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**GEOPROY S.A.**



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Report on my visit (8-15 November 1986) to Vancouver and Nevada, covering activities of Minerex Resources Ltd of Vancouver, B.C., at the following prospects:

- Oest property, near Silver City, Lyon County, Nevada;
  - several claim groups near Grasset Lake, Quebec;
  - Humbolt claims, Aurora district, Mineral County, Nevada;
- with final comment on finance,

by

Dr H Neville Rhoden

25 November 1986

Summary of Minerex activity

- . Exploration at the Oest property was satisfactorily done, but failed to discover ore, and expenditure should now cease other than making the final option payment.
- . Exploration polity in Quebec, with Detour Syndicate/MPH Consulting, is astute, limiting risk while retaining a worth while interest, in areas that offer high rewards (like Hemlo) for a few.
- . Purchase 50% interest in the Humbolt Aurora mine of Electra North West Resources Ltd from Global Resources Recovery Inc (the present operators), after checking mineral rights and equipment leases and studying projected costs and capex for some new equipment, to provide a cashflow in 1987.
- . Overall, Minerex is a well-run vehicle for the exploration lottery, and more soundly based than in 1985.





Borealis Mine, with 2 pits in background, 2 leach heaps in the foreground, and sundry dumps

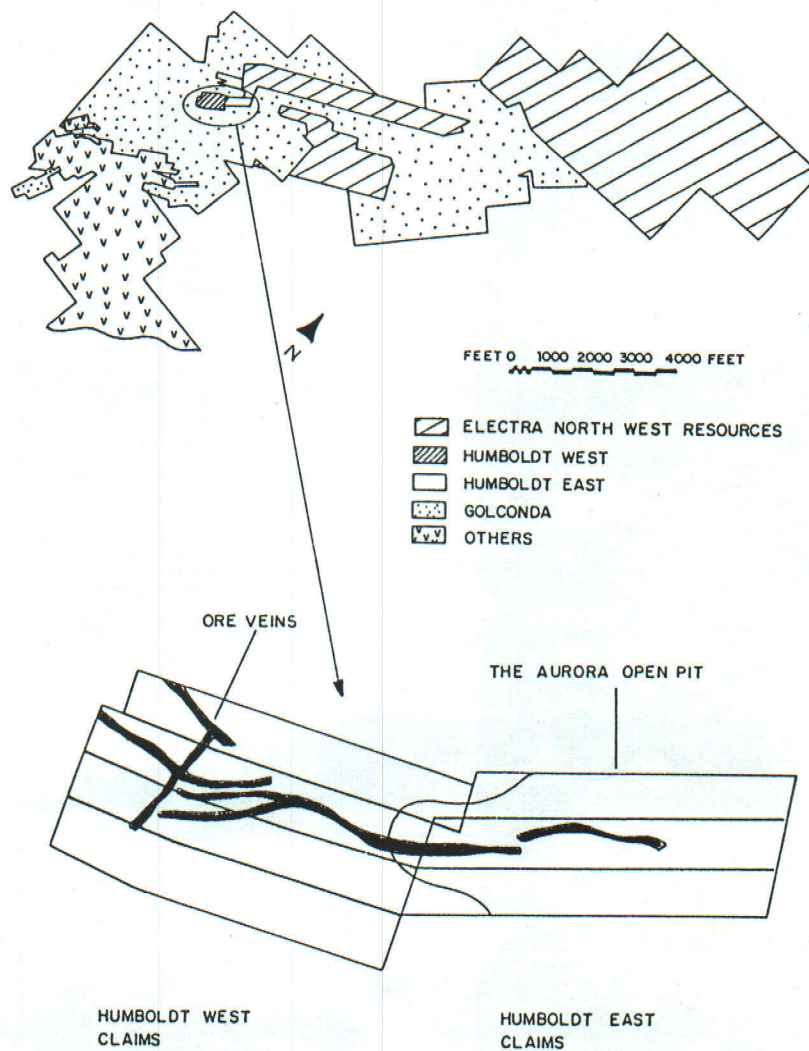


Humboldt claims, Aurora district. Evening view, with pit in center background





AURORA DISTRICT - CLAIMS





Humboldt claims, Aurora district, Mineral County, NevadaOverview

This property is 22 miles SW of Hawthorne and about 122 SSE of Reno, at an altitude of 7,400 ft (see map overleaf). Good dirt roads to Aurora over Lucky Boy Pass may be cut by snow in winter months, when freezing would anyway prevent heap leaching.

The newly developed Borealis mine is 7 miles NE of Aurora and has the same type of ore. Its published reserves in 2 pits were 1.3 M s.t with 0.064 oz/s.t Au and minor Ag, though this figure must have increased as the mine has continued operating for several years. Throughput in 1984 of 914,000 s.t at a recovered grade of 0.061 oz/s.t produced nearly 50,000 oz of Au, at a cost of \$190/oz or \$12 /s.t of ore treated, albeit during an optimum period. Costs must have increased since then.

Mining in the Aurora district began in 1860 and reached a climax in 1865 with 10 operating mines, and thereafter declined rapidly as the richest ore to a depth of 200 ft became exhausted; subsequent attempts to exploit deeper ore to 400 ft and even 800 ft at one shaft failed due to lower grades and excessive water.

Mineralization occurs in a multitude of major and minor veins trending NE-SW, cut by N-S faults, shown in the map overleaf, extending over an area of 4.4 x 1.2 Km, all within a series of Tertiary volcanics. Post-mineralization lavas overlie the NE corner of the area, and it seems likely that veins continue underneath.

The Humboldt and Prospectus veins are among the strongest and best mineralised in the district, being 2 halves of a single vein offset by a N-S fault. According to old reports, the Au/Ag ratio attains its highest value (1/1) in the north relative to veins further south, but everywhere declines in depth due to increasing Ag content and less Au (1/5 or less). Golconda Resources hold rights over the Prospectus vein, and Electra North West Resources Ltd over the Humboldt.

Reserves & potential on Humboldt vein

The Humboldt vein, in places split in 2 by a wedge of wallrock, is 2400 ft long by 20-80 ft wide and has been drilled to 350 ft depth. It consists of quartz, usually brecciated and recemented, finely banded and very vuggy, with textures indicating changes from opal to chalcedony and quartz; accessory minerals include hematite in the form of jasper, and, obviously, free gold and minor silver. In depth, the quartz becomes more compact, and Ag sulphide - argentite - and pyrite appear. The alteration of the wallrocks is intense: the footwall has 10-30 ft of propylization and the hangingwall has over 100 ft of strong argillization.



I have carefully checked their figures against those for other mines and find them to be correct for a well-run operation. The return for Minerex is not princely, but makes the company cash positive for the first time, and this in 1987, with good effect on share price.

#### Conclusion

I believe the Aurora purchase to be sound if:

- a reasonable price (under \$1.2 million) can be obtained from Global;
- Electra NW will permit Minerex a priority right-off of their capex against revenue;
- the 400 ft depth limitation on Humboldt West can be eliminated to permit deeper mining;
- the leasing of mining and crushing equipment (from an associate of Global) can be renegotiated, taking care of maintenance;
- the capex needed for a Zn-based Au plant, agglomeration equipment, new leach pads and tanks, stripping at the mine and, later on, more drilling, as estimated by Performance Associates, is not too high.

It would be useful to discuss combining operations with Golconda for the Prospectus and Humboldt veins, and discuss leasing rights with other claim holders in the district. Golconda have evaluated their vein, but not yet started mining.

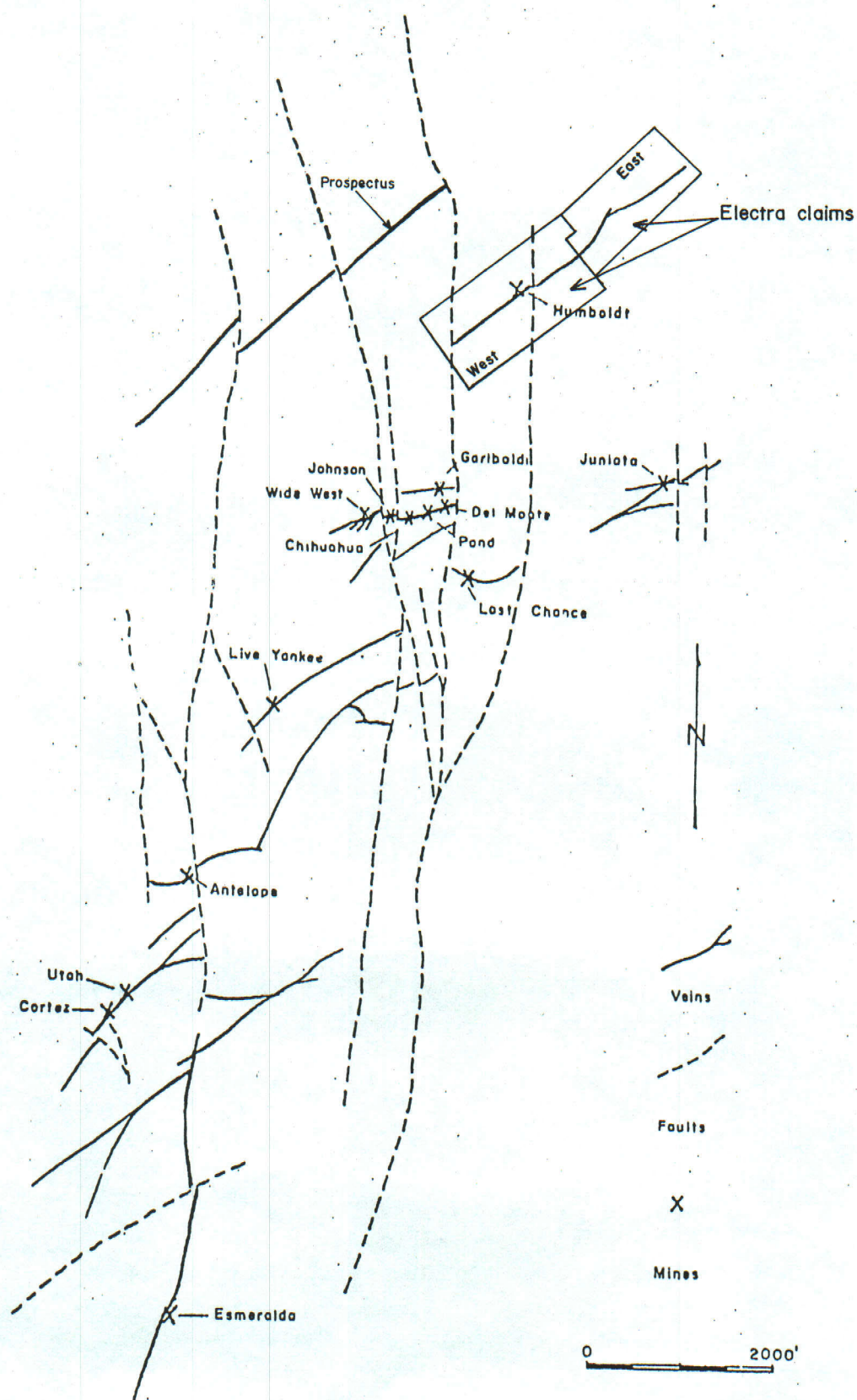
#### Final comment on finance

Minerex Resources now has a better flow of interesting prospects than in 1985 when only the rather modest Oest property was on line. But exploration consumes cash until a winner is discovered, when all investors gain; no cash, and all is lost. So Minerex needs more investment.

Question: Is Minerex a well-run vehicle for this type of speculation, and should more cash be invested?

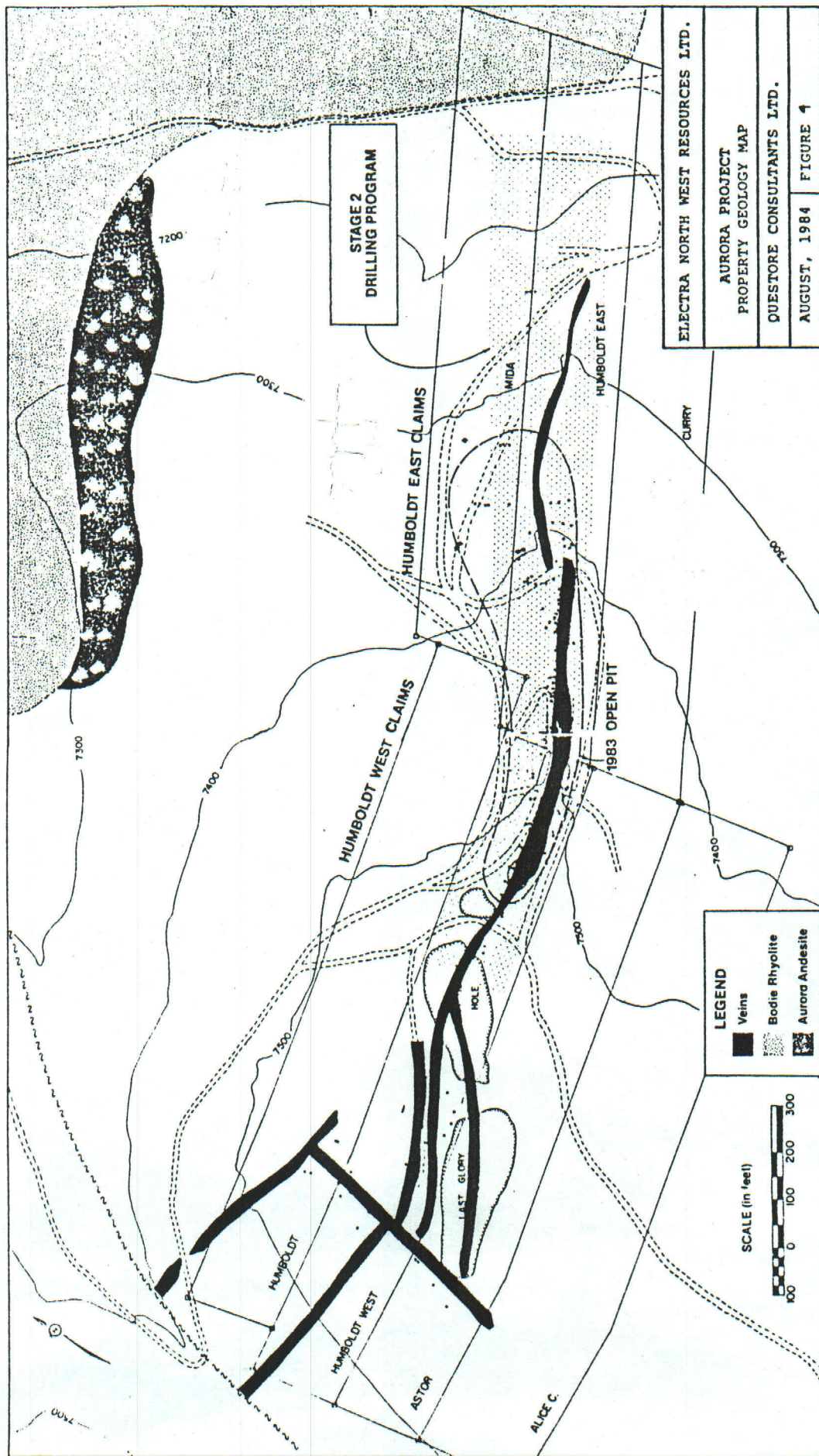
Answer: Yes, if the investor is patient and watches the action closely.





Relationship between ore deposits  
and north - south faults









East Humboldt openpit



East Humboldt vein - vuggy quartz, with Au







The texture of the quartz, type and intensity of alteration and high Au/Ag ratio in the top levels that changes rapidly in depth, all suggest that the vein has suffered little erosion since its formation, perhaps only 100 ft below the original hot-spring level, so that secondary enrichment, though present to some degree, was not a major factor. In depth, below 400 ft, it seems likely that the Au content will diminish somewhat, but the Ag will increase sharply, so potential exists for deeper exploration. Maps and sections are included overleaf.

Drilling in 1980-85 (over 170 reverse circulation, percussion and diamond-drill holes) along a strike length of 1,100 ft in the Humboldt East section and part of the West, with an average width of 50 ft and a depth of 260 ft, less ore that had been mined up to mid-1984, gave reserves of 940,000 s.t at a grade of 0.11 oz/s.t Au and 0.36 oz/s.t Ag, using a cut-off of 0.03 oz/s.t Au to define pay-limits. About 140,000 s.t with 0.11 oz Au and 0.12 oz Ag have been mined since that date, and run-of-mine values have confirmed those shown by drilling.

The Humboldt West claim has already been mined in glory-holes and stopes down to 400 ft level, but since the old miners took only the highest grade ore (over 0.2 oz), it is probable that at least 350,000 s.t of mineable ore remains.

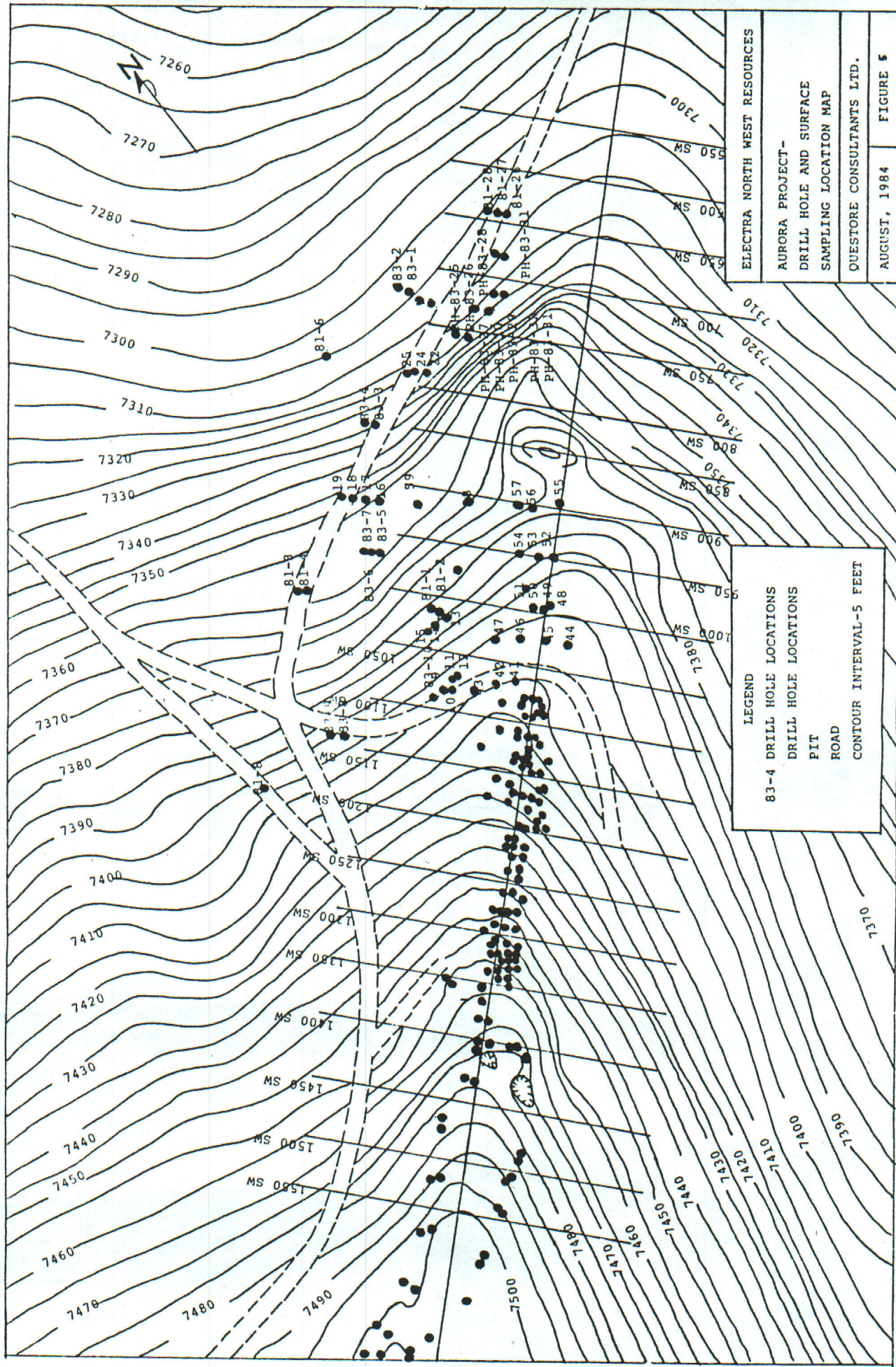
#### Minerex' interest

Electra North West Resources of Vancouver (Pres. Doug Stelling) hold 7 claims over the Humboldt vein, subject to a 2-4% royalty to the original owners, and others nearby in their own name, surrounded by a mosaic of claims belonging to Golconda Resources and others - see maps overleaf. The Humboldt West group is leased from Golconda down to 400 ft below surface only, which is the level of the adit below numerous old stopes, and this needs to be renegotiated as mining may go deeper.

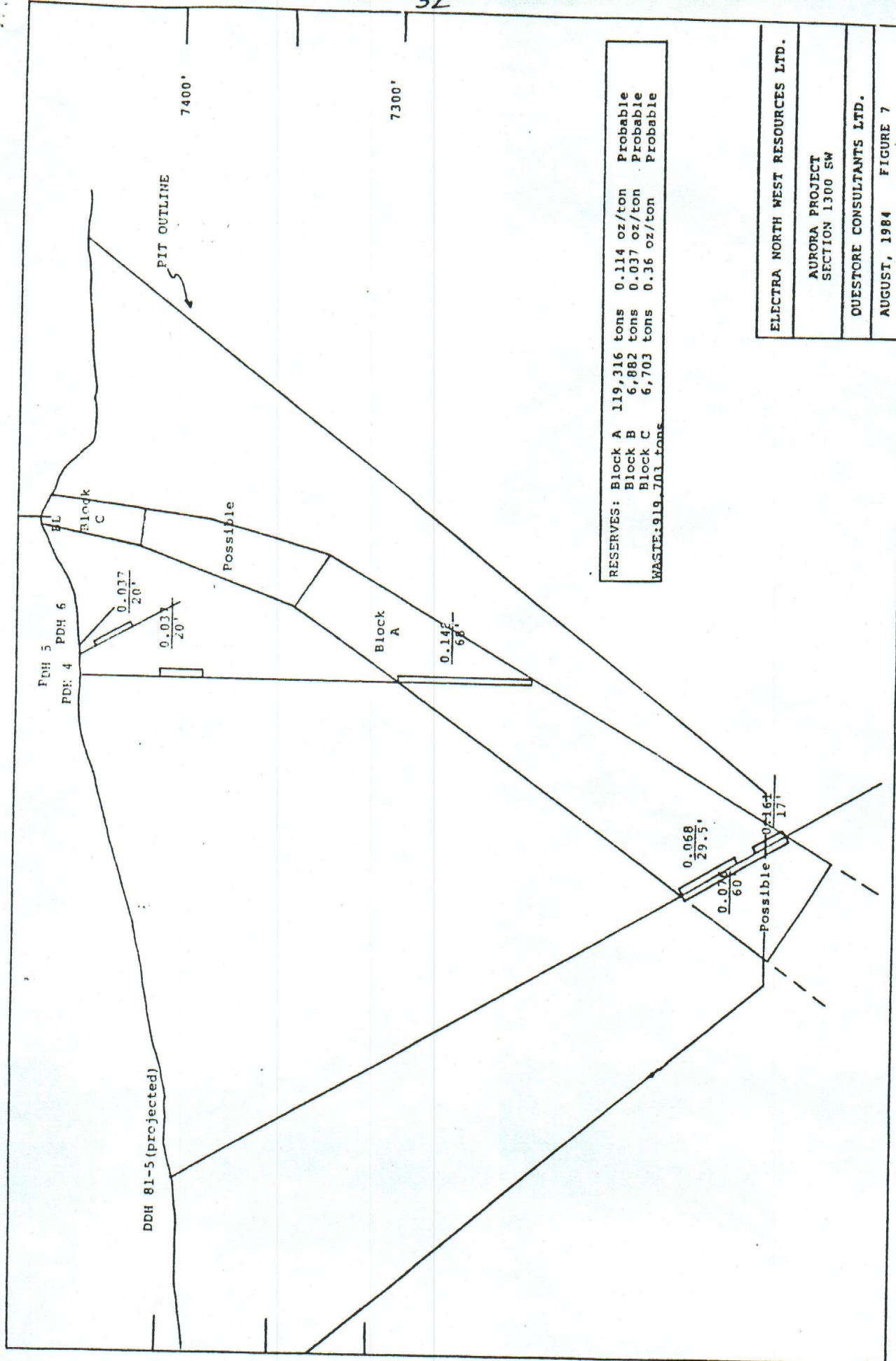
Electra have had a history of unsatisfactory partners - bank financing in 1982 failed, Centennial Minerals Ltd of Vancouver during 1984-85, and Global Resources Recovery Inc during 1986. The latter are currently the mine operators, with a hillside openpit (200 m long by 10 m wide at the bottom and up to 30 m deep), a standard crushing and heap leaching facility, but with novel resin extraction method for the Au. Gross inefficiency and muddle have caused Global to lose money on the operation, and they now seem willing to sell their share (Global are Hollywood types (!) rather than mining people).

It is proposed that Minerex buy Global's 50% interest, instal a normal Zn plant for Au and agglomeration equipment for fines, as well as provide management. The purchase price and capex would be of the order of \$1.3-1.6 million. Minerex and Electra have commissioned Performance Associates of Danville, CA, who are well-known mining consultants, to identify the problems that need solving and estimate the future operating costs and capex required to make the mine profitable. A preliminary analysis by Performance is appended, and shows total costs of \$19-20/s.t, including royalties and leased equipment, for a revenue of \$30-31/s.t treated one; for a throughput of 210,000 s.t/year, the cashflow would exceed \$2 million p.a. between the 2 owners.

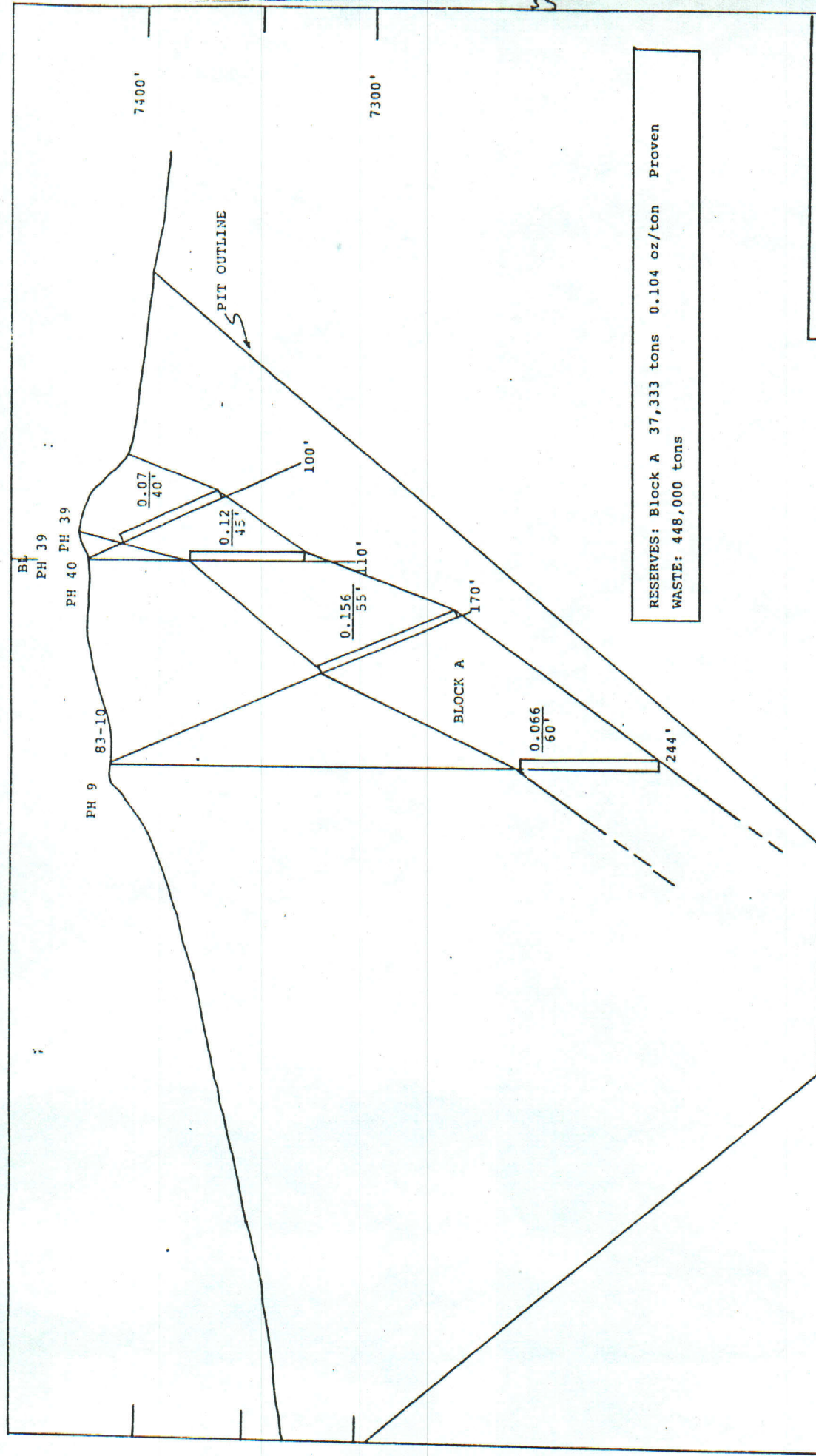












ELECTRA NORTH WEST RESOURCES LTD.

AURORA PROJECT  
 SECTION 1090 SW

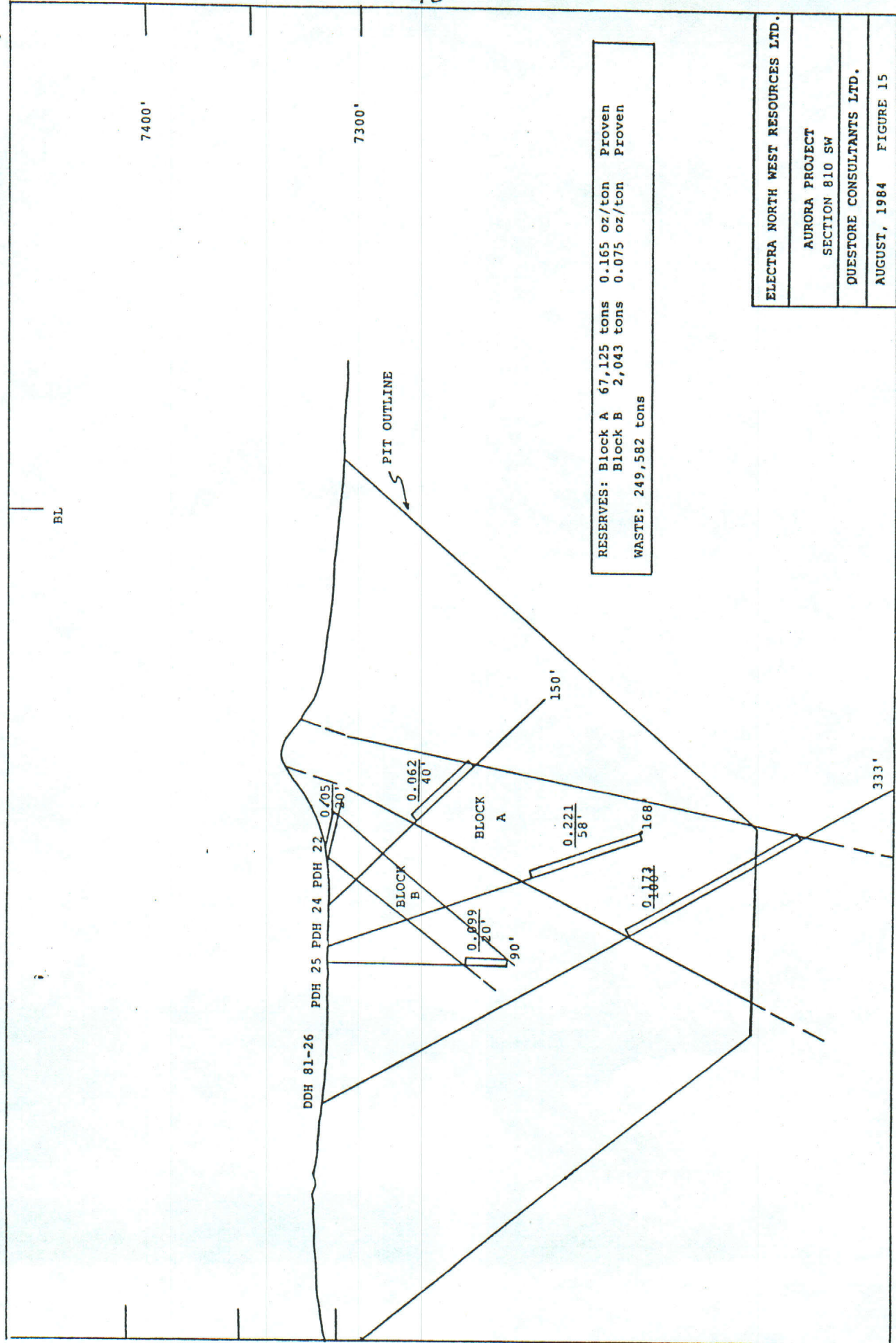
QUESTORE CONSULTANTS LTD.

AUGUST, 1984 FIGURE 10









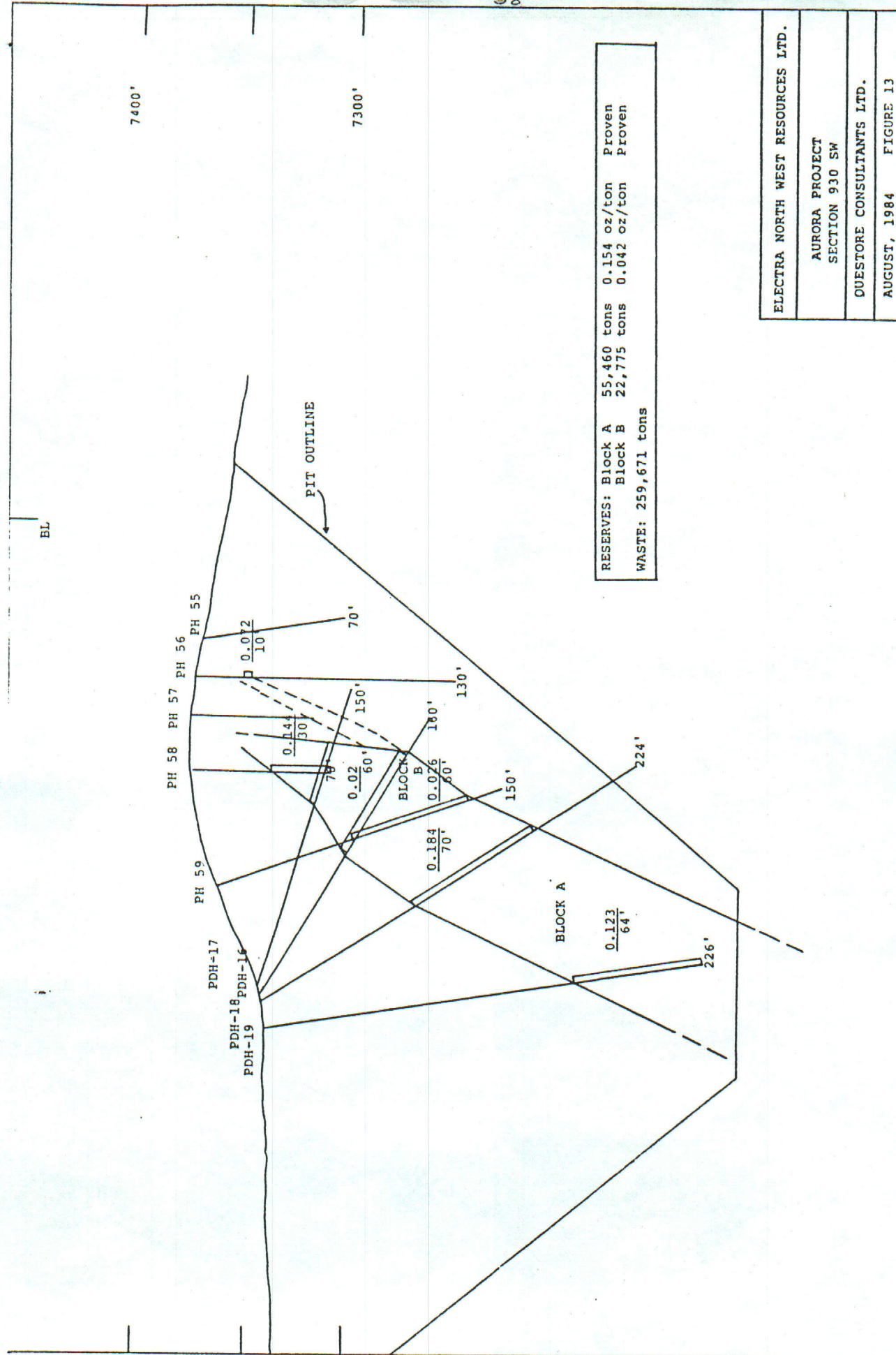
ELECTRA NORTH WEST RESOURCES LTD.

AURORA PROJECT  
SECTION 810 SW

QUESTORE CONSULTANTS LTD.

AUGUST, 1984 FIGURE 15





RESERVES: Block A	55,460 tons	0.154 oz/ton	Proven
Block B	22,775 tons	0.042 oz/ton	Proven
WASTE:	259,671 tons		

ELECTRA NORTH WEST RESOURCES LTD.
AUROKA PROJECT
SECTION 930 SW
OUESTORE CONSULTANTS LTD.
AUGUST, 1984
FIGURE 13



## PERFORMANCE ASSOCIATES, INC.

PRELIMINARY COST ANALYSIS  
AURORA MINE

NOVEMBER 7, 1986

Performance Associates, Inc. has, for the past three months, been providing operational and technical advice and assistance to the Aurora Mine management. Amongst other tasks we have been asked to develop a mine plan and financial projection for the property. As the first step, in this regard, a drilling program has been initiated to define more precisely the ore body and related waste which will be encountered over the next three years, or thereabouts. This drill program will be completed before mid November.

Concurrently we are evaluating the comparative economics of three different recovery processes: 1) Carbon Columns, 2) Zinc Precipitation, and 3) Ion Exchange, the process which is currently employed.

At the request of Electra North West Resources Ltd. we have prepared the attached preliminary capital and operating cost estimates. Since the results of the drilling program, the comparative process study, and the mine plan are not yet available this preliminary projection is based on a number of assumptions, the most significant of which are listed below. We have based these assumptions on information currently available and on our experience and judgment. We have endeavored to maintain a conservative position in these assumptions. We are certain that when the mine plan is available, most of these assumptions will be modified. We believe that there is a reasonable likelihood that the study, when completed, will present an equally or more favorable picture.

## Assumptions:

1. The drilling program will identify ore grading .10 oz. per ton.
2. The drilling program will identify ore which can be mined at an annual rate of 175000 tons per year for three years with an average stripping ratio of 5.2:1 on an in place basis.
3. Mining will dilute the ore produced by 20% and 5% lost in mining. Therefore ore will be delivered to the pads at the rate of 210000 tons per year at a grade of .083 oz. per



ton. The effective stripping ratio will be 4.4:1.

4. The ion exchange process is continued in use. The plant is expanded from 180 GPM to 250 GPM. The plant will recover 70% of the gold placed on the heaps.
5. 100% of the ore will be cement agglomerated prior to placement on the heaps.
6. Gold will continue to be recovered from the resin at the Akwaklame refinery. The refinery will recover 98% of the gold for Aurora's account. The refiners fee will average \$13 per oz. This represents a substantial reduction from the \$30 per oz. rate which was being experienced early in 1986.
7. Ore will be crushed and agglomerated at the rate of 1086 tons per 10 hour shift, operating 5 shifts per week for 9 months.
8. The mine will produce ore and waste at a rate of 3781 tons per 10 hour shift operating 5 shifts per week for 11 months of the year. In addition during 3 of those months a second shift would be worked.
9. The leaching and process operations will operate at 280 GPM, 21.8 hour shifts per week, for 9 months, Mar 1 through Nov 30.
10. Operating performance is estimated at reasonably attainable levels for a soundly operated mining operation. We have not assumed exceptionally good performance, but we have assumed that results will significantly exceed those realized previously at the Aurora.
11. Mining and crushing will be conducted with the equipment presently on site. The existing fleet will require significant overhaul expenditures before the start of next year's mining season. Aurora management has estimated that \$340,000 will be required. This is not technically a capital expenditure, but it has been included with capital since it does represent a front end requirement. \$200,000 has been allowed for purchase of one 35 ton haulage truck.
12. The operations office will be moved from Hawthorne to the mine. While little more than a trailer is required some



undetermined amount must be spent to establish reliable communications from the mine site. Therefore \$100,000 has been allowed for the relocation.

13. We project that one new leaching pad will be required each year. \$83,000 has been allowed each year.
14. The pregnant pond requires expansion. \$43,000 is estimated for this purpose.
15. Since the mine plan and study is incomplete we have allowed a 30% contingency for capital spending.
16. Wage rates and benefits are estimated to be comparable with nonunion metal mines in Nevada.
17. Royalties are paid to Syskon at the rate of 20% of net cash generated, on a cumulative basis, to Tenneco and Summa at 6% NSR and to Electra at 3% NSR. A selling price of \$400 per ounce was assumed. Production was split evenly between the Syskon and Tenneco leases for this purpose.

West H

East H

We must emphasize that it will be necessary to improve the management practices over those employed at Aurora in prior years. Primarily the operation requires more mining know how and a stronger production orientation.



Optimistic case: \$400 Gold 77% Recovery & Recvry Op. 5 shift/wk Diluted Strip Ratio 4.0:1 In Place Grade .13 oz. per ton Mine productivity improved 10 % ITEM		PERFORMANCE ASSOCIATES, INC  PRELIMINARY PROJECTION AURORA MINE  UNIT COST DATA		
PRODUCTION DATA				
Tons of ore mined		214493		
Stripping Ratio	4			
Tons of waste removed		859725		
Total tons mined		1074657		
Grade of ore in place - Oz/ton	0.130			
Grade of ore mined (diluted)	0.108			
Ounces of gold placed on pads		23200		
Ounces of gold recovered		17500		
Gold Selling Price per Ounce	\$400			
CASHFLOW PROJECTION				
Revenue		PER TON ORE	PER TON ALL MATL	PER OZ
Gross Gold Revenue		\$32.64		\$400.00
Smelter Charges		\$1.06		\$13.00
Revenue net of Smelter Charges		\$31.57		\$387.00
Operating costs - Cash Basis				
Mining				
Drilling		\$1.12	\$0.22	\$13.71
Blasting		\$1.04	\$0.21	\$12.73
Loading		\$1.34	\$0.27	\$16.38
Hauling		\$2.00	\$0.40	\$24.54
Road and Dump Mtns		\$1.12	\$0.22	\$13.68
Supervision and General		\$0.76	\$0.15	\$9.37
Total Mining Costs		\$7.38	\$1.47	\$90.42
Processing				
Crushing and Agglomerating		\$2.72		\$33.30
Leaching and Recovery		\$1.48		\$18.09
Services		\$0.69		\$8.50
Total Processing Costs		\$4.89		\$59.88
General And Administrative				
Administration		\$1.67		\$20.48
Royalties		\$3.54		\$43.35
Equipment Lease Payment		\$1.84		\$22.49
Total G and A		\$7.04		\$86.32
Capital Spending		\$0.39		\$4.74
Grand Total Expenditures		\$19.69		\$241.37
Net Cash Generation				\$145.63



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- . Overall, Minerex is a well-run vehicle for the exploration lottery, and more soundly based than in 1985.



Oest property, Lyon County, NevadaResults

The exploration program envisaged in previous reports by Minerex' geologists and mine engineers was carried out this year, but failed to located mineable ore. No further expenditure is justified on the Comet lode and adjacent veins other than making the final option payment (US \$50.000 in Jan '87), and this only with a view to eventually selling the property if the price of gold rises sharply. It may also be possible to sell some superficial ore-grade material (50-80.000 t with 0.08 oz/s.t) found at the northern end of the Comet Lode to the nearby Nevex mine for leaching on their heaps.

Retimbering the shaft, with the objective of recovering the deepest levels of the old mine for drilling and sampling for metallurgical testwork, was interrupted by mishaps: hooligans tipped a hire-car down the shaft and tried to set fire to the timbering; old stopes filled with rubble caved in and blocked the access. In general, it is a mistake to spend money and time trying to rehabilitate old workings other than simple "make safe" in readily accessible tunnels to allow geologists to map and sample the mineralization below surface, since they are often dangerous and only provide limited access to new potential ore-zones.

Reverse circulation drilling was done in Aug-Oct '86, with a total of 6,000 ft in 18 holes, on contract by Dateline Drilling Inc. of Montana, an experienced and competent company. Inclined boreholes (50-90° from horizontal) starting in the hangingwall and aiming to cut the vein at depths of 150-400 ft, were well sited along the whole length of the Comet structure, from near the southern edge of the claims to the northern end of the visible lode discovered in last year's mapping; in particular, 3 holes cut the lode immediately below the deepest stopes. Every 5 ft drilled was taken as a sample - theoretical weight of 91 lb for a 4.5 inch diameter hole - and recovery usually exceeded 80%; the sample was split 3 times on site, and the 8-10 lb cut was sent to Legend Laboratories in Reno for further grinding and splitting down to about 30 g (1 "assay ton") for fire assay. The drilling was satisfactory, but the sample preparation procedure followed was below standard and would give rise to repeatability errors in a rigorous program; however, this had no effect on the outcome in this case. Since borehole samples are small, some high values should be found to boost the mean grade.

The results were disappointing. Nearly all holes showed low values (0.04-0.12 oz/s.t Au) over a 10 ft length on crossing the vein, though some deeper holes cut better values of Ag (1-2 oz/s.t). Only 1 intersection had a good assay of 0.212 oz over 5 ft, but the 3 holes below the stopes were remarkably poor. A short hole immediately below a good sample taken in 1985 from a trench across the footwall shear zone was barren, confirming that such values are due to shallow enrichment formed during erosion in semi-arid climates.

Conclusions

Was reverse circulation drilling an adequate test of the property? Yes. The interpretation must be that the Comet lode, even below the old stopes, is



typically only 1-3 ft wide; hence, 5-10 ft drill samples on the incline dilute the values considerably, but this would occur anyway during mining. The paucity of alteration in the hangingwall rock and absence of values in the footwall both confirm the lack of strong mineralization along the Oest structures. Minor values were encountered in 2 holes that cut a narrow vein in the hangingwall of the Comet.

Diamond drilling to greater depth would probably reveal Ag mineralization, but also low grade and narrow.

Only 3 things remain to be done:

- make safe and cover the shaft;
- offer the small tonnage of Au-bearing rock at a bend in the vein at the northern end of the old workings with its superficial enrichment to Nevex for leaching on heaps, hoping to recover some cash;
- pay the final \$50,000 to buy the claim (\$250,000 has already been paid by Minerex and Rule (?), hoping to sell the property in the future.

#### Commentary

It is worth recalling that in my report of Oct 85, the risk at the Oest property was assessed at 70% against finding a mine, but 70% in favour of intersecting some good values; in fact, the drilling failed even the latter modest target. But this is about par for the course in exploration, and Minerex has gained experience in this type of epithermal Au deposit, learning also:

- not to get tangled with unreliable partners (Rule Resources);
- not to commit expenditure to mine working until ore grades and tonnages have been outlined by drilling - not necessarily fully proved, but at least cut by well-spaced boreholes;
- not to tackle prospects lacking ample signs of strong mineralization - length, breadth and alteration.

Minerex Resources has been strongly reinforced by the appointment of Dr Stanley B. Reamsbottom to its Board of Directors - a geologist with great experience in the exploration and evaluation of such deposits.



Claims near Grasset Lake, QuebecIntroduction

The type of mineralization, method of exploration and financial approach in Quebec is entirely different to that in the western U.S, but merits strong commendation on all 3 counts.

Ore bodies that have been mined for Au, and some also for base metals, in Ontario and Quebec occur in the Abitibi Greenstone Belt and others similar. These rocks, mostly volcanic in origin but with sedimentary and exhalative horizons, are of Archean age (2.4-2.8 billion years old) and have suffered gross deformation in later periods. Mineralization is found either in thin, but extensive sediments containing silica and carbonates, as in the newly discovered Hemlo district, or in multiple vein systems that were once feeder channels to the sedimentary type. In both cases, mineral suites and alteration patterns are very diagnostic and give rise to distinctive geophysical - electromagnetic and magnetic - expressions at the surface which are anomalous to the surrounding rocks. Little or nothing is visible, since the whole area is blanketed by glacial debris (till) and lakes and swamps. Complementing the 2 main geophysical methods, which can be either ground- or air-borne, a combined drilling-cum-geochemical sampling method is extensively used. In this, reverse circulation boreholes are drilled through the glacial layer and samples collected at or near its base, on the supposition that glaciers eroded sub-outcropping mineralised rocks and transported material some miles "down-ice"; following abnormal metal contents "up-ice" in lines of boreholes towards electromagnetic conductors or magnetic anomalies should indicate which of these is mineralised, and hence be probed by diamond drilling. This 3-fold technique has been successful in locating many deposits, including the most recent in the Casa Berardi/Selbaie/Estrades areas just south of the Grasset Lake/Mategami district.

Despite the difficulties of exploration - the summer period has too much water and the winter too much snow - 36 large mines with over 1 million oz of gold each and more than 100 smaller ones have been or are being exploited in Ontario/Quebec, with a total output of 137 million oz up to 1981, and the Hemlo and Casa Berardi finds are only the latest examples. The rewards for success are enormous; competition to obtain good areas is cut-throat (note the Lac/Corona Court case); and the penalties for failure are costly!

Minerex' approach

In this context, the policy being followed by Minerex Resources is astute, limiting the risk to acceptable levels while retaining a high percentage interest in each discovery. It comprises 3 district levels of activity.

The first phase started when MPH Consulting Ltd of Toronto, having synthesised regional information and private or published reports, selected 5 or 6 areas of special interest and, in the guise of Detour Syndicate, obtained 100% interest in the pertinent groups of claims (see listing and map overleaf). In each group, the Syndicate/MPH have spent a modest sum, about C\$200,000 on the 4 areas taken by Minerex, partly on geophysics and partly to obtain rights. But being neither



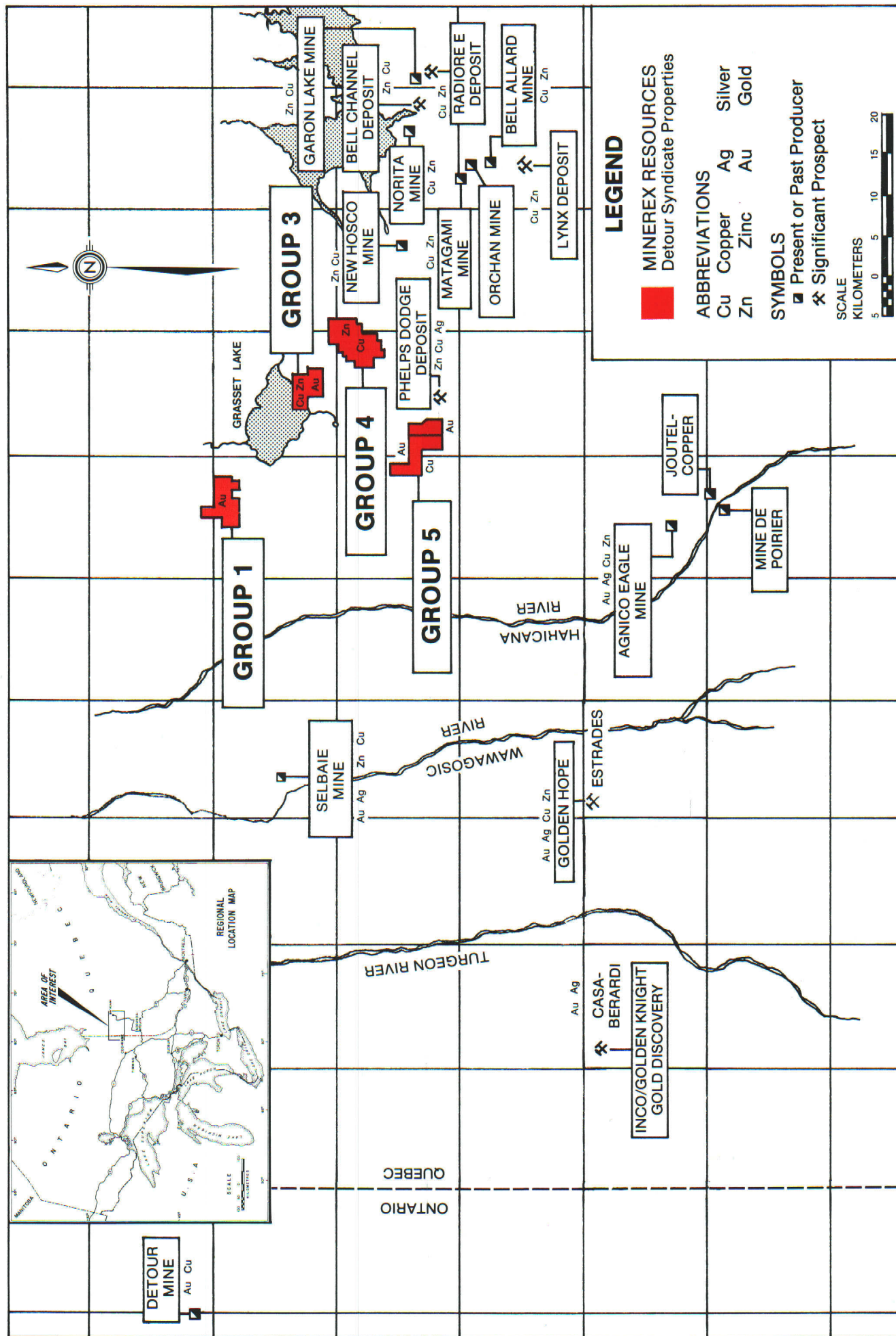


**MINEREX**

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## MINEREX RESOURCES/DETOUR SYNDICATE DETOUR MATAGAMI PROPERTIES





a fund-raising nor a mining company, that is the limit to their expenditure, which necessarily is spread over a large area and many other potential claim blocks.

The second phase consists in offering these groups to a junior mining company, such as Minerex Resources, who undertook to spend up to C\$450,000 on new exploration with MPH to earn a 50% interest in:

Group 1 - 119 claims

Group 4 - 179 claims

Group 3 - 79 claims

Group 5 - 102 claims

To help finance this, Minerex accepted a private placement by a single investor on a flow-through basis (whereby the investor obtains the tax credit, not Minerex) of 157,031 shares at a price of C\$2.865; the shares were subsequently repurchased. Quebec permits a C\$1.67 tax deduction for every C\$1 spent on exploration in the same tax year (extended to February to include winter drilling). Flow-through shares raised an estimated C\$350 million in 1985, mostly for Au, and some 50 projects made significant discoveries; two-thirds of the 20 best Canadian gold projects currently being developed for production have been assisted by this means.

Positive results, in the form of geophysical anomalies and, in places, reverse circulation drilling and geochem sampling of the till, were obtained in all groups, giving new targets for diamond drilling. Earlier exploration work by other companies was correlated to these results.

The third phase begins when Minerex/Detour (now 50/50) offer the results of Phase 2 work to senior mining companies, who can select which property offers most potential or least risk. Rayrock Yellowknife Resources Inc. of Toronto have agreed to explore the Group 3 claims, and will earn a 25% interest by spending C\$350,000 and a further 26% with C\$520,000. The end result will be that Rayrock will own 51% for C\$870,000, Minerex 24.5% for about C\$110,000 (one quarter of above, or C\$450,000 if the other 3 properties fail), and Detour/MPH 24.5% for very little (they provided the initial insight). Such expenditure should be enough to produce a bankable feasibility study to raise project finance. Rayrock is a very experienced operator, with the Pinson, Preble and Dee Au mines in Nevada and sundry oil and gas interests.

Noranda, one of the biggest companies, are studying the results of groups 1 and 5, and another junior those of group 4. A further group of claims, near Turgeon River (see map) 60-70 Km W of Grasset Lake, is being studied by Minerex for Phase 2 exploration.

This mode of escalating expenditure and reducing risk seems to be an admirable arrangement for all parties, and Minerex is well advised to continue examining areas offered by MPH/Detour and possibly other consultants if funds permit.



Borealis Mine, with 2 pits in background, 2 leach heaps in the foreground, and sundry dumps

Humboldt claims, Aurora district. Evening view, with pit in center background



Humboldt claims, Aurora district, Mineral County, NevadaOverview

This property is 22 miles SW of Hawthorne and about 122 SSE of Reno, at an altitude of 7,400 ft (see map overleaf). Good dirt roads to Aurora over Lucky Boy Pass may be cut by snow in winter months, when freezing would anyway prevent heap leaching.

The newly developed Borealis mine is 7 miles NE of Aurora and has the same type of ore. Its published reserves in 2 pits were 1.3 M s.t with 0.064 oz/s.t Au and minor Ag, though this figure must have increased as the mine has continued operating for several years. Throughput in 1984 of 914,000 s.t at a recovered grade of 0.061 oz/s.t produced nearly 50,000 oz of Au, at a cost of \$190/oz or \$12 /s.t of ore treated, albeit during an optimum period. Costs must have increased since then.

Mining in the Aurora district began in 1860 and reached a climax in 1865 with 10 operating mines, and thereafter declined rapidly as the richest ore to a depth of 200 ft became exhausted; subsequent attempts to exploit deeper ore to 400 ft and even 800 ft at one shaft failed due to lower grades and excessive water.

Mineralization occurs in a multitude of major and minor veins trending NE-SW, cut by N-S faults, shown in the map overleaf, extending over an area of 4.4 x 1.2 Km, all within a series of Tertiary volcanics. Post-mineralization lavas overlie the NE corner of the area, and it seems likely that veins continue underneath.

The Humboldt and Prospectus veins are among the strongest and best mineralised in the district, being 2 halves of a single vein offset by a N-S fault. According to old reports, the Au/Ag ratio attains its highest value (1/1) in the north relative to veins further south, but everywhere declines in depth due to increasing Ag content and less Au (1/5 or less). Golconda Resources hold rights over the Prospectus vein, and Electra North West Resources Ltd over the Humboldt.

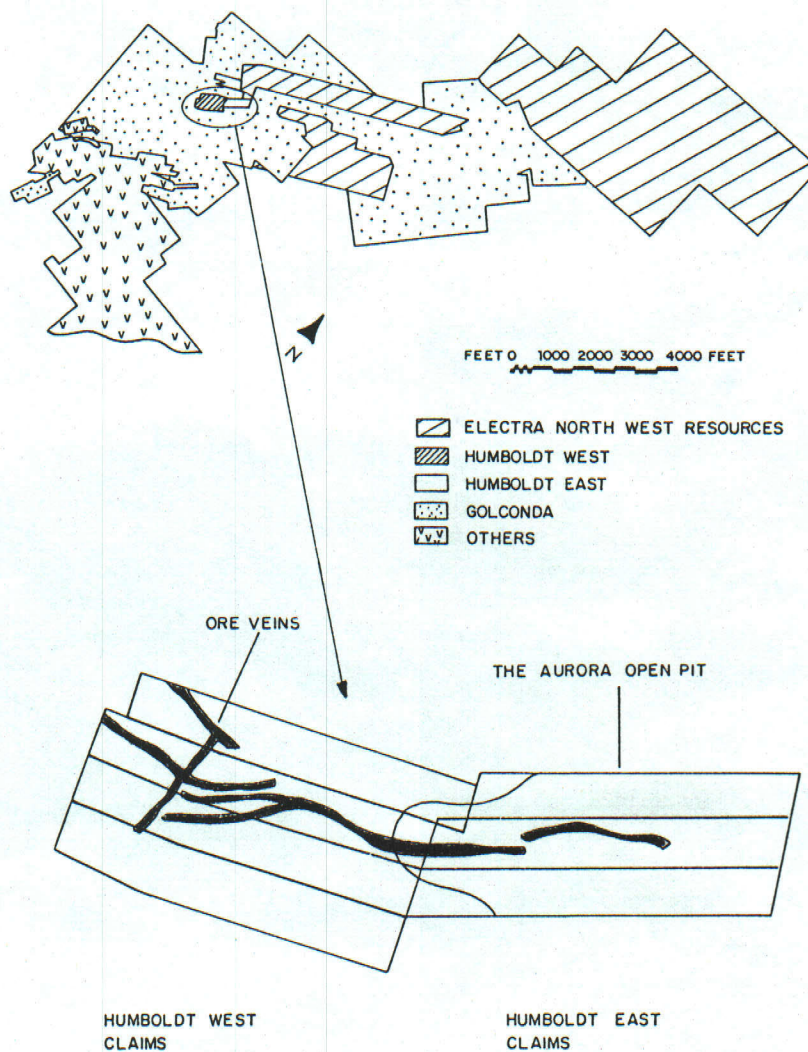
Reserves & potential on Humboldt vein

The Humboldt vein, in places split in 2 by a wedge of wallrock, is 2400 ft long by 20-80 ft wide and has been drilled to 350 ft depth. It consists of quartz, usually brecciated and recemented, finely banded and very vuggy, with textures indicating changes from opal to chalcedony and quartz; accessory minerals include hematite in the form of jasper, and, obviously, free gold and minor silver. In depth, the quartz becomes more compact, and Ag sulphide - argentite - and pyrite appear. The alteration of the wallrocks is intense: the footwall has 10-30 ft of propylization and the hangingwall has over 100 ft of strong argillization.

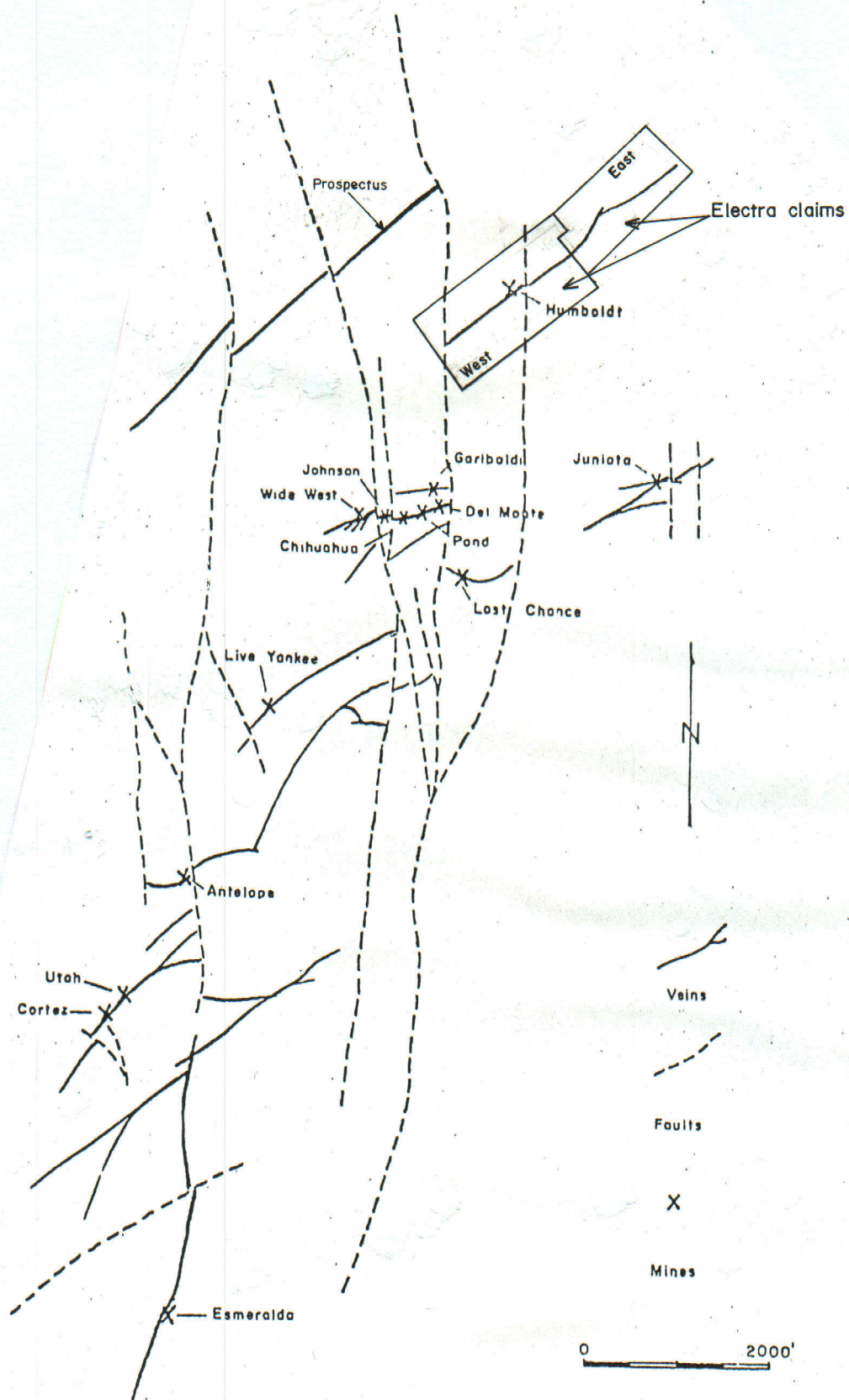




# AURORA DISTRICT - CLAIMS

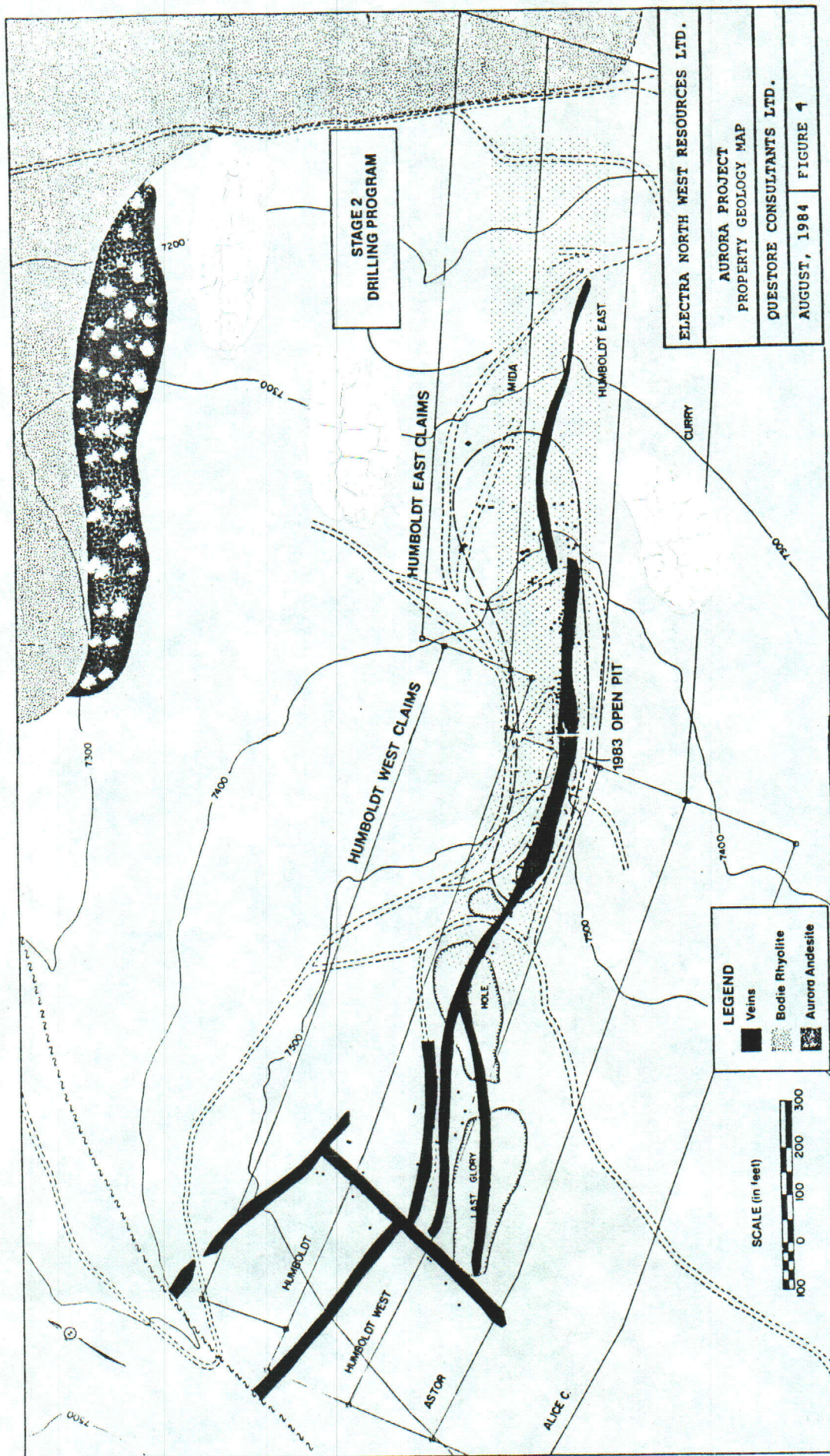






Relationship between ore deposits  
and north - south faults







East Humboldt openpit

East Humboldt vein - vuggy quartz, with Au



## GEOPROY S.A.

The texture of the quartz, type and intensity of alteration and high Au/Ag ratio in the top levels that changes rapidly in depth, all suggest that the vein has suffered little erosion since its formation, perhaps only 100 ft below the original hot-spring level, so that secondary enrichment, though present to some degree, was not a major factor. In depth, below 400 ft, it seems likely that the Au content will diminish somewhat, but the Ag will increase sharply, so potential exists for deeper exploration. Maps and sections are included overleaf.

Drilling in 1980-85 (over 170 reverse circulation, percussion and diamond-drill holes) along a strike length of 1,100 ft in the Humboldt East section and part of the West, with an average width of 50 ft and a depth of 260 ft, less ore that had been mined up to mid-1984, gave reserves of 940,000 s.t at a grade of 0.11 oz/s.t Au and 0.36 oz/s.t Ag, using a cut-off of 0.03 oz/s.t Au to define pay-limits. About 140,000 s.t with 0.11 oz Au and 0.12 oz Ag have been mined since that date, and run-of-mine values have confirmed those shown by drilling.

The Humboldt West claim has already been mined in glory-holes and stopes down to 400 ft level, but since the old miners took only the highest grade ore (over 0.2 oz), it is probable that at least 350,000 s.t of mineable ore remains.

#### Minerex' interest

Electra North West Resources of Vancouver (Pres. Doug Stelling) hold 7 claims over the Humboldt vein, subject to a 2-4% royalty to the original owners, and others nearby in their own name, surrounded by a mosaic of claims belonging to Golconda Resources and others - see maps overleaf. The Humboldt West group is leased from Golconda down to 400 ft below surface only, which is the level of the adit below numerous old stopes, and this needs to be renegotiated as mining may go deeper.

Electra have had a history of unsatisfactory partners - bank financing in 1982 failed, Centennial Minerals Ltd of Vancouver during 1984-85, and Global Resources Recovery Inc during 1986. The latter are currently the mine operators, with a hillside openpit (200 m long by 10 m wide at the bottom and up to 30 m deep), a standard crushing and heap leaching facility, but with novel resin extraction method for the Au. Gross inefficiency and muddle have caused Global to lose money on the operation, and they now seem willing to sell their share (Global are Hollywood types (!) rather than mining people).

It is proposed that Minerex buy Global's 50% interest, instal a normal Zn plant for Au and agglomeration equipment for fines, as well as provide management. The purchase price and capex would be of the order of \$1.3-1.6 million. Minerex and Electra have commissioned Performance Associates of Danville, CA, who are well-known mining consultants, to identify the problems that need solving and estimate the future operating costs and capex required to make the mine profitable. A preliminary analysis by Performance is appended, and shows total costs of \$19-20/s.t, including royalties and leased equipment, for a revenue of \$30-31/s.t treated one; for a throughput of 210,000 s.t/year, the cashflow would exceed \$2 million p.a. between the 2 owners.



**GEOPROY S.A.**

I have carefully checked their figures against those for other mines and find them to be correct for a well-run operation. The return for Minerex is not princely, but makes the company cash positive for the first time, and this in 1987, with good effect on share price.

Conclusion

I believe the Aurora purchase to be sound if:

- a reasonable price (under \$1.2 million) can be obtained from Global;
- Electra NW will permit Minerex a priority right-off of their capex against revenue;
- the 400 ft depth limitation on Humboldt West can be eliminated to permit deeper mining;
- the leasing of mining and crushing equipment (from an associate of Global) can be renegotiated, taking care of maintenance;
- the capex needed for a Zn-based Au plant, agglomeration equipment, new leach pads and tanks, stripping at the mine and, later on, more drilling, as estimated by Performance Associates, is not too high.

It would be useful to discuss combining operations with Golconda for the Prospectus and Humboldt veins, and discuss leasing rights with other claim holders in the district. Golconda have evaluated their vein, but not yet started mining.

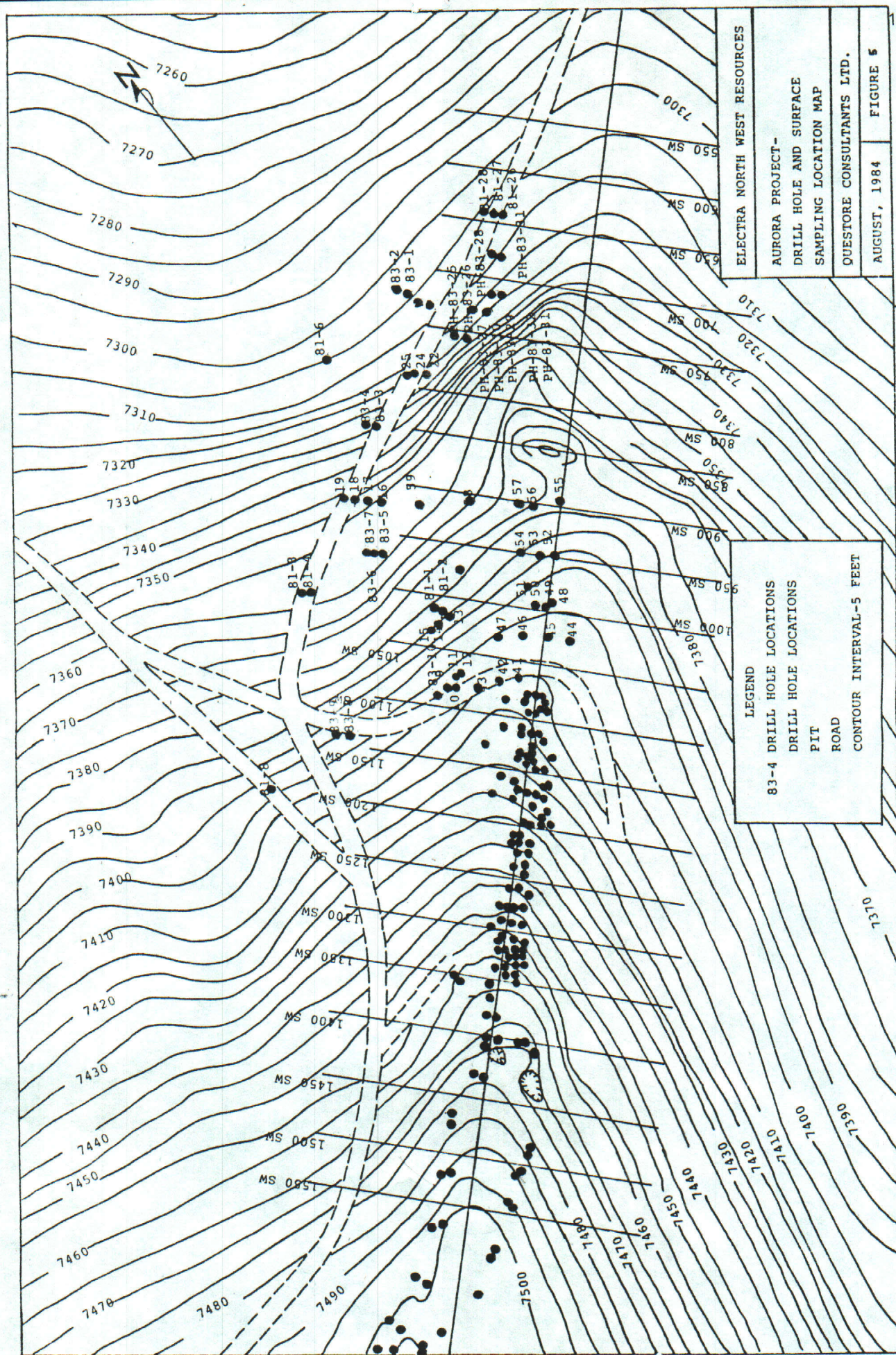
Final comment on finance

Minerex Resources now has a better flow of interesting prospects than in 1985 when only the rather modest Oest property was on line. But exploration consumes cash until a winner is discovered, when all investors gain; no cash, and all is lost. So Minerex needs more investment.

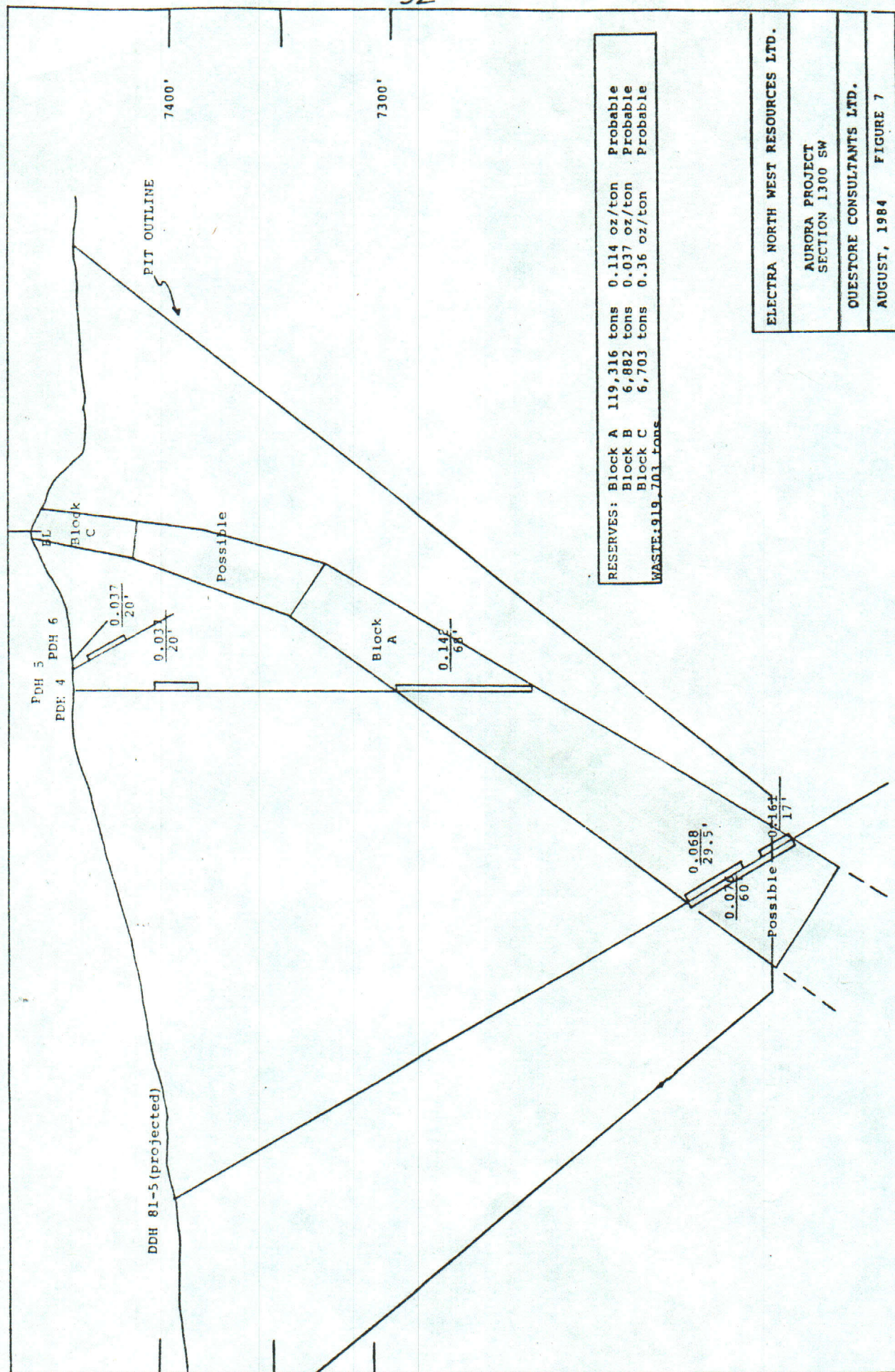
Question: Is Minerex a well-run vehicle for this type of speculation, and should more cash be invested?

Answer: Yes, if the investor is patient and watches the action closely.









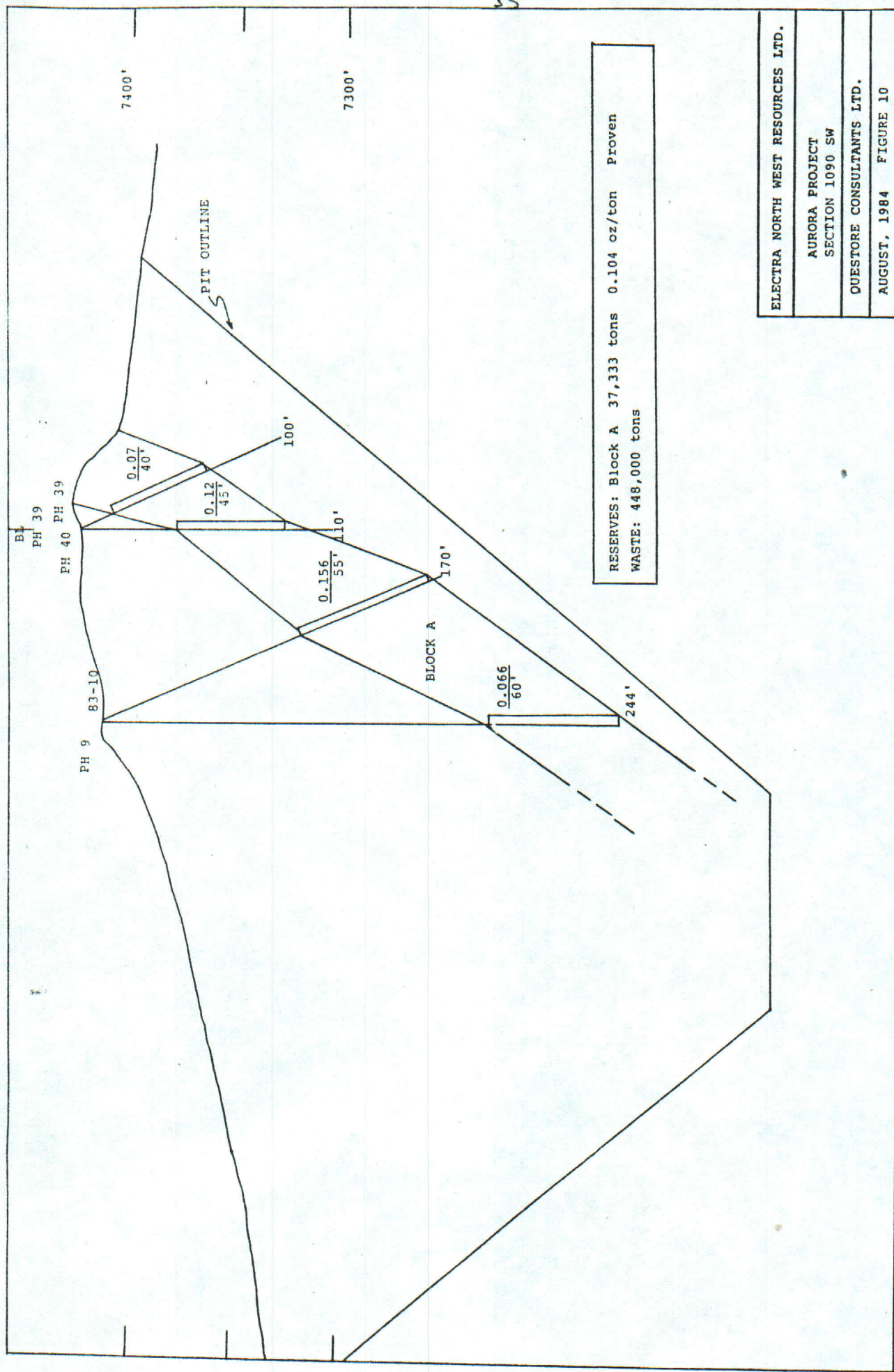
ELECTRA NORTH WEST RESOURCES LTD.

AURORA PROJECT  
SECTION 1300 SW

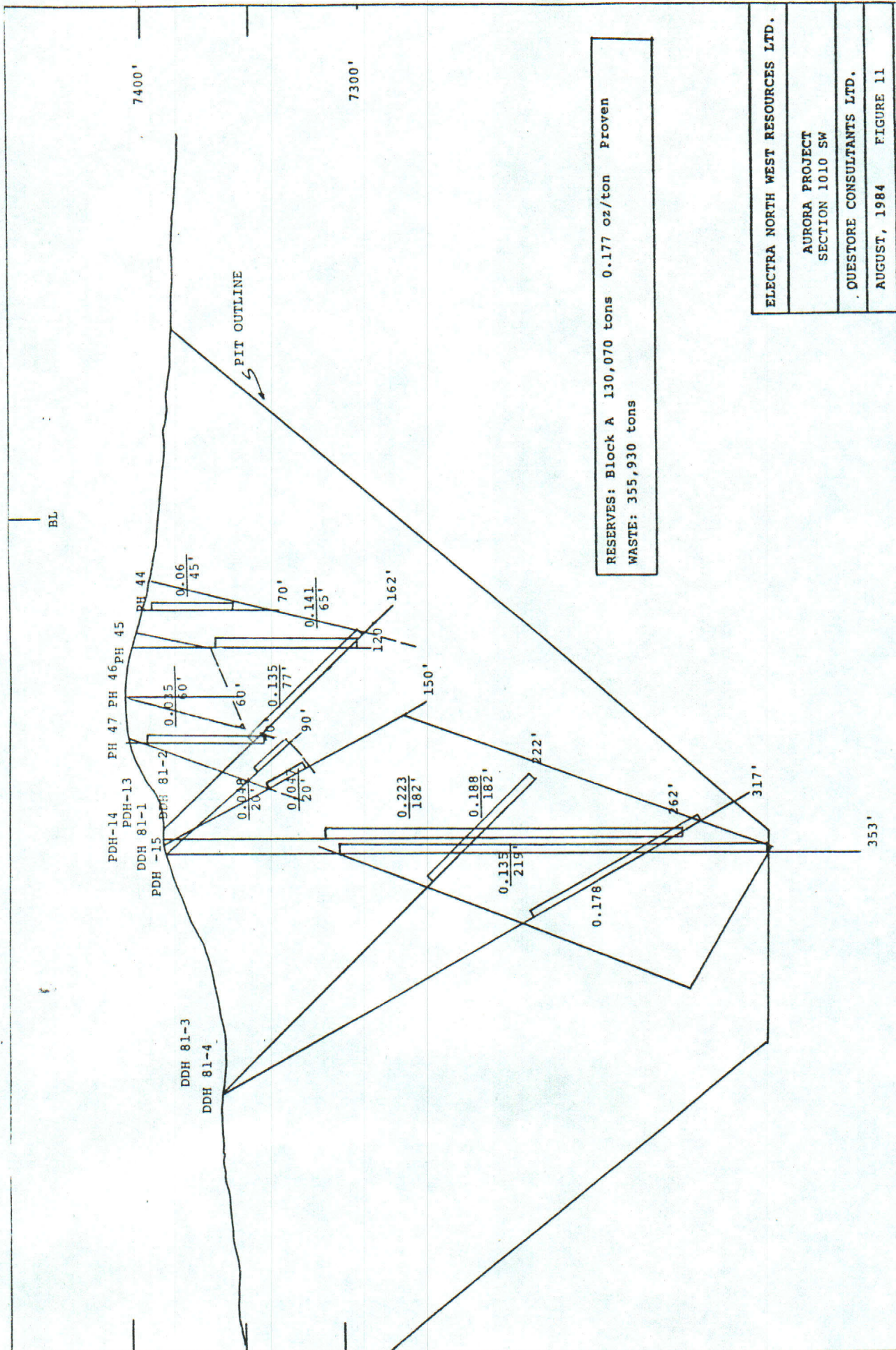
QUESTORE CONSULTANTS LTD.

AUGUST, 1984 FIGURE 7

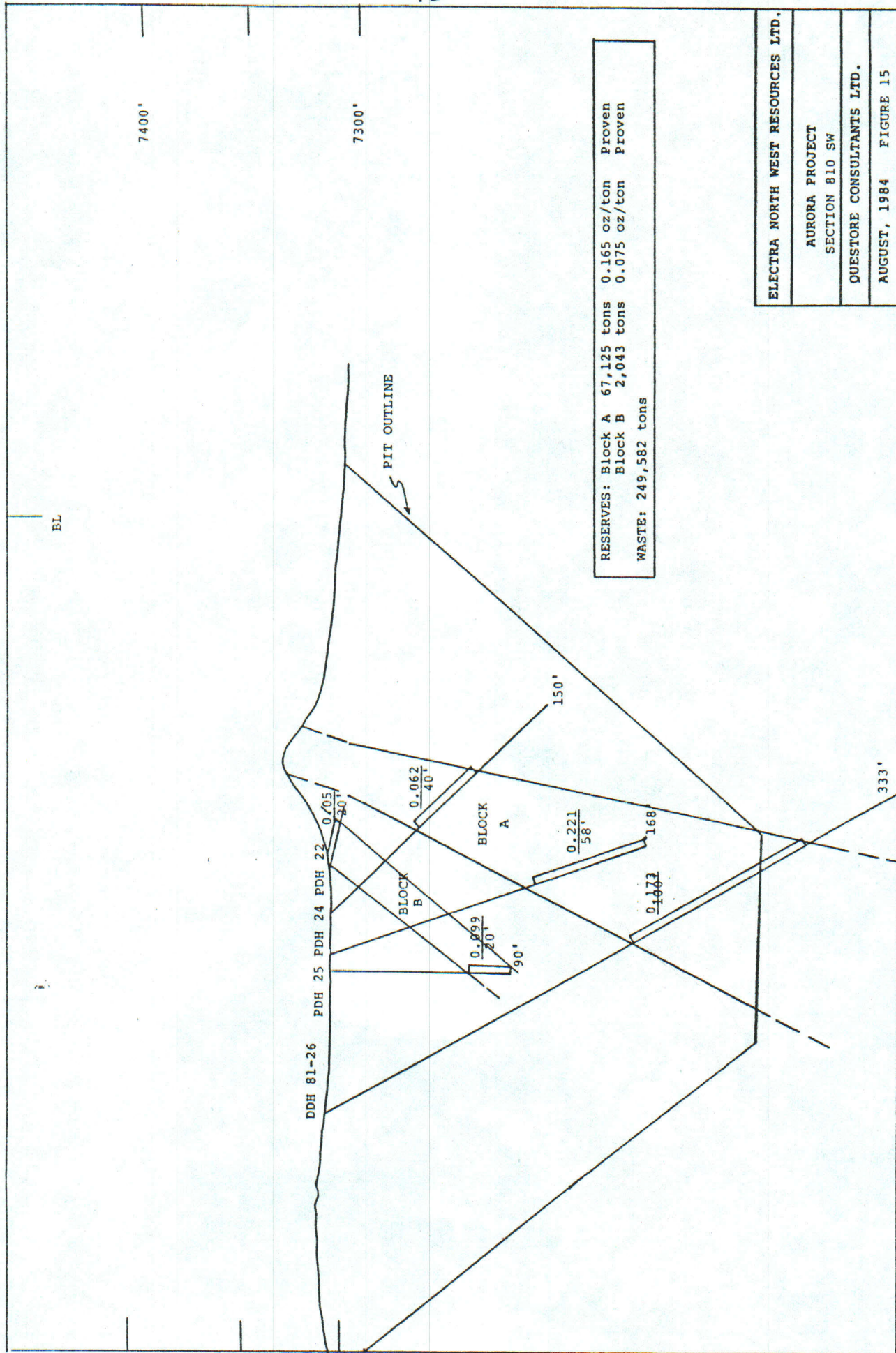




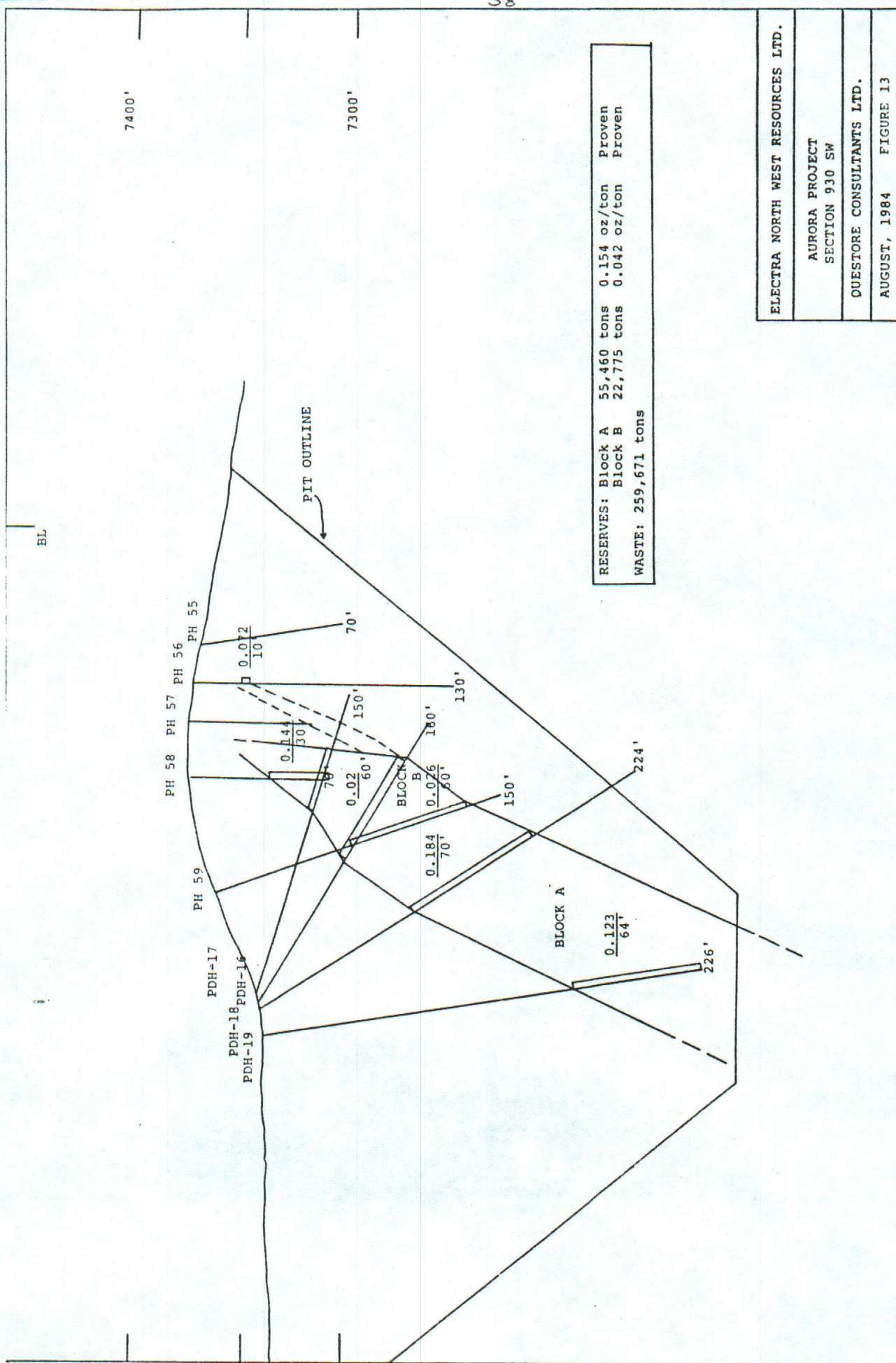












ELECTRA NORTH WEST RESOURCES LTD.
AURORA PROJECT
SECTION 930 SW
QUESTORE CONSULTANTS LTD.
AUGUST, 1984
FIGURE 13



## PERFORMANCE ASSOCIATES, INC.

PRELIMINARY COST ANALYSIS  
AURORA MINE

NOVEMBER 7, 1986

Performance Associates, Inc. has, for the past three months, been providing operational and technical advice and assistance to the Aurora Mine management. Amongst other tasks we have been asked to develop a mine plan and financial projection for the property. As the first step, in this regard, a drilling program has been initiated to define more precisely the ore body and related waste which will be encountered over the next three years, or thereabouts. This drill program will be completed before mid November.

Concurrently we are evaluating the comparative economics of three different recovery processes: 1) Carbon Columns, 2) Zinc Precipitation, and 3) Ion Exchange, the process which is currently employed.

At the request of Electra North West Resources Ltd. we have prepared the attached preliminary capital and operating cost estimates. Since the results of the drilling program, the comparative process study, and the mine plan are not yet available this preliminary projection is based on a number of assumptions, the most significant of which are listed below. We have based these assumptions on information currently available and on our experience and judgment. We have endeavored to maintain a conservative position in these assumptions. We are certain that when the mine plan is available, most of these assumptions will be modified. We believe that there is a reasonable likelihood that the study, when completed, will present an equally or more favorable picture.

## Assumptions:

1. The drilling program will identify ore grading .10 oz. per ton.
2. The drilling program will identify ore which can be mined at an annual rate of 175000 tons per year for three years with an average stripping ratio of 5.2:1 on an in place basis.
3. Mining will dilute the ore produced by 20% and 5% lost in mining. Therefore ore will be delivered to the pads at the rate of 210000 tons per year at a grade of .083 oz. per



ton. The effective stripping ratio will be 4.4:1.

4. The ion exchange process is continued in use. The plant is expanded from 180 GPM to 250 GPM. The plant will recover 70% of the gold placed on the heaps.
5. 100% of the ore will be cement agglomerated prior to placement on the heaps.
6. Gold will continue to be recovered from the resin at the Akwaklame refinery. The refinery will recover 98% of the gold for Aurora's account. The refiners fee will average \$13 per oz. This represents a substantial reduction from the \$30 per oz. rate which was being experienced early in 1986.
7. Ore will be crushed and agglomerated at the rate of 1086 tons per 10 hour shift, operating 5 shifts per week for 9 months.
8. The mine will produce ore and waste at a rate of 3781 tons per 10 hour shift operating 5 shifts per week for 11 months of the year. In addition during 3 of those months a second shift would be worked.
9. The leaching and process operations will operate at 280 GPM, 21.8 hour shifts per week, for 9 months, Mar 1 through Nov 30.
10. Operating performance is estimated at reasonably attainable levels for a soundly operated mining operation. We have not assumed exceptionally good performance, but we have assumed that results will significantly exceed those realized previously at the Aurora.
11. Mining and crushing will be conducted with the equipment presently on site. The existing fleet will require significant overhaul expenditures before the start of next year's mining season. Aurora management has estimated that \$340,000 will be required. This is not technically a capital expenditure, but it has been included with capital since it does represent a front end requirement. \$200,000 has been allowed for purchase of one 35 ton haulage truck.
12. The operations office will be moved from Hawthorne to the mine. While little more than a trailer is required some



undetermined amount must be spent to establish reliable communications from the mine site. Therefore \$100,000 has been allowed for the relocation.

13. We project that one new leaching pad will be required each year. \$83,000 has been allowed each year.
14. The pregnant pond requires expansion. \$43,000 is estimated for this purpose.
15. Since the mine plan and study is incomplete we have allowed a 30% contingency for capital spending.
16. Wage rates and benefits are estimated to be comparable with nonunion metal mines in Nevada.
17. Royalties are paid to Syskon at the rate of 20% of net cash generated, on a cumulative basis, to Tenneco and Summa at 6% NSR and to Electra at 3% NSR. A selling price of \$400 per ounce was assumed. Production was split evenly between the Syskon and Tenneco leases for this purpose.

West H

East H

We must emphasize that it will be necessary to improve the management practices over those employed at Aurora in prior years. Primarily the operation requires more mining know how and a stronger production orientation.



Optimistic case: \$400 Gold 77% Recovery & Recovery Op. 5 shift/wk Diluted Strip Ratio 4.0:1 In Place Grade .13 oz. per ton Mine productivity improved 10 % ITEM		PERFORMANCE ASSOCIATES, INC  PRELIMINARY PROJECTION AURORA MINE  UNIT COST DATA		
PRODUCTION DATA				
Tons of ore mined		214493		
Stripping Ratio	4			
Tons of waste removed		859725		
Total tons mined		1074657		
Grade of ore in place - Oz/ton	0.130			
Grade of ore mined (diluted)	0.108			
Ounces of gold placed on pads		23200		
Ounces of gold recovered		17500		
Gold Selling Price per Ounce	\$400			
CASHFLOW PROJECTION		PER TON ORE	PER TON ALL MATL	PER OZ
Revenue				
Gross Gold Revenue		\$32.64		\$400.00
Smelter Charges		\$1.06		\$13.00
Revenue net of Smelter Charges		\$31.57		\$387.00
Operating costs - Cash Basis				
Mining				
Drilling		\$1.12	\$0.22	\$13.71
Blasting		\$1.04	\$0.21	\$12.73
Loading		\$1.34	\$0.27	\$16.38
Hauling		\$2.00	\$0.40	\$24.54
Road and Dump Mtns		\$1.12	\$0.22	\$13.68
Supervision and General		\$0.76	\$0.15	\$9.37
Total Mining Costs		\$7.38	\$1.47	\$90.42
Processing				
Crushing and Agglomerating		\$2.72		\$33.30
Leaching and Recovery		\$1.48		\$18.09
Services		\$0.69		\$8.50
Total Processing Costs		\$4.89		\$59.88
General And Administrative				
Administration		\$1.67		\$20.48
Royalties		\$3.58		\$43.35
Equipment Lease Payment		\$1.84		\$22.49
Total G and A		\$7.04		\$86.32
Capital Spending		\$0.39		\$4.74
Grand Total Expenditures		\$19.69		\$241.37
Net Cash Generation				\$145.63