/EVALUATION	0.7	0.0	0.0	1.0	0.0	0.0	1.7
DEVELOPMENT	1.0	8.9	0.0	0.0	9.0	0.0	19.5
REVENUE	0.0	0.0	11.3	11.6	11.8	12.3	100
COST	0.0	0.0	3.7	3.7	4.9	7.6	52.6
AFTER-TAX CASH FLOW	(0.6)	(6.5)	4.2	4.2	(4.2)	2.9	10.6

THEN CURRENT ROR	30%
NET PRESENT VALUE @ 20%	2.0

@ $400/OZ GOLD
THEN CURRENT ROR = 43%
NET PRESENT VALUE @ 20% = 5.0

BEAR-TOTEM GOLD MINE
(OXIDE ORE, AND REFRACTORY ORE, ALL WEATHER ACCESS)
ASSUMPTION SUMMARY
CONSTANT 1986 $ U.S.

RESERVE

SIZE	270 M TONS OXIDE
	560 M TONS REFACTORY
MILL FEED GRADE	.39 OZ./TON
TYPE	OPEN PIT FOR OXIDE ORE
	UNDERGROUND FOR REFACTORY ORE

PRODUCTION

RATE	100 M TONS/YR.
	33 M OZ. AU/YR.
LIFE	9 YRS.
START-UP	1988
MILL RECOVERY	85% ON OXIDE
	90% ON REFRACTORY

OPERATING COSTS[2]	$/TON		$/OZ. GOLD	
	OXIDE	REFACTORY	OXIDE	REFACTORY
MINING[1]	9.60	36.00	29.00	102.60
MILLING	12.40	12.40	37.00	35.30
ROASTING	0	12.60	0	35.90
G&A AND ROAD MAIN.	15.00	15.00	45.25	42.70
TOTAL	37.00	76.00	111.25	216.50

1 USED MINING EQUIPMENT
2 ALLOWANCE FOR ALL WEATHER ACCESS

BEAR-TOTEM GOLD MINE
(OXIDE ORE, ALL WEATHER ACCESS
CASH FLOW SUMMARY
CONSTANT 1986 $M U.S.

	1986	1987	1988	1989	1990	TOTAL
EXPLORATION/EVALUATION	0.7	0.0	0.0	0.0	0.0	0.7
DEVELOPMENT	1.0	8.9	0.0	0.0	0.0	9.9
REVENUE	0.0	0.0	11.3	11.6	8.4	31.3
COST	0.0	0.0	3.7	3.7	2.6	10.0
AFTER-TAX CASH FLOW	(0.6)	(6.5)	4.0	4.5	3.1	4.5

THEN CURRENT ROR	30%
NET PRESENT VALUE @ 20%	1.1

@ $400/OZ GOLD

THEN CURRENT ROR = 43% @
NET PRESENT VALUE @ 20% = 2.6

BEAR-TOTEM GOLD MINE
(OXIDE ORE, ALL WEATHER ACCESS)
ASSUMPTION SUMMARY
CONSTANT 1986 $ U.S.

RESERVE

SIZE	270 M TONS
MILL FEED GRADE	.39 OZ./TON
TYPE	OPEN PIT

PRODUCTION

RATE	100 M TONS/YR.
	33 M OZ. AU/YR.
LIFE	3 YRS.
START-UP	1988
MILL RECOVERY	85%

OPERATING COSTS[2]

	OXIDE	$/OZ. GOLD
MINING[1]	9.60	29.00
MILLING	12.40	37.00
G&A AND ROAD MAIN.	15.00	45.25
TOTAL	37.00	111.25

1 USED MINING EQUIPMENT
2 ALLOWANCE FOR ALL WEATHER ACCESS

HIGH WILDLIFE VALUE on Sheslay River, Floodplain - possibly Moose Winter Range

HACKETT WEIR
1985 ESCAPEMENT:
2,309 SOCKEYE
931 COHO
434 CHINOOK

LITTLE TAHLTAN WEIR
1985 ESCAPEMENT:
3,147 COHO

TAHLTAN WEIR
1985 ESCAPEMENT:
67,326 SOCKEYE

PROJECT SITE

Guide Outfitter Camps (2) and Airstrip

LEGEND

STREAM CROSSING (as referred to in text) ●8

WEIR (Fisheries and Oceans Canada)

inches
centimetres
This reference scale bar has been added to the original drawing. When plotted at the same rate as the image, therefore it can be used as a reference for the original size.

5 0 5 10 15 20 25 30
SCALE IN KILOMETRES
1:250,000 (CONTOUR INTERVAL=1000')

NO.	DESCRIPTION	DATE	BY

NO.	DESCRIPTION	DATE	BY

SECTION:
SCALE 1:250000 DATE
DESIGNED BY: R.L.M. JAN.85
DRAWN BY: P.A.H. JAN.85
CHECKED BY:

CLIENT: CHEVRON CANADA RESOURCES LIMITED
LOCATION: BEARSKIN LAKE, B.C.
KILBORN

TITLE
BEAR TOTEM PROJECT
PROPOSED ACCESS ROAD
December 1985

ACCT. NO.
PROJECT NO. 7739 DIVISION NO. 15
DRAWING NUMBER FIGURE 3
REV.