



SHAMROCK ZONE  
(QUARTZ BRECCIA)

FRED'S  
VEIN

RIDGE ZONE

1530  
LEVEL

1510  
LEVEL

PEEL ZONE

BREAK  
ZONE

1430  
LEVEL

CAMP

ORE STOCKPILE

MILL  
AND CAMP  
SITE

Cache Creek

TAILINGS POND

Oxo Creek

Peet Creek

ACCESS ROAD  
47 Km. to Hwy

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## ILLUSTRATIONS

Frontispiece - Aerial View of the Ketzra Project Looking NW.

View of the Ridge-Peel Zone Area Looking NW.

The 1430 Portal Area.

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## KETZA GOLD PROJECT

### SUMMARY

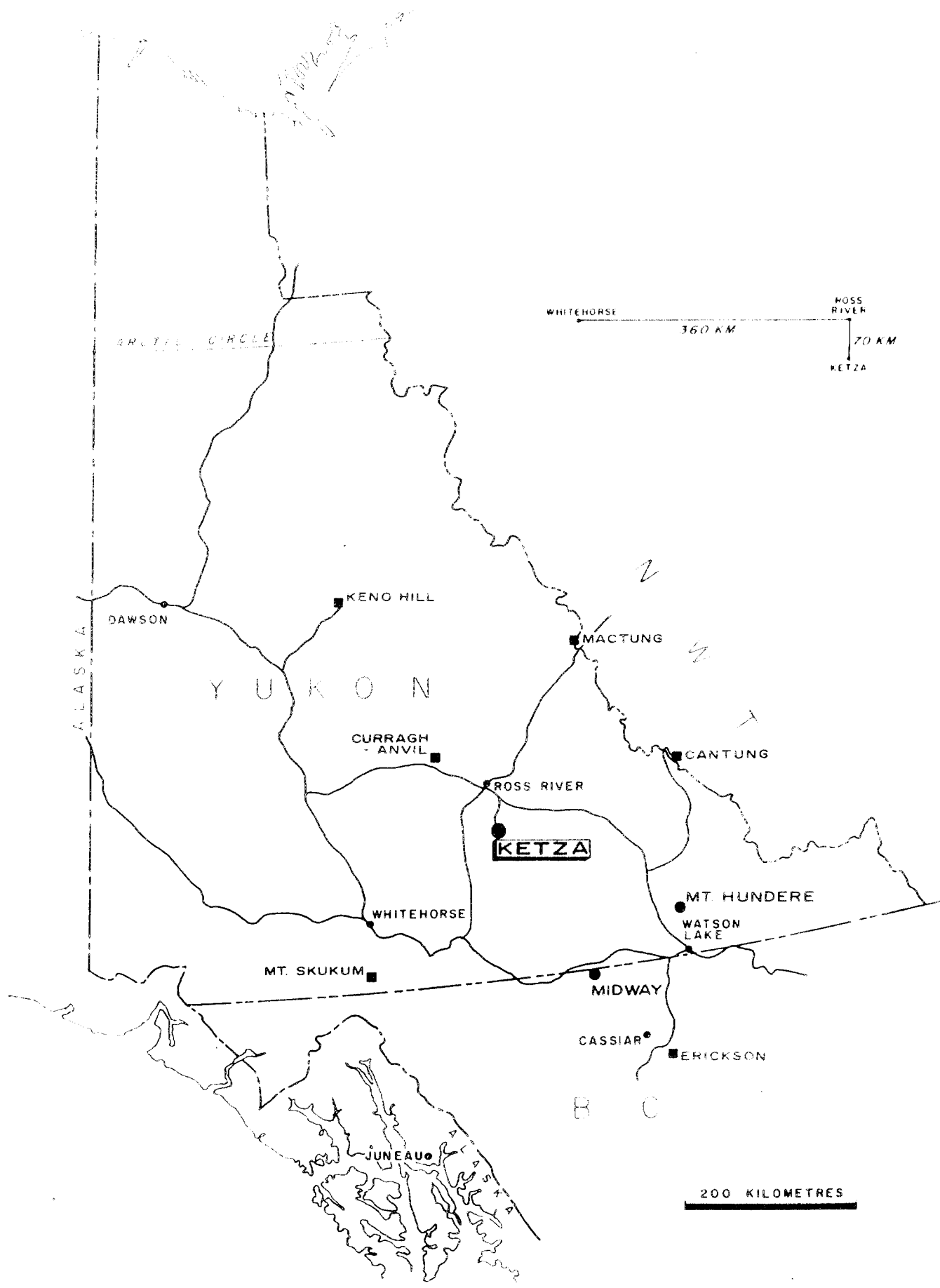
This report presents information on the Ketz River Gold Project - a 50/50 joint venture between CANAMAX RESOURCES INC., the managing partner, and PACIFIC TRANS-OCEAN RESOURCES LTD.

The property is located in central Yukon, 80 km by road south of Ross River.

During 1983-5, diamond drilling outlined an oxide reserve of 430,000 short tons grading 0.51 ounces gold per ton as well as additional metallurgically-difficult sulphide reserves at lower grades.

6,200 feet of underground exploration on three levels, 52,500 feet of diamond drilling in 200 holes to the end of 1986, metallurgical studies, engineering design work and environmental baseline studies currently underway are preparing the project for a feasibility study and a production decision in early 1987.

Results to date indicate that the mining method will involve substantial ground support and will be a critical variable in assessing the economics of the project. As a conservative, worst-case scenario, costs for square-set stoping have been used on a minimum reserve at diluted grades and only partial extraction of the ore. Even this highly downside-oriented scenario produces near-breakeven results at U.S. \$345/oz gold.



CANAMAX RESOURCES INC.  
 KETZA RIVER PROJECT  
 LOCATION

**SUMMARY** (cont'd)

A more realistic case involving a geologic reserve of 650,000 tons, mining costs at \$120 per ton (part square-set, open stope and cut and fill), 20% dilution at zero grade, and 70% extraction of the ore at 129,000 TPY yields an NPV at 10% of \$6 million (Canamax's share after tax and royalties), 56% IRR and a payback of 1.5 years.

It is felt that with tightly-controlled mining, the millfeed grade could realistically be kept at 0.50 ounces per ton with little loss in reserves. Further oxide ore will undoubtedly be discovered as exploration continues.

**LOCATION**

The minesite lies at the headwaters of Cache Creek in mountainous terrain at an elevation of 4,590 to 5,100 feet.

It is reached by a 29-mile access road which leaves the Campbell Highway 20 miles south of Ross River, a community of 300 people.

Whitehorse, population 15,000, the major supply center of the Yukon, is 180 miles by road, a 6-hour drive.

Faro, the recently-reopened lead-zinc producer, is situated 75 miles to the north.

## HISTORY

Conwest discovered and explored the Ketzta property in 1955-9. They drilled 75 holes which outlined a sulphide ore reserve of 75,000 tons grading .35 oz gold/ton.

Pacific Trans-Ocean optioned the property in late 1983 from Ketzta River Mines Limited, the Conwest holding company. For an expenditure of \$2.5 million, they could earn a 60% interest.

In early 1984, Canamax optioned one-half of Pacific Trans-Ocean's interest by undertaking to spend the first million and paying them \$100,000 cash.

Canamax spent the \$1 million by early 1985. The \$2.5 million mark was reached in late 1985. In November 1985, Conwest elected to keep a 20% Net Proceeds Interest leaving Canamax and Pacific with an equally-shared 100% equity interest.

By the end of 1986, some \$7.0 million will have been spent to bring the project to a production decision.

## PROJECT DESCRIPTION

The Ketzta Orebodies are unusual but not unique. They belong to the "pipe and manto" class of deposits which have yielded silver and gold bonanzas in the Western U.S., Mexico and elsewhere.

# KETZA RIVER PROJECT ZONE LOCATIONS

MISERY CREEK

TO KETZA RIVER

● SHAMROCK

PEEL CREEK

● BREAK

● RIDGE

● PEEL

CACHE CREEK

NORTH



Kilometres

**CANAMAX**  
RESOURCES INC.

**PROJECT DESCRIPTION** (cont'd)

At Ketzá, the massive sulphide and oxide ores contain only gold. Even more unusual in a glaciated terrain, oxide ores extend over 400 feet to depth. These oxides are the mainstay of our current plans to bring the Ketzá project to production.

**(a) Geology**

A lower Cambrian limestone unit hosts the main mineralized zones in a large upfaulted block. The limestone and the surrounding rocks are cut by numerous faults. The gold deposits occur in a broad zone or "aureole" of hornfels, indicating a blind intrusive heat source.

Two distinct types of mineralization are found in the limestone: massive to near-massive irregular sulphide-rich "pipes and mantos" and their oxidized equivalents.

The sulphide ores, composed of pyrrhotite, pyrite, arsenopyrite and gold, have so far proved to be more abundant but metallurgical testing shows them to be somewhat refractory and at least some of them are lower grade (average .28 ounces per ton).

The oxides, of which the Ridge, Peel Oxide and Break Zones are good examples, are higher grade (.5 ounces per ton) with excellent metallurgical recoveries (94-96%) using conventional cyanidation at relatively coarse grinds. Free gold occurs in limonite, scorodite, hisingerite and various amorphous iron oxides in these zones.

**PROJECT DESCRIPTION** (cont'd)

Because of their superior metallurgy and grades, current plans involve early development of the oxide ores while further testwork to develop economic extraction of gold from sulphide ores continues.

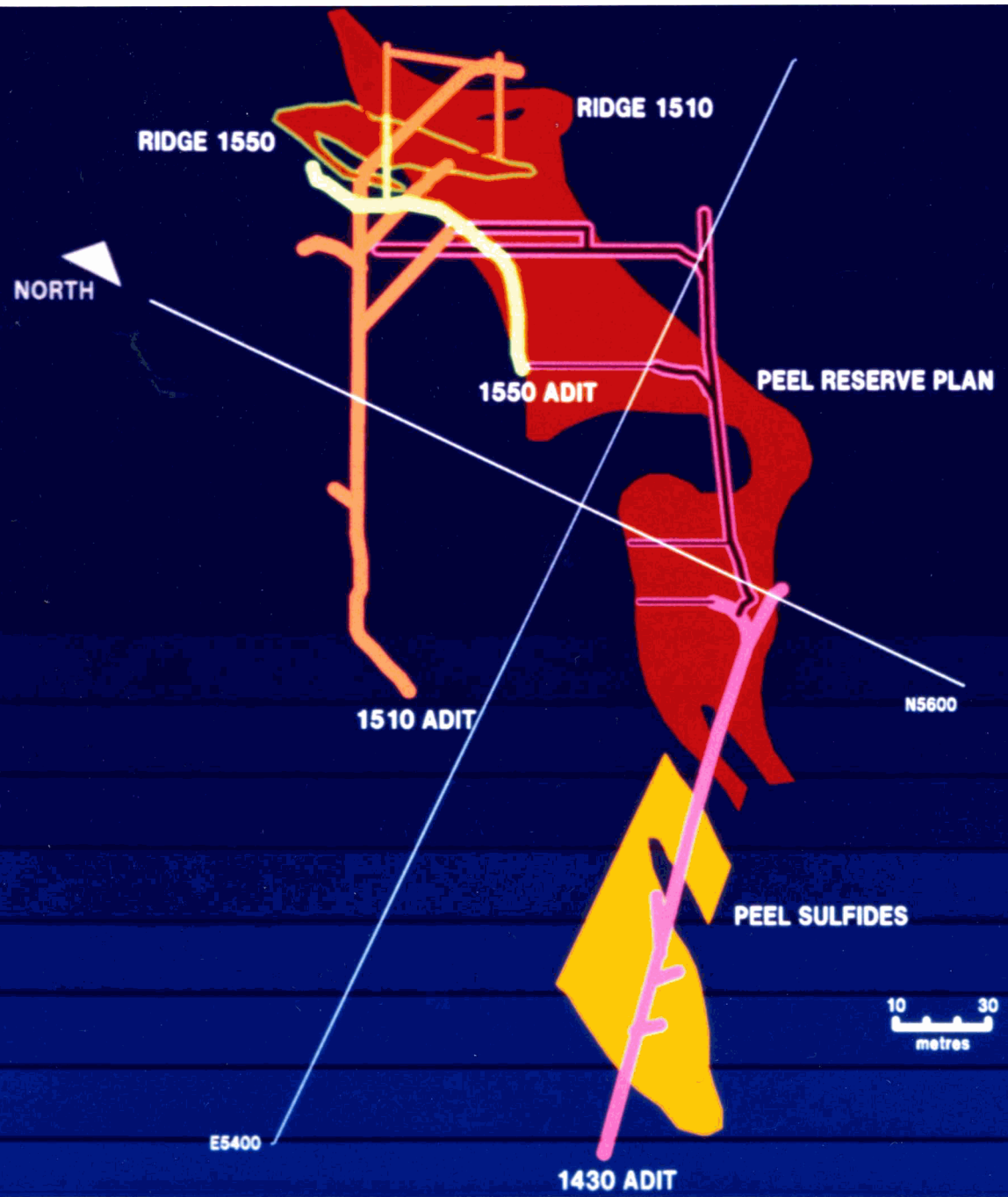
**(b) Work History**





To date, 39,400 feet of diamond drilling in 170 holes and 3,600 feet of underground development on three levels have been completed. A flowsheet and general arrangement drawings for a 350 TPD CIP mill have been prepared; water balance and tailings pond design work is underway. Fisheries studies, water quality, wildlife and other impact and baseline studies are being completed in support of a water license application to the Yukon Water Board sometime in September 1986. A table summarizing work through 1984-6 is presented below:

TABLE I: KETZA PROJECT WORK SUMMARY

<u>Year</u>	<u>Activity</u>	<u>Expenditure</u>	<u>Results</u>
1984	Mapping, EM/MAG Trenching, Geochem. Diamond drilling 7,900 ft/59 holes Metallurgy, Prelim. Cap & Op. cost est.	\$ 700,000	Sulphide Reserve in Peel Sulphide Zone increased to 507,000 tons @ .281 oz ton. Ridge Oxide Zone confirmed with 2 holes.
1985	Diamond drilling 60 holes/20,172 feet; 1,340 feet underground adit and drifts on 1510 meter level of Ridge Zone; prelimin- ary hydrology tailings site, capital & operating cost est.	\$1,750,000	Discover Peel Oxide Zone Drill indicated oxide reserve 430,000 tons @ .51 oz/ton. Total reserve 950,000 tons @ .36 oz/ton ox + sulf. Metallurgy, water qual., road upgrade prelim. site selected for tailings, mill & camp.
1986	U/G fan drill Ridge Zone 7 holes; 1550 level, 1510 level and 1450 level development in Peel & Ridge Zone 4,920 feet. Surface drilling on Peel Zone, Break Zone, Peel Fault, Shamrock Zone, 26,000 ft. in 100 holes. Road up- grade, complete prelim. engineering & testwork. Feasibility study.	\$5,100,000	Improved Peel & Ridge Zone reserve definition. Dis- covered new (Break & Shamrock) zones. Reserve grade & tons increased. Mining of Oxide Zone difficult due to ground conditions. 94-96% gold recovery from oxides. Further work required on sulphides. CN destruction by Inco method. (Arsenic in pond a potential problem.)

# KETZA RIVER PROJECT COMPOSITE PLAN



-  **SULFIDES**
-  **OXIDES**
-  **COMPLETED DEV.**
-  **PROPOSED DEV.**



(c) Reserves

Surface and underground diamond drilling to the end of 1985 established the following reserves classed as "drill-indicated geological" reserves:

**TABLE II: 1985 DRILL-INDICATED GEOLOGICAL RESERVE SUMMARY**

	<u>Ton</u>	<u>Grade</u>
Ridge Zone Oxides	130,000	.50 opt.
Peel Zone Oxides	<u>300,000</u>	<u>.52 opt.</u>
Total Oxide Reserves	<u>430,000</u>	<u>.51 opt.</u>
Peel Zone Sulphides	195,000	.48 opt.

These reserves were estimated using the sectional method, a specific gravity of 2.8 for the oxides and 3.3 for sulphides. Gold assay values were uncut in calculating average grades of intercepts; however, few assays exceed one ounce.

Muck, drift-wall sampling, detailed underground fan-drilling and close-spaced Bazooka drilling in 1986 is expected to confirm these reserves and yield at least 2 years of "proven" reserves.

Additional reserves are expected in the Ridge Zone below the 1510 level, in the newly-discovered Break Zone and elsewhere along the Peel Fault and Fred's Vein.

The new Shamrock Zone will be tested for high-grade (+.5oz) zones and as a large, low-grade target.

Underground excavation and drilling are confirming and extending the reserves. Detailed calculations remain to be completed, but the oxide reserve is now probably in excess of 500,000 tons at .5 ounces per ton and will increase as the lower portion of the Ridge Zone, the Break Zone, and other targets are tested further.

(d) **Mineability**

The underground openings on all levels indicate ground conditions which will require some level of ground support during mining operations. The current underground program is designed to identify optimum mining methods as well as define reserves.

Underground work on the Peel Zone and engineering studies by the Canamax Operations Group in Timmins will help define the mining methods and costs by the end of this program.

The grade distribution determined by sampling and drilling in the slusher drifts will define grade zones. Mineable grade will be based on these grade zones coupled with dilution estimates based on the mining method(s).

Additional mine testwork may be required at the end of the current underground program.

(e) **Metallurgy**

Metallurgical testwork on oxide material from the 1510 workings was completed in 1985-6. Continuous tests were run to develop a flowsheet. Further testing will be carried out on representative samples from the Peel Zone sub-drifts as they become available.

Recoveries of 94-96% are indicated for the oxide ores using CIP cyanide extraction.

Sulphide recoveries have proven difficult. With pre-aeration and high reagent levels, recoveries ranged from 63% to 78%. Witteck are currently evaluating sulphide metallurgy to determine further testing to be carried out.

(f) Mill

General arrangement drawings for a 350 TPD CIP cyanidation mill have been prepared by M. Ross. The mill will use a single 400 HP-driven 12'x7' SAG mill, conventional CIP circuitry and Cyanide destruction using the Inco method.

(g) Tailings Pond

Studies by Ker Priestman and Golder Associates have identified a suitable site with low seepage and high storage to dam volume ratios in a good location downslope of and close to the mine.

It is planned to build a single-stage, impermeable dam to minimize seepage and so it can be used for water balance control and storage during winter months.

A pond balance study by Ker Priestman will determine periodic discharge volumes.

Because the tailings will have acceptably low cyanide levels when discharged to the pond, the pond will essentially be clean and periodic water discharge should pose no problems environmentally.

(h) Camp

Depending on final labour force, a 100-110 person trailer camp will be set up on-site. Crews will rotate on a two-week shift basis. Several potentially-suitable camps are currently available for purchase.

(i) Access Road

The access road is being upgraded to a 30 mph, single-lane, gravelled, all-weather road by Golden Hill Ventures Ltd. of Whitehorse.

The work should be completed in October at a cost of \$700,000. Y.T.G. will refund \$250,000 of this cost and may provide additional funds jointly with the Federal government.

(j) Permitting

The water license granted by the Yukon Water Board is the key permit which regulates use and discharge of water. It is a time-consuming, somewhat unpredictable process which requires lengthy documentation, impact studies and a public hearing.

It is planned to make application as promptly as possible once the processing rates are known to eliminate the possibility of future delays. The permit conditions will specify a larger than design throughput to ensure its limits will not be exceeded.

(k) Public Relations

The project is seen as having significant economic benefit to Yukon. It has provided temporary employment in Ross River and we have taken care to communicate openly with the local community and the Ross River Indian Band.

(l) Operating and Capital Cost

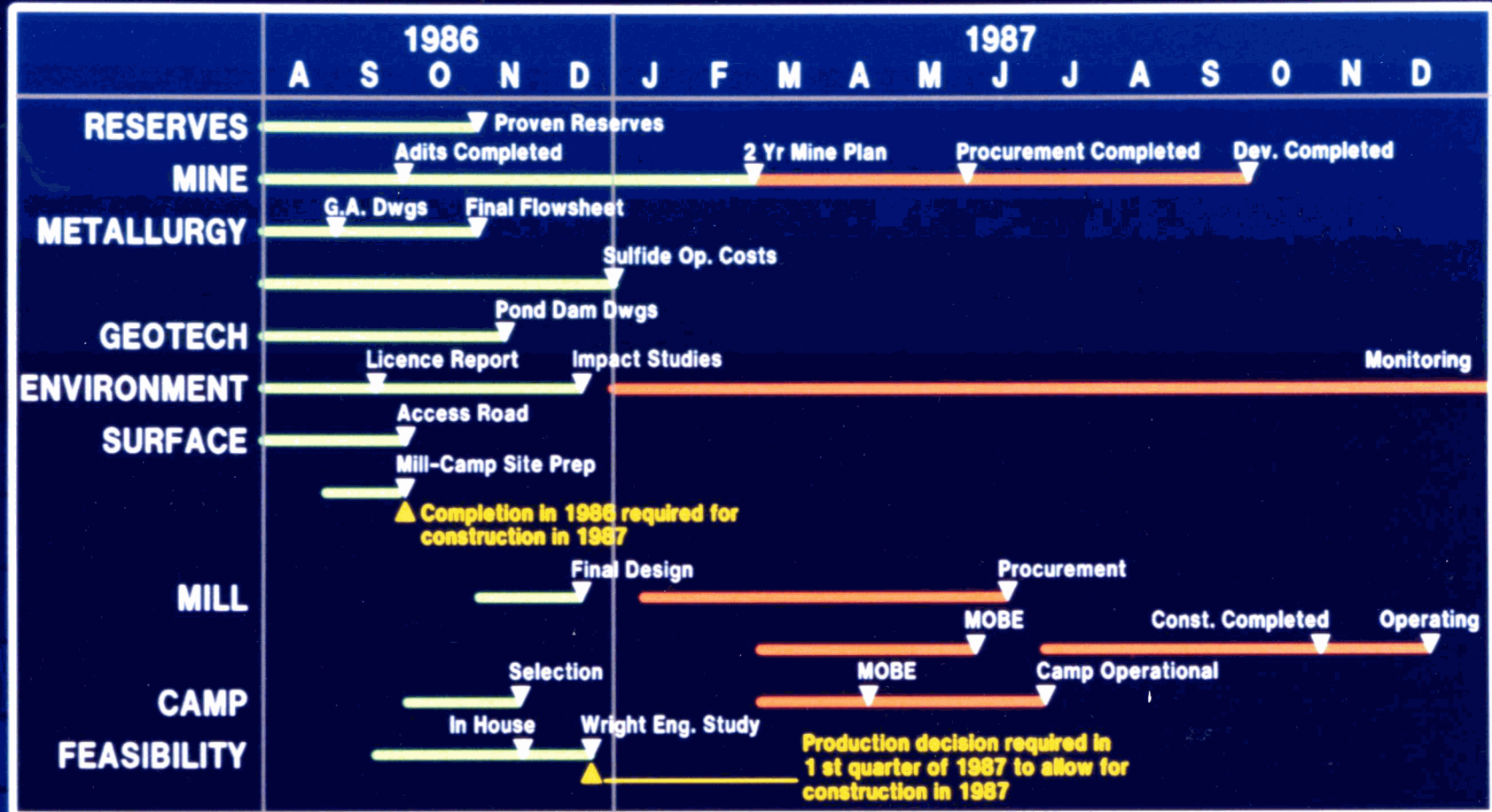
From January 1, 1987 to completion of construction and mill tune-up, including \$2 million working capital, a capital cost of \$13 million is estimated to construct a 350 TPD, 120,000 TPY mine and mill complex including powerhouse, camp, tailings pond, access road and water supply.

Operating costs are estimated at \$120-\$160/ton. Mining cost estimated at \$70 to \$100/ton of ore are the least well defined variable at this point.

# KETZA PROJECT SCHEDULE

— \$5.1m 1986 Budget

— \$11.0m 1987 Budget



PROJECT SCHEDULE

Some of the following key elements will be completed to allow a production decision in early 1987.

- Establish tonnage, grade and continuity in Ridge and Peel Oxide Zones. Some 500,000 tons @ .51 oz are drill indicated at this point with good continuity in the Peel Oxide Zone.
- Determine appropriate mining methods for both and estimate mining costs. A best-case/worst-case range of \$50-\$100 per ton of ore is indicated.
- Determine appropriate sizing of mine, mill, camp complex.
- Complete feasibility study (in-house) and review (Wright Engineers).

1986

To ensure that the project will, if proven feasible, proceed expeditiously to production by the end of 1987, the following items will at least be initiated in 1986:

- Application for water license (to be made in September/86).
- Road up-grade to allow year-round access with minimum delay during breakup (underway; Y.T.G. grant of \$250,000 assured).
- Site preparation and drainage to facilitate construction start-up (conditional on results of current work).
- Continue testwork, engineering design, etc. to ensure process, methods, costs are reasonably defined. Stop short of high-cost detailed final design, cost estimation and procurement stage.

PROJECT SCHEDULE (cont'd)1987

Given success, it is anticipated that a production decision will be made in early 1987. Detailed design, cost estimation, procurement, financing arrangements, initial staffing, contractor selection, water license approval, and various planning stages would be completed by June 1987.

Construction would commence by late June and be essentially complete by November. Mine development to full production would occur concurrently.

Additional exploration on the Break Zone, the Shamrock Zone and elsewhere would be conducted from the existing camp during the summer season.

1988

First year of full production at Ketz project.

FINANCIAL EVALUATION

The following parameters were used to evaluate the economic potential of the project, based solely on development and exploitation of the oxide reserves:

Gold price:	\$485 Canadian (\$345 U.S. x 1.40 exchange)
Recovery:	94-96%
Mill rate:	120,000 TPY; 90,000 TPY
Head grade:	.42 diluted; .5 undiluted
Reserves:	650,000 geological; 450,000 geological @ .51
Dilution:	20% at zero grade
Extraction:	70% of geological reserve
Mine Life:	4.5 years
Operating Cost:	\$120; \$160
Capital Cost:	\$13 million from January 1, 1987 \$20 million since inception

100% Equity

Deduct 20% NPI after \$20 million plus interest.

A summary of an analysis by R. Mazur is attached. As is typical of small projects, the Ketzra project is sensitive to gold price, grade and operating cost fluctuations. Thus, determining the mining cost remains an important variable.

The realistic mining case at \$120/ton and .47 millhead grade yields an NPV of \$5.2 million, payback of the \$13 million investment in 1.5 years and an IRR of 28%.

The possibility of offsetting high mining costs with higher millfeed grades can realistically be foreseen in this project as can increasing the oxide reserve through ongoing exploration.

**A P P E N D I X   I**

**Financial Evaluation - Ketzá Project**



# CANAMAX RESOURCES INC

SUITE 1100 - 181 UNIVERSITY AVE., TORONTO, CANADA M5H 3M7

CANAMAX  
RECEIVED  
AUG 19 1986  
LETTL  
VANCOUVER OFFICE

## MEMORANDUM

TO: W. Sellmer  
FROM: R. Mazur  
RE: Ketzra Financial Evaluation

DATE: August 15, 1986

HWS  
CCH  
FRH  
ACH  
SEP  
ENG  
SNB  
AAD  
LDF  
BY  
SAM  
RCP  
CO  
TAR  
FILE

### INTRODUCTION

Two scenarios are evaluated for the Ketzra River Project:

- Base Case - 546,000 mineable tons @ 0.42 opt; 120,000 tpy
- Low Case - 450,000 mineable tons @ 0.42 opt; 90,000 tpy

Sensitivity analyses have been conducted on the Base Case for the following parameters:

- Gold Price
- Grade
- Operating Cost
- Capital Cost

The sensitivity analysis treats all costs prior to a production decision on January 1, 1987 as sunk. The sunk cost analysis is comparable to the analysis of the Bell Creek project by Mazur & Tredger dated June 11, 1986. A full cost analysis is also provided.

### ASSUMPTIONS

A copy of your memo dated August 12, 1986 is attached which outlines the assumptions of the evaluation. The analysis is on a 100% equity, constant 1986 Canadian dollar basis.

### RESULTS

Work sheets from the computer evaluation are attached.

The following table summarizes the financial results.

	<u>Full Cost</u> <u>(excl. acquisition)</u>	<u>Sunk Cost</u> <u>(since prod. decision)</u>
<u>Base Case</u>		
Mine Life (yrs)	4.55	4.55
Capital Investment (000\$)	10,775	6,500
Cash Operating Cost (Cdn. \$/oz)	253	253
NPV @ 10% (000\$)	3,470	9,170
DCFROR (%)	24.2	77.6
Payback (yrs)	1.9	1.1
Average Annual Cash Flow (000\$)	5,500	5,500
Average Annual Ounces Produced	23,700	23,700

	<u>Full Cost</u> <u>(excl. acquisition)</u>	<u>Sunk Cost</u> <u>(since prod. decision)</u>
<u>Low Case</u>		
Mine Life (yrs)	5	5
Capital Investment (000\$)	10,775	6,500
Cash Operating Cost (Cdn. \$/oz)	304	304
NPV @ 10% (000\$)	70	4,645
DCFROR (%)	10.3	41.1
Payback (yrs)	3.3	1.9
Average Annual Cash Flow (000\$)	3,200	3,200
Average Annual Ounces Produced	17,800	17,800

The accompanying graph illustrates the sensitivity of the net present value of the project to percentage changes (up to  $\pm 20\%$ ) in grade or price, operating cost and capital cost. Grade or price changes from the base case assumptions have the greatest impact on the economics of the project followed by operating cost. The project is relatively insensitive to capital cost.

### CONCLUSIONS

Both cases provide adequate economics for a reasonable return on investment. Sensitivity analysis indicates that gold price or grade variances have the greatest impact on project economics. Grade control and dilution will be key operating parameters which will have significant impact on the profitability of the project.

R.J. Mazur

cc: P. Tredger

# CANAMAX RESOURCES INC.

601 - 838 THURLOW STREET, VANCOUVER, B.C., CANADA V6E 3L6

## MEMORANDUM

DATE: August 12, 1986

TO: R. Mazur

FROM: H.W. Sellmer

SUBJECT: KETZA FINANCIALS

*Handwritten notes:*  
 CMX → CMX Corp.  
 9/12/86  
 [Signature]

Further to our conversation of August 11th, the following are basic assumptions to use in running some financials - ROI, NPV, DCFROR, \$OZ PRODUCED and PAYBACK - on the Ketzta Project:

Reserve - Peel & Ridge Oxide Zone - 500,000 @ .51 opt.  
 Break Zone - 50,000 @ .5 opt.  
 Other - 100,000 @ .5 opt.

Total Reserve 650,000 @ .50 opt.

Dilution: 20% @ zero grade 780,000 tons @ .42 opt.  
 Extraction: @ 70% 546,000 tons @ .42 opt.

Milling Rate: 350 TPD x 360 days = 120,000 tpy.

Mine Life: 4.55 years.

Gold Price: US \$350/oz. Exchange: \$1 US = \$1.35 Cdn. \* \$485

Recovery: 94%

Capital Cost: from day 1 = \$20 million  
 from January 1, 1987 = \$13 million (use in evaluation as 1986 costs are sunk).

### Operating Costs:

Milling Costs	-	\$26.36		
Mining Costs	-	40.00	60.00	80.00
G & A	-	18.50		
H.O. & Refin.	-	15.00		
			<hr/>	<hr/>
		\$99.86	\$119.86	\$139.86

Do runs on above case(s), sensitivity on:

gold price at \$320, \$370;

grade @ .52 diluted;

operating costs @ \$120/ton, \$140/ton on base case;

reserve at 450,000 tons @ .42 diluted millfeed grade; 90,000

TPY thruput on 450,000t (use \$120,00/ton operating cost, same grade and recoveries).

*Handwritten:* AT

- 2 -

Summarize: cost/ounce operating;  
cost/ounce including \$13 & \$20 million capital recovery;  
ounces/year;  
cash flow/year;  
annual earnings.

Compare with other projects on financial basis; \$/ounce cost to Canamax,  
etc.

Let me know if you have any questions or suggestions as to what else to do.

H. W. Sellmer.  
H.W. Sellmer

BWS/bm

NETZA FINANCIAL EVALUATION (1986 CDN\$) - BASE CASE

CASH FLOW	1984	1985	1986	1987	1988	1989	1990	1991	1992	TOTAL
NET OPERATING PROFIT	0	0	0	457	5489	5489	5489	5489	2561	24973
CONNEX NPI	0	0	0	0	0	0	549	549	256	1354
FEDERAL INCOME TAX	0	0	0	0	0	0	368	1205	519	2092
YUKON INCOME TAX	0	0	0	0	0	0	230	335	144	709
YUKON MINING TAX	0	0	0	0	0	0	0	0	0	0
FIXED ASSETS - NET	0	0	0	4600	0	0	0	0	0	4600
EXPLORATION EXP	700	1300	2275	1900	0	0	0	0	0	6175
RESOURCE PROPERTY	0	0	0	0	0	0	0	0	0	0
OPENING CASH	-700	-1300	-2275	-6043	5489	5489	4341	3401	1642	10044
CLOSING CASH	0	-700	-2000	-4275	-10318	-4829	660	5001	8402	0

FINANCIAL RESULTS

FULL COST		COST PER OUNCE		EFFECTIVE TAX RATE (%) -	
NPV@ 10%	\$0.470	CASH OPERATING-	\$253	FEDERAL INCOME TAX	16.28%
IRF	24.21	CAPITAL	\$100	YUKON INCOME TAX	5.52%
PAYBACK	1.5 YRS	TOTAL	\$353	YUKON MINING TAX	0.00%
					21.80%

SUMI COST

SUMI COST		COST PER OUNCE	
NPV@ 10%	\$9.170	CASH OPERATING-	\$253
IRF	27.61	CAPITAL	\$60
PAYBACK	1.1 YRS	TOTAL	\$314

# Base Case

1/2 of project only!

INPUT SECTION	CMI SHARE									
	1984	1985	1986	1987	1988	1989	1990	1991	1992	TOTAL

NAMES OF PRODUCTS-  
CU  
AU  
AG

TONS MILLED  
CU  
AU  
AG

GRADE  
CU  
AU  
AG

RECOVER:  
CU  
AU  
AG

OUNCES PRODUCED  
CU  
AU  
AG

PRICE PER UNIT-  
CU  
AU  
AG

GROSS REVENUE-  
CU  
AU  
AG

TOTAL

OPERATING COSTS-

NET OPERATING PROFIT

CEE

CDE-

*Worst of .47 opt.*

*low* **0.42** *.47*

*low*

**1100**

**120**

*47 grade and #120/ton opt gives slightly better results than .42 and #100/ton*

CU	0	0	0	0	0	0	0	0	0	0
AU	0	0	0	5000	60000	60000	60000	60000	28000	273000
AG	0	0	0	0	0	0	0	0	0	0
CU				<b>0.42</b>	0.42	0.42	0.42	0.42	0.42	
AU				94%	94%	94%	94%	94%	94%	
AG										
CU	0	0	0	1974	23688	23688	23688	23688	11054.4	107780.4
AU										
AG										
CU	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
AU	\$485.00	\$485.00	\$485.00	\$485.00	\$485.00	\$485.00	\$485.00	\$485.00	\$485.00	\$485.00
AG	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
CU	0	0	0	0	0	0	0	0	0	0
AU	0	0	0	957.39	11488.68	11488.68	11488.68	11488.68	5361.384	52273.49
AG	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	957.39	11488.68	11488.68	11488.68	11488.68	5361.384	52273.49
OPERATING COSTS-	0	0	0	500	6000	6000	6000	6000	2800	27300
NET OPERATING PROFIT	0	0	0	457.39	5488.68	5488.68	5488.68	5488.68	2561.384	24973.49
CEE	700	1500	2275	1900	0	0	0	0	0	0

CLASS 10 MINING- ADDITIONS	0								
DISPOSITIONS	0								
CLASS 10 PROCESS- ADDITIONS	0								
DISPOSITIONS	0								
CLASS 10 TOTAL- ADDITIONS	0	0	0	0	0	0	0	0	0
DISPOSITIONS	0	0	0	0	0	0	0	0	0
CLASS 12- ADDITIONS	0								
DISPOSITIONS	0								
CLASS 28 MINING- ADDITIONS	0	0	0	2000					
DISPOSITIONS	0								
CLASS 28 PROCESS- ADDITIONS	0	0	0	2600					
DISPOSITIONS	0								
CLASS 28 TOTAL- ADDITIONS	0	0	0	4600	0	0	0	0	0
DISPOSITIONS	0	0	0	0	0	0	0	0	0
INTEREST RATE	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
INV TAX CRED RATE	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10	\$0.10
INTERIM CASH FLOW	-700	-1300	-2275	-6042.61	5488.68	5488.68	5488.68	5488.68	2561.384
FEDERAL TAX RATE	\$0.36	\$0.36	\$0.36	\$0.36	\$0.36	\$0.36	\$0.36	\$0.36	\$0.36
COSTS ELIGIBLE FOR ITC	0	0	0	4600	0	0	0	0	0
CURRENT (IF MAX) ITC	0	0	0	460	0	0	0	0	0
CUMULATIVE MAX ITC									
CLASS 10	0	0	0	0	0	0	0	0	0
CLASS 28	0	0	0	460	460	460	460	460	460
CEE FOR FUTURE MINING TAX	0	0	0	1900	0	0	0	0	0

SENSITIVITY ANALYSIS (SUNK COSTS)

SOLD PRICE		GRADE				
PRICE	IRR	NPV @ 10%	IRR	NPV @ 10%	IRR	
1.348	300	-8.72	0.32	\$2,886	0.32	30.02
1.429	350	20.42	0.37	\$6,014	0.37	53.52
1.732	400	43.32	0.42	\$9,170	0.42	77.62
2.264	450	63.02	0.47	\$11,754	0.47	98.32
2.545	500	80.82	0.52	\$14,425	0.52	ERR
2.894	550	101.32				
4.400	600	ERR				

OPERATING COST

	NPV @ 10%	IRR	
80	\$11,397	80	94.92
100	\$9,170	100	77.62
120	\$6,404	120	56.42
140	\$3,718	140	36.02
160	\$174	160	11.32

given current price @ \$525/oz.

operating cost @ \$120-140/ton

head grade @ .42-.52 oz/ton miller

the project looks good but is very sensitive to changes in gold price, grade and operating costs; somewhat less so to capital cost changes.

at low price of .42 and op cost of \$150/ton it barely gets interest on the \$13 million investment from 1975 on. It's gold price of \$400/ounce





KETZA FINANCIAL EVALUATION (1986 CDN\$) - LOW CASE

CASH FLOW	1984	1985	1986	1987	1988	1989	1990	1991	1992	TOTAL
NET OPERATING PROFIT	0	0	0	357	3217	3217	3217	3217	2859	16083
CONWEST NPI	0	0	0	0	0	0	0	322	286	608
FEDERAL INCOME TAX	0	0	0	0	0	0	0	0	178	268
YUKON INCOME TAX	0	0	0	0	0	0	0	58	172	255
YUKON MINING TAX	0	0	0	0	0	0	0	0	0	0
FIXED ASSETS - NET	0	0	0	6500	0	0	0	0	0	6500
EXPLORATION EXP	700	1300	2275	0	0	0	0	0	0	4275
RESOURCE PROPERTY	0	0	0	0	0	0	0	0	0	0
OPENING CASH	-700	-1300	-2275	-6143	3217	3217	3217	2837	2223	4177
CLOSING CASH	0	-700	-2000	-4275	-10418	-7201	-3985	-768	2069	0
	-700	-2000	-4275	-10418	-7201	-3985	-768	2069	4292	4177

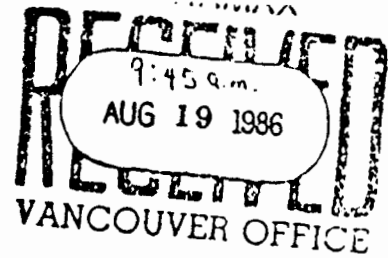
FINANCIAL RESULTS

		COST PER OUNCE	EFFECTIVE TAX RATE (%) -
FULL COST			FEDERAL INCOME TAX 5.70%
			YUKON INCOME TAX 5.42%
			YUKON MINING TAX 0.00%
NPV@ 10% -	\$70	CASH OPERATING- \$304	
		CAPITAL - \$121	
IRR -	10.0%	TOTAL - \$425	11.12%
PAYBACK -	3.3 YRS		

SUNK COST

		COST PER OUNCE
NPV@ 10% -	\$4,645	CASH OPERATING- \$304
		CAPITAL - \$73
IRR -	41.1%	TOTAL - \$377
PAYBACK -	1.9 YRS	

CANAMAX RESOURCES INC.



=====

TO: Walter Sellmer
FROM: Jim Smith
SUBJECT: Projected Mine Operating Costs - Ketza Project
DATE: August 18, 1986

=====

GENERAL

I thought it might be useful to follow up my comments of August 11, 1986 with some estimates of what mine operating costs could look like, employing several different methods.

SUMMARY

- 1. It is most likely that ground conditions will dictate that several different methods will be required or permitted.
2. The worst case scenario would require that the entire deposit be mined by square set methods.
3. The most likely scenario could be the following: a) Ridge Zone - Tight cut and fill, some square set. b) Peel Zone - Tight cut and fill, some square set. - Some open.
4. In all cases, it is presumed that all areas would require filling, and that we could have some form of hydraulic backfill available.
5. Maximum throughput for 100% square set is 96,000 tons/year, and for tight cut and fill is 129,000 tons. If, you could mine 100% open, the throughput could reach 178,000 tons/year.

Handwritten initials and distribution list: HWS, CJH, FRH, ACH, SEP, EKB, SMB, AAD, LRF, BYK, BSM, HCP, CC JAH, TOR, FILE

6. Mining by either tight cut and fill or square set would require total development of all reserves prior to production.

Signed:

A handwritten signature in cursive script that reads "Jim Smith".

J.B. Smith  
Manager of Mining Operations

JBS:ah

COMPARISON OF STUDY PARAMETERS

	S.S.	Tight C&F	Open C&F	1/3 Each
Productivities in Stope	10 <sup>1</sup>	15	33	25
Tramming Productivities	120	120	120	120
On-Going Development (per ton)	6.50	6.50	6.50	6.50
Timber Consumption (bd. ft / ton)	30	-	-	10
On-Going U/G D.D.	1.88	1.88	1.88	1.88
Work Cycle Mining (# Continuous Shifts)	2	2	2	2
Total Work Shifts/Year	686	686	686	686
Cost of Power/KW.Hr.	.12	.12	.12	.12
Staffing - Mine	72	69	56	67
- Plant	13	13	13	13
- Mill	22	22	21	22
- Admin.	6	6	6	6
	<u>113</u>	<u>110</u>	<u>96</u>	<u>108</u>
Milling Cost (M.Ross)*	27.83	24.54	24.13	24.54

\*Adjusted for slightly different wage rates, and added cost of operating a backfill plant.

<sup>1</sup>Keno Hill stope productivities at 4 Tons/MS.

108 + <sup>#</sup>12 ho admin and refining in most likely scenario.  
to yield thruput of about 120,000 TPY.  
see relevant financial run thru.

BASE CASE SUNK COST SENSITIVITY (NPV @ 10%)

OPERATING COST (\$ PER TON)

GRADE (OZ./TON)	AR143	\$100	\$110	\$120	\$130	\$140	\$150	\$160
0.35		\$4,959	\$3,354	\$1,757	(\$196)	(\$2,128)	(\$4,061)	(\$5,993)
0.40		\$7,903	\$6,511	\$5,369	\$3,847	\$2,277	\$345	(\$1,588)
0.45		\$10,547	\$9,234	\$8,289	\$6,900	\$5,507	\$4,312	\$2,741
0.50		\$13,289	\$12,117	\$10,912	\$9,605	\$8,673	\$7,289	\$5,897
0.55		\$15,939	\$14,776	\$13,514	\$12,449	\$11,261	\$9,970	\$9,057
0.60		\$18,574	\$17,422	\$16,263	\$15,101	\$13,939	\$12,777	\$11,593

LOW CASE SUNK COST SENSITIVITY (NPV @ 10%)

OPERATING COST (\$ PER TON)

GRADE (OZ./TON)	AR143	\$100	\$110	\$120	\$130	\$140	\$150	\$160	\$170	\$180	\$190	\$200
0.30		(\$75)	(\$1,661)	(\$3,248)	(\$4,835)	(\$6,422)	(\$8,008)	(\$9,595)	(\$11,182)	(\$12,768)	(\$14,355)	(\$15,942)
0.35		\$3,400	\$1,955	\$367	(\$1,218)	(\$2,805)	(\$4,391)	(\$5,978)	(\$7,565)	(\$9,152)	(\$10,738)	(\$12,325)
0.40		\$5,838	\$4,915	\$3,629	\$2,399	\$812	(\$774)	(\$2,361)	(\$3,948)	(\$5,535)	(\$7,121)	(\$8,708)
0.45		\$8,437	\$7,299	\$6,157	\$5,251	\$4,033	\$2,747	\$1,256	(\$331)	(\$1,918)	(\$3,504)	(\$5,091)
0.50		\$10,532	\$9,454	\$8,752	\$7,618	\$6,476	\$5,586	\$4,385	\$3,161	\$1,699	\$113	(\$1,474)
0.55		\$12,797	\$11,823	\$10,832	\$9,759	\$9,067	\$7,937	\$6,795	\$5,653	\$4,721	\$3,394	\$2,143
0.60		\$14,973	\$14,019	\$13,065	\$12,096	\$11,108	\$10,059	\$9,382	\$8,255	\$7,114	\$5,973	\$5,057

## A P P E N D I X    I I

Ketza Project - General Layout

Plan of Workings and Drill Holes

1550 Level

1510 Level

1430 Level

1450 Level

Section 1+20E Ridge Zone

Section 2+40E Peel Zone

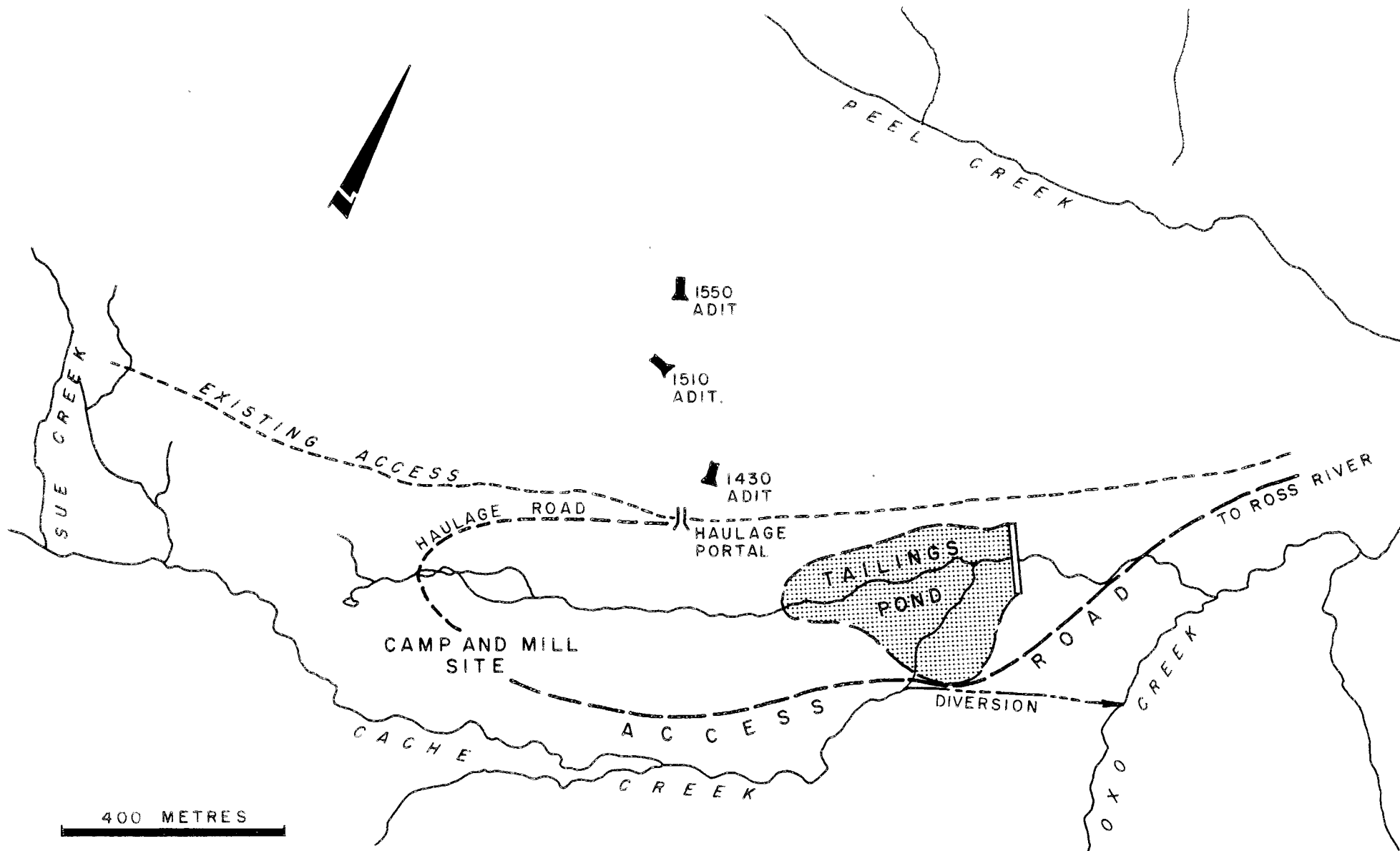
Section 2+70E Peel Zone

Section 0+00N Peel Zone

Section 0+25N Peel Zone

Section 1+00N Peel Zone

Section 1+50N Peel Zone



CANAMAX RESOURCES INC.  
 KETZA RIVER PROJECT  
 GENERAL LAYOUT

2+00 W

0+00

2+00 E

4+00 E

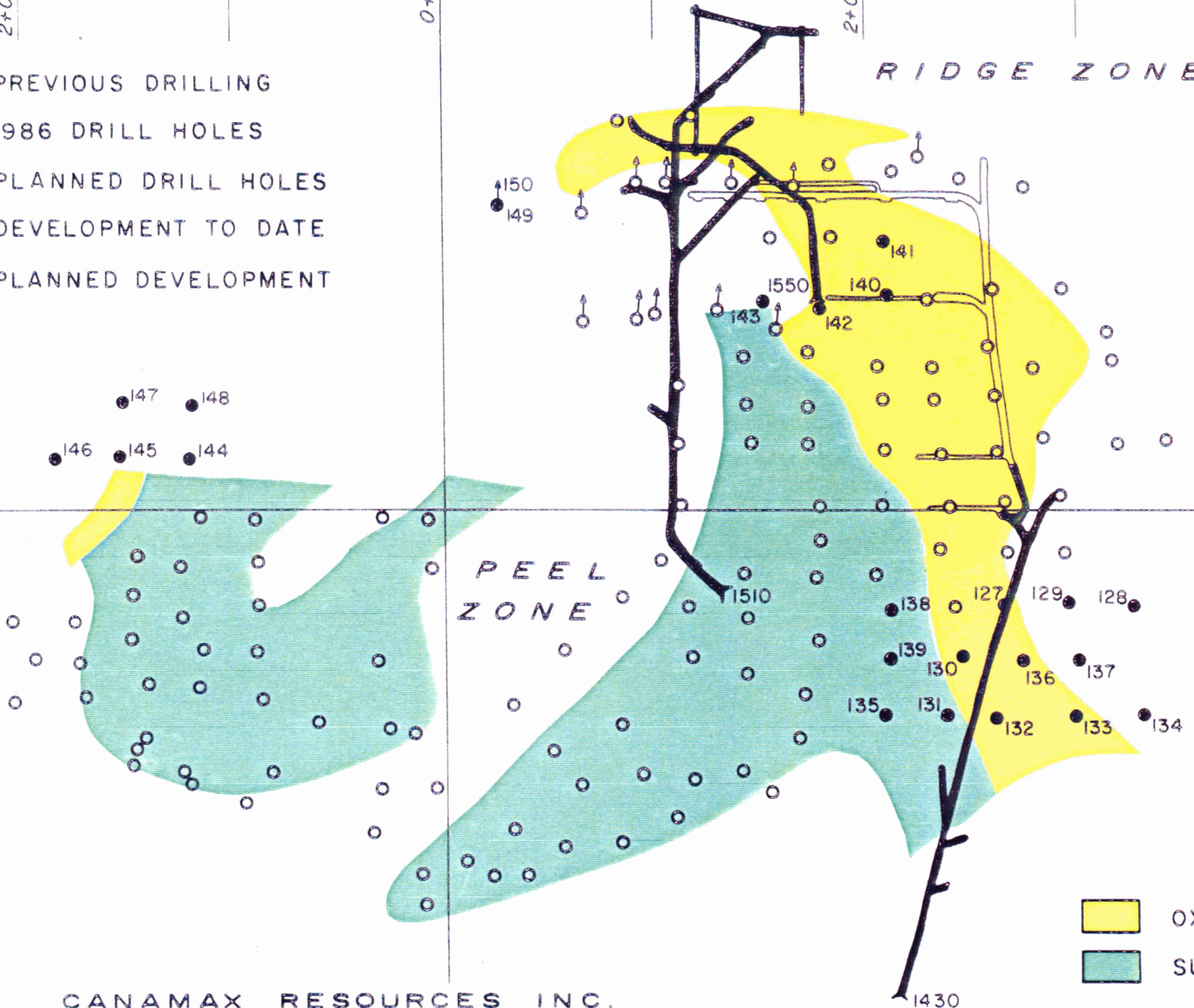
2+00 N

0+00

2+00 S

- PREVIOUS DRILLING
- 1986 DRILL HOLES
- ◐ PLANNED DRILL HOLES
- DEVELOPMENT TO DATE
- == PLANNED DEVELOPMENT

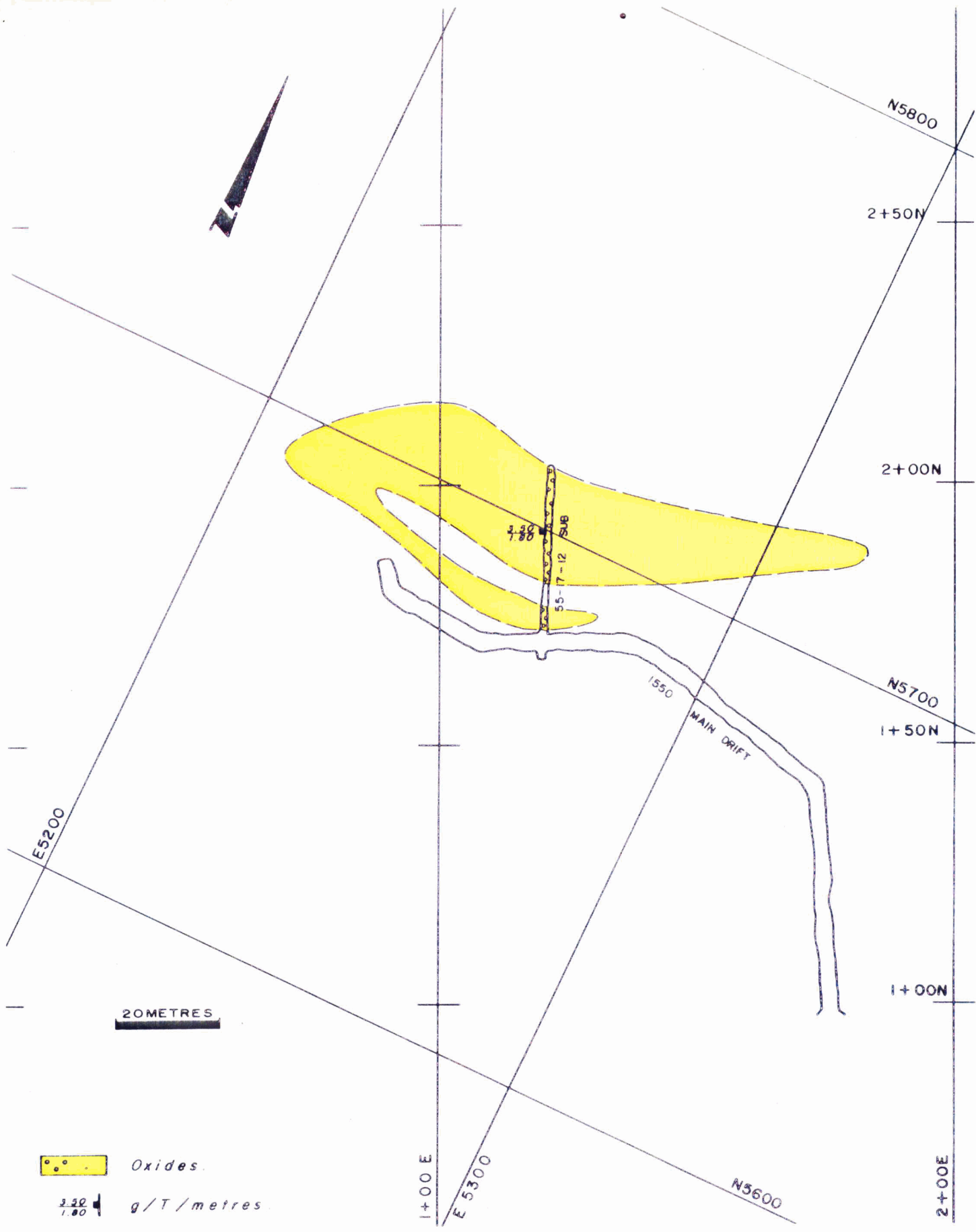
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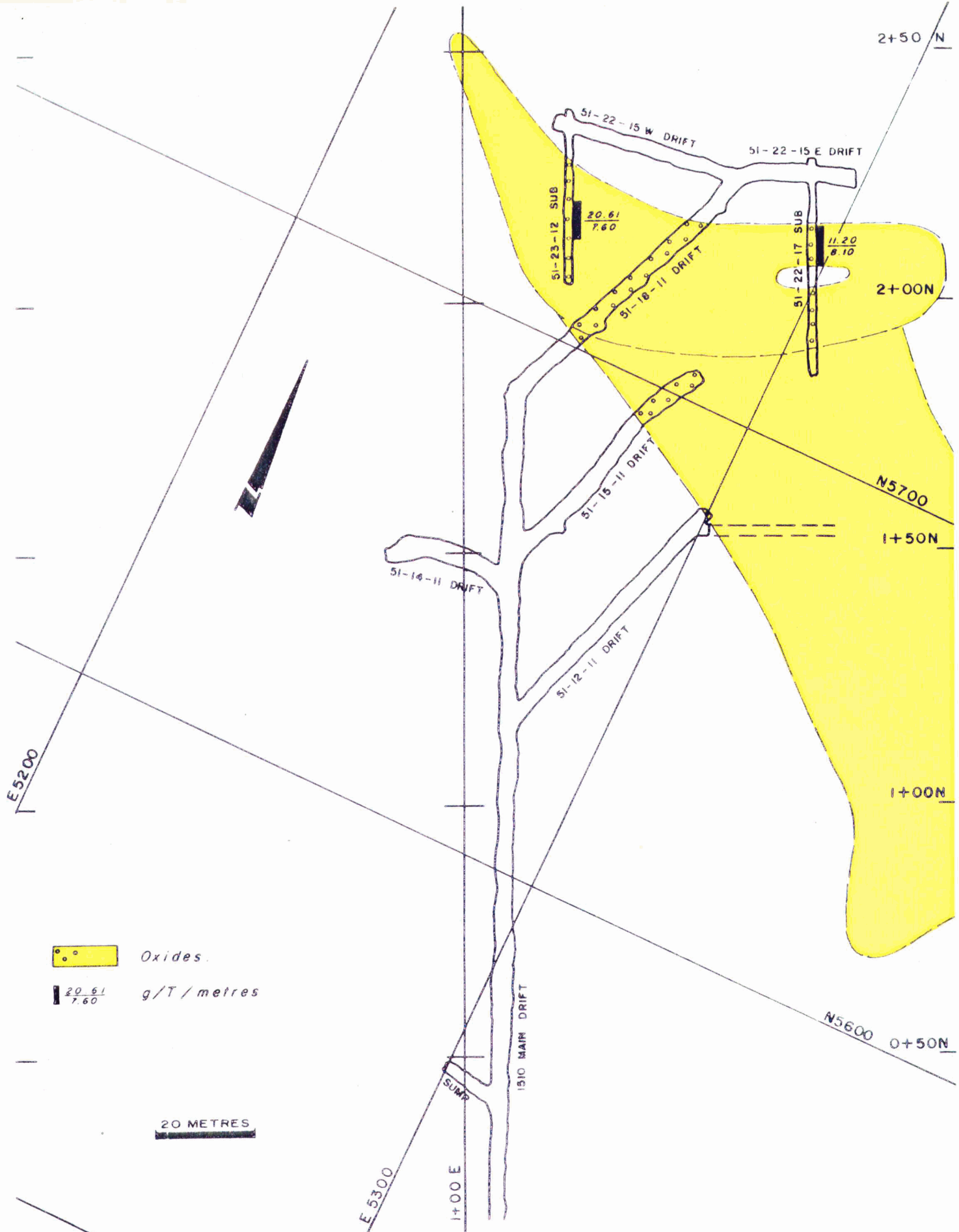
- OXIDES
- SULFIDES

CANAMAX RESOURCES INC.  
**KETZA RIVER PROJECT**  
 PLAN OF WORKINGS AND DRILL HOLES

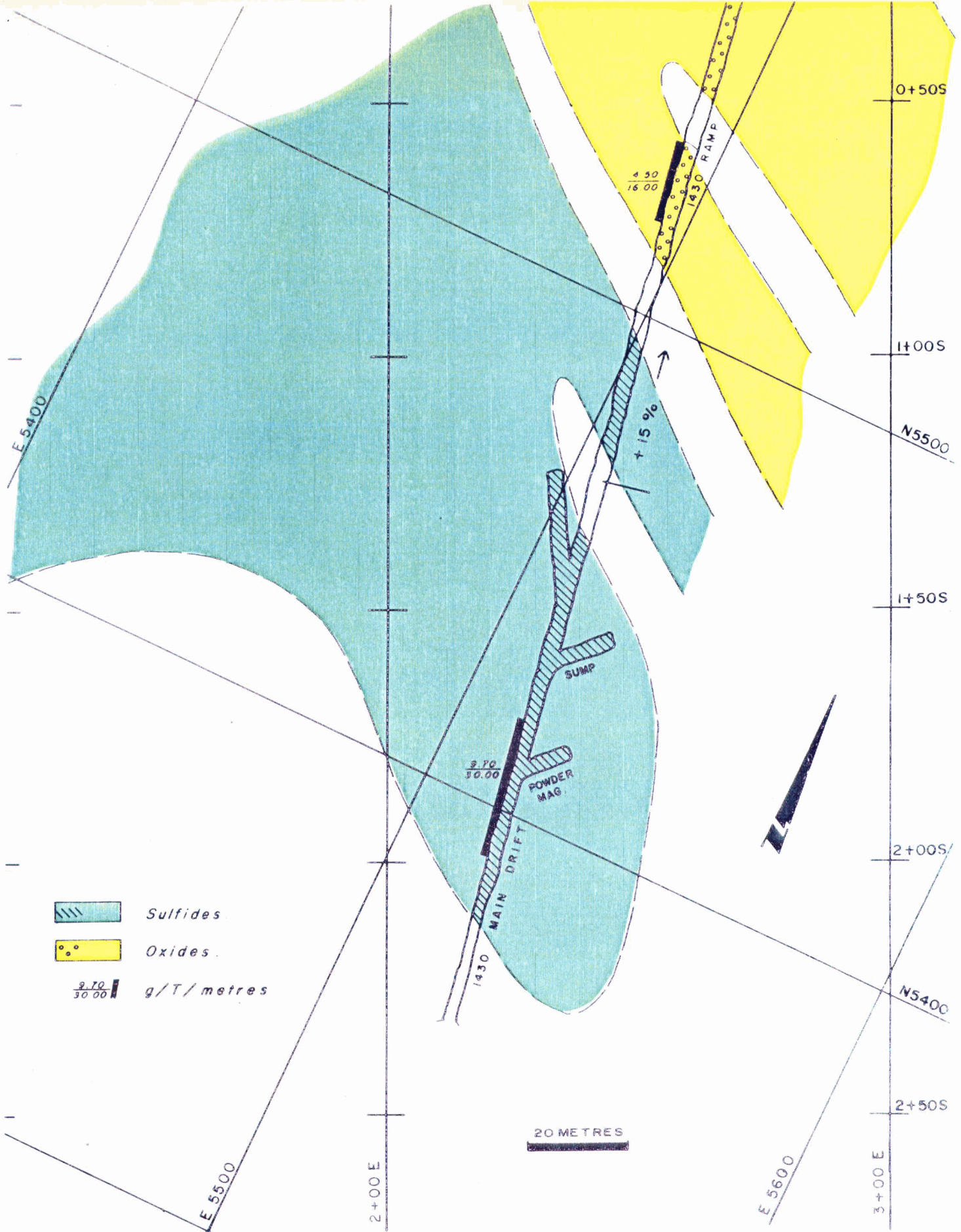




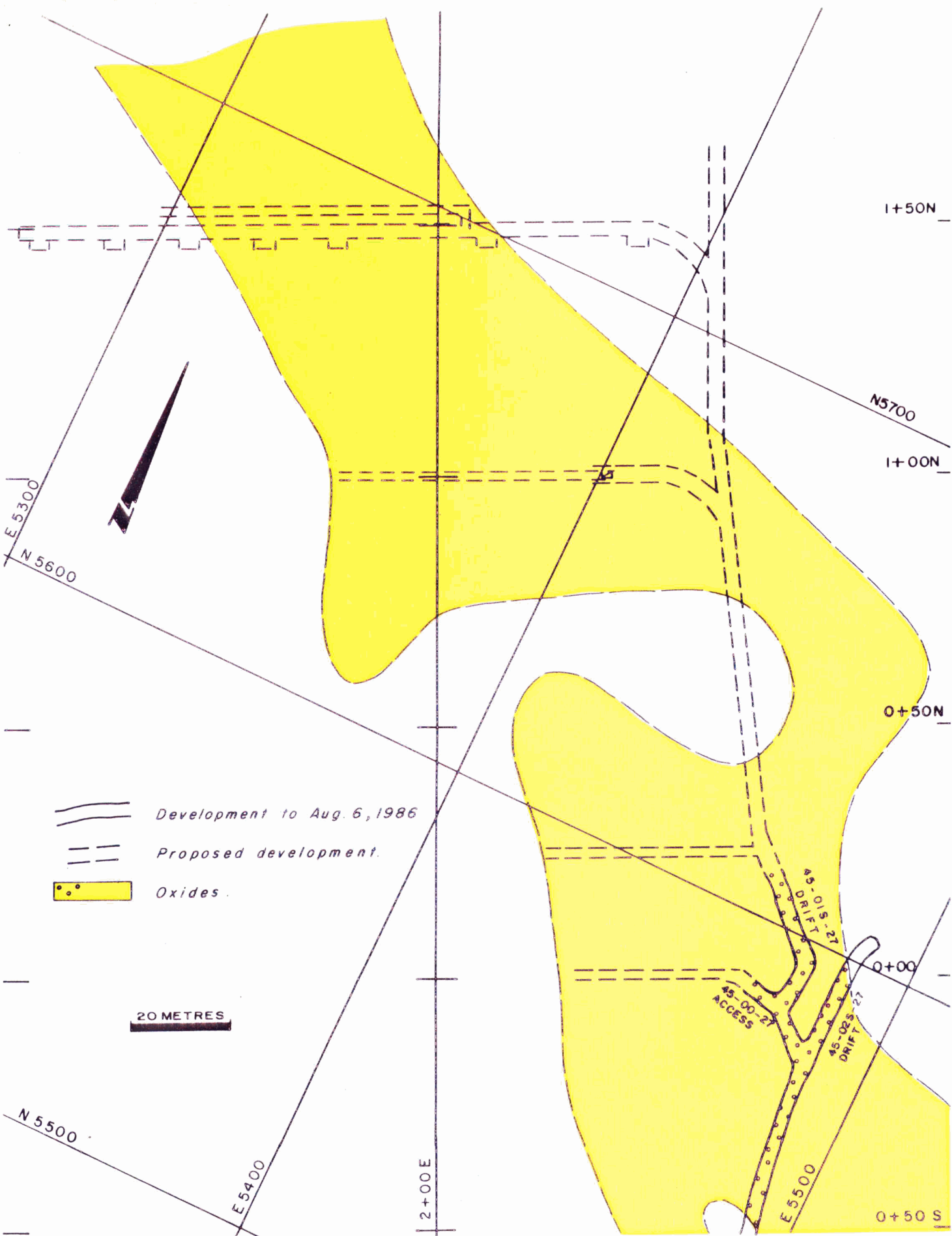
CANAMAX RESOURCES INC.  
 KETZA RIVER PROJECT  
 1550 LEVEL


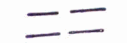



CANAMAX RESOURCES INC.  
 KETZA RIVER PROJECT  
 1510 LEVEL



CANAMAX RESOURCES INC.  
 KETZA RIVER PROJECT  
 1430 LEVEL



-  Development to Aug. 6, 1986
-  Proposed development.
-  Oxides.

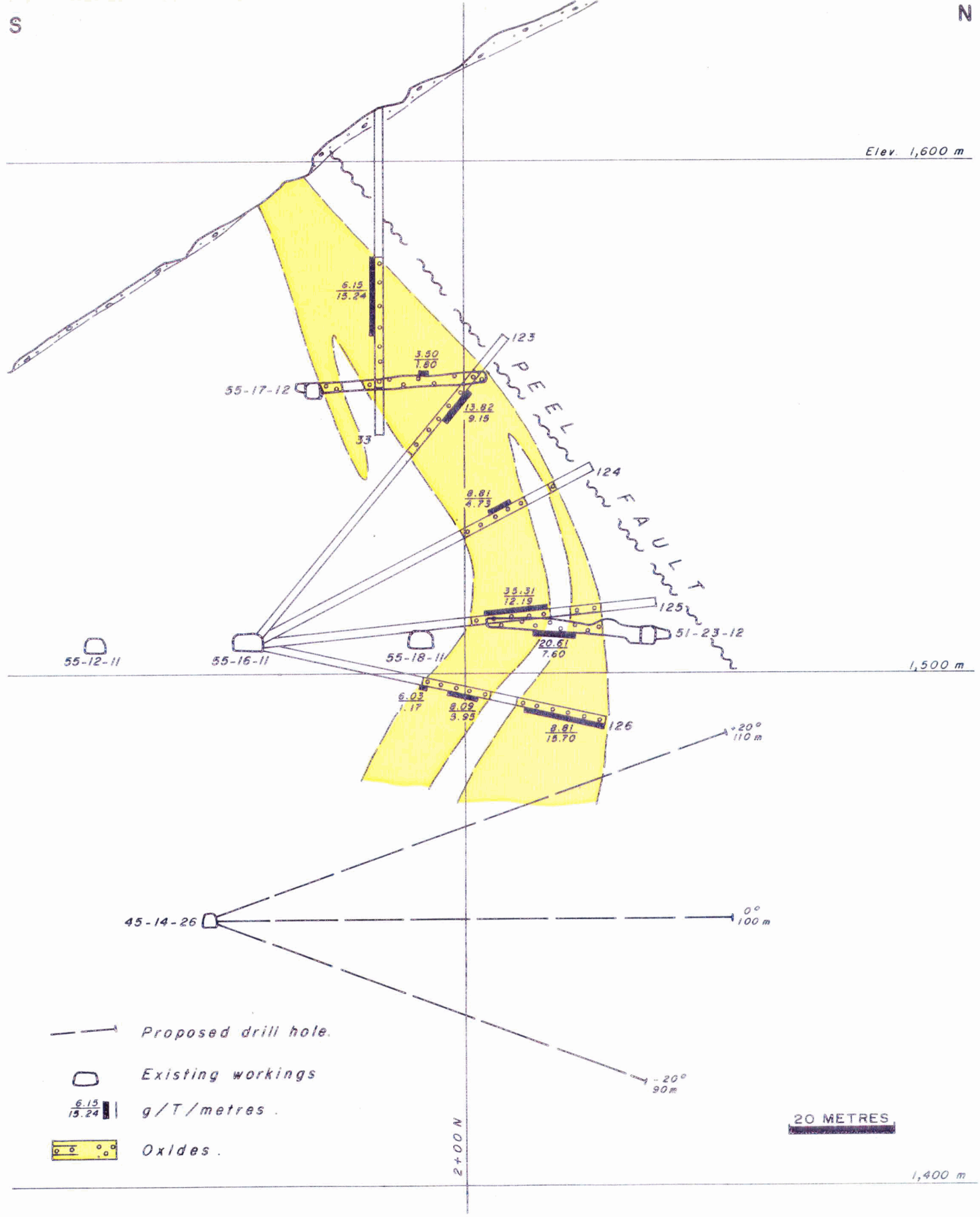
20 METRES

CANAMAX RESOURCES INC.  
 KETZA RIVER PROJECT  
 1450 LEVEL

S

N

Elev. 1,600 m



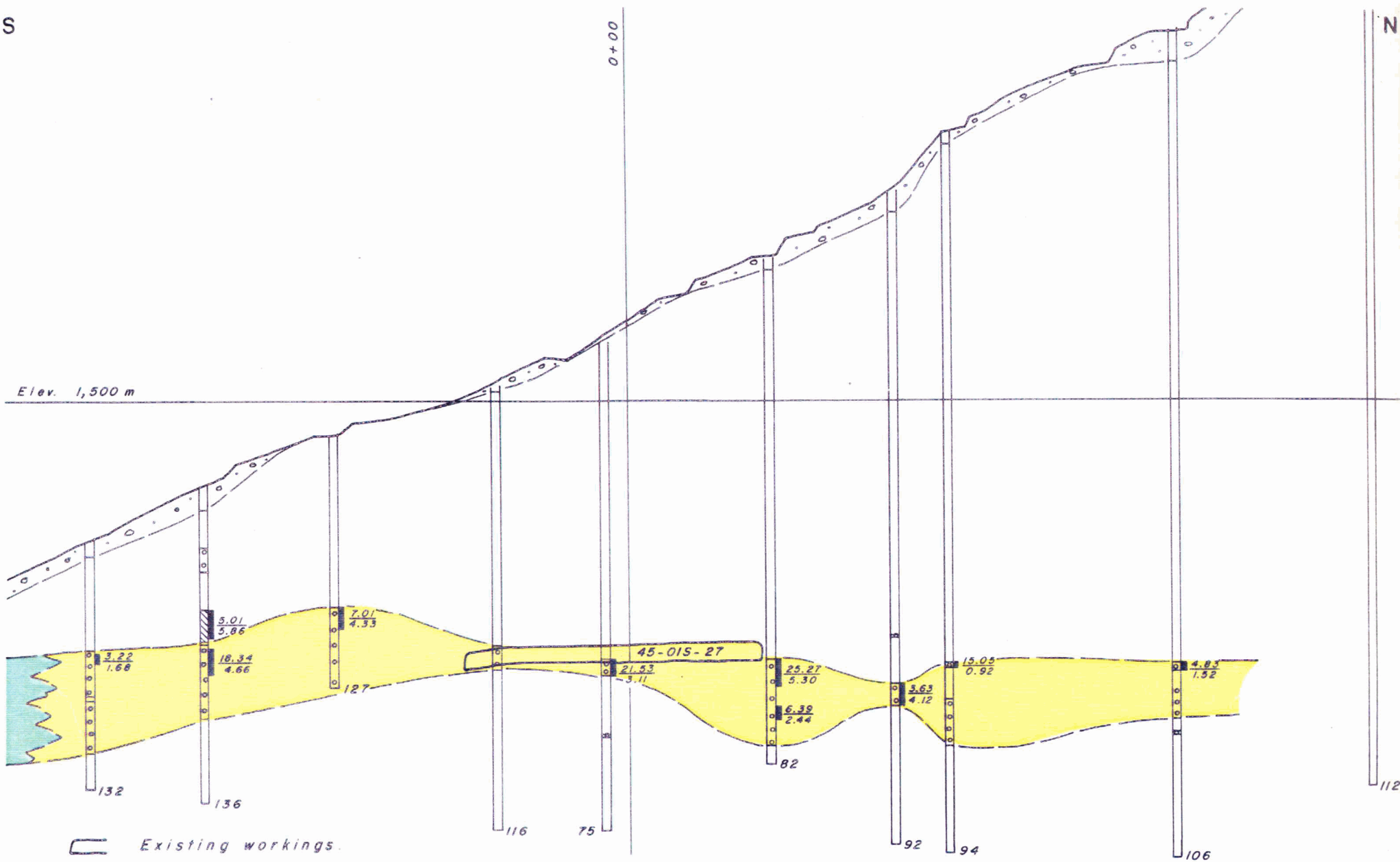
CANAMAX RESOURCES INC.  
 KETZA RIVER PROJECT  
 RIDGE ZONE  
 CROSS SECTION 1+20E  
 LOOKING SOUTHWEST

S

N

Elev. 1,500 m

0+00



Existing workings.

$\frac{21.53}{3.11}$  g/T/metres.

Oxides

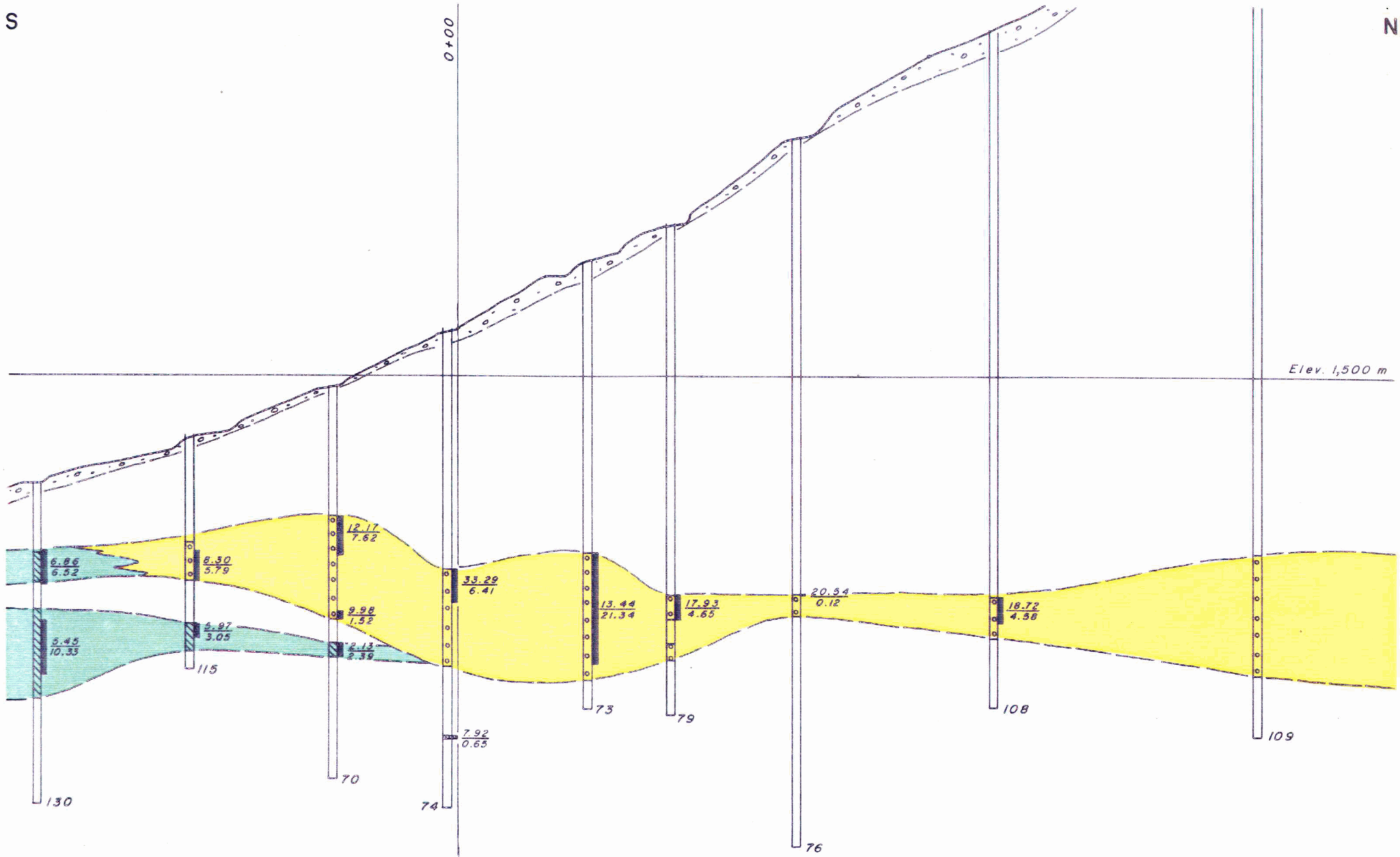
Sulfides




20 METRES

CANAMAX RESOURCES INC.  
 KETZA RIVER PROJECT  
 PEEL ZONE  
 CROSS SECTION 2+70E  
 LOOKING SOUTHWEST

S

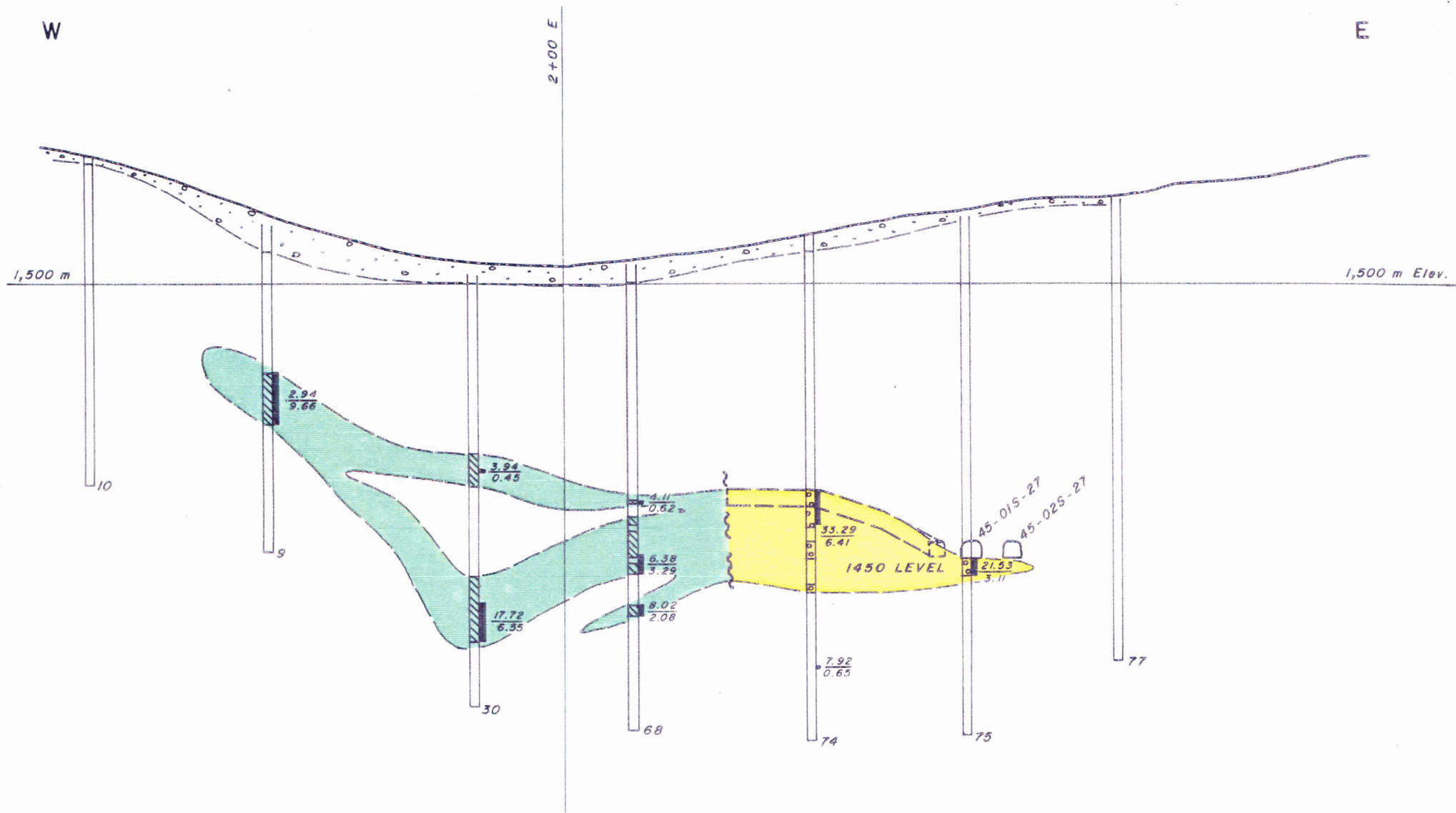
N



-  g/T/metres.
-  Oxides.
-  Sulfides.

20 METRES

CANAMAX RESOURCES INC.  
**KETZA RIVER PROJECT**  
 PEEL ZONE  
 CROSS SECTION 2+40E  
 LOOKING SOUTHWEST



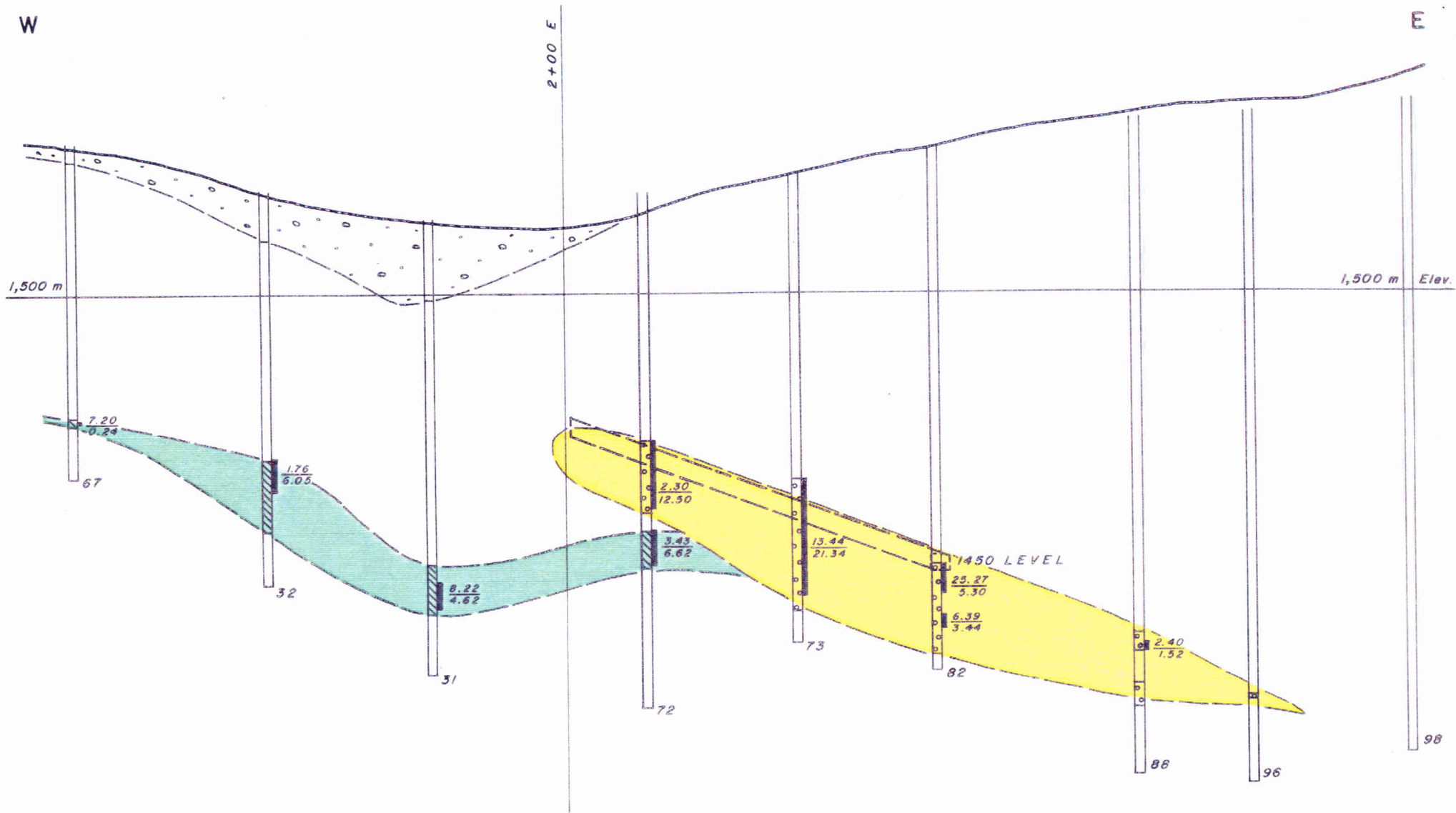
- Existing workings.
- Proposed development.
- g/T/metres.
- Oxides.
- Sulfides.

20 METRES

CANAMAX RESOURCES INC.  
**KETZA RIVER PROJECT**  
 PEEL ZONE  
 LONGITUDINAL SECTION 0+00 N  
 LOOKING NORTHWEST

W

E



--- Proposed development.

$\frac{8.22}{4.62}$  g/T/metres

Oxides.

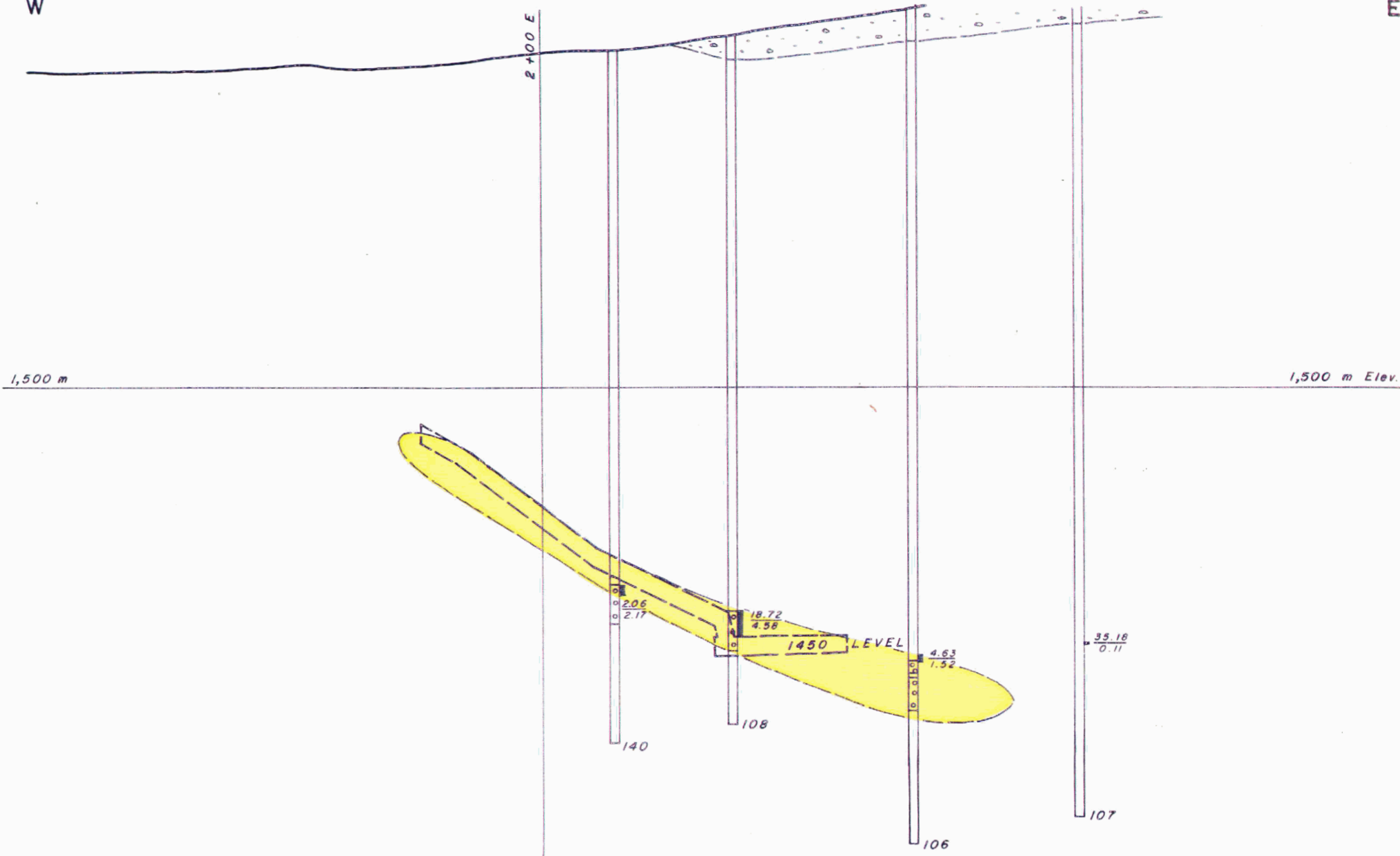
Sulfides.

20 METRES

CANAMAX RESOURCES INC.  
**KETZA RIVER PROJECT**  
 PEEL ZONE  
 LONGITUDINAL SECTION 0+25 N  
 LOOKING NORTHWEST

W

E



--- Proposed development

|| 25-27 / 5-30 g/T/metres

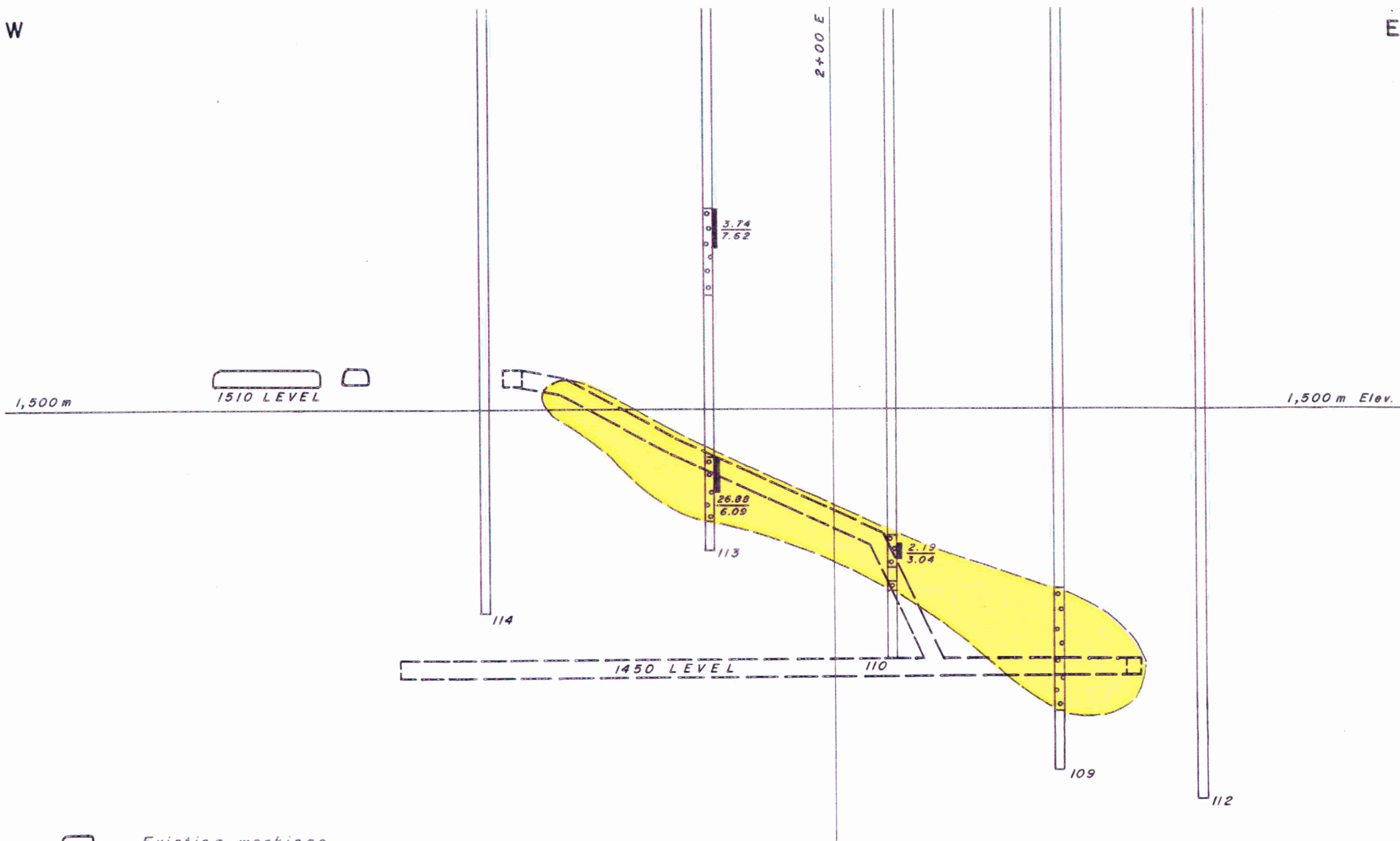
☐ Oxides



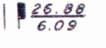

20 METRES

CANAMAX RESOURCES INC.  
**KETZA RIVER PROJECT**  
**PEEL ZONE**  
**LONGITUDINAL SECTION 1+00 N**  
**LOOKING NORTHWEST**

W

E



-  Existing workings.
-  Proposed development.
-  g/T/metre.
-  Oxides.

20 METRES

CANAMAX RESOURCES INC.  
 KETZA RIVER PROJECT  
 PEEL ZONE  
 LONGITUDINAL SECTION 1+50 N  
 LOOKING NORTHWEST