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**TOTAL ENERGOLD CORPORATION**  
**MacMILLAN JOINT VENTURE/CLEAR LAKE PROJECT**

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**PROJECT SUMMARY AND BUSINESS PROPOSAL**

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**April, 1990**

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**TOTAL ENERGOLD CORPORATION**  
**MacMILLAN JOINT VENTURE/CLEAR LAKE PROJECT**  
**PROJECT SUMMARY AND BUSINESS PROPOSAL**

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**Summary**

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TOTAL Energold Corporation (67%) and Essex Minerals (33%) are joint venture partners in the MacMillan Joint Venture. The joint venture has properties located at the north end of the Selwyn Basin, which hosts the world-class Anvil orebodies as well as numerous other lead-zinc deposits (Figure 2). A high grade zinc-lead-silver deposit, the Clear Lake deposit (owned TOTAL Energold 78%, Essex Minerals 22%), located within a "Designated Area" on the joint venture lands contains approximately 6,000,000 tons of better than 13% zinc-lead plus significant silver values using a 7% zinc-lead cutoff. The deposit is open to extension and, as well, several other promising drill targets remain to be tested in the joint venture area.

TOTAL Energold, the operator of the joint venture, is seeking a major industry partner to earn a substantial interest by spending funds to further explore the joint venture area and develop the Clear Lake deposit. Essex Minerals, the minority partner, is withdrawing from exploration and is willing to sell its interest. The purchase of the Essex interest is part of a possible transaction.

If you are interested in pursuing this opportunity, please contact:

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H. Walter Sellmer  
Vice President, Exploration  
TOTAL Energold Corporation  
#1500, 700 West Pender Street  
Vancouver, B.C. V6C 1G8  
Tel:(604) 681-9501; Fax: (604) 681-6813

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Additional information is available at TOTAL Energold's offices in Vancouver. Companies wishing to review the data will be required to sign a confidentiality agreement, a draft of which is included as Appendix I.



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## Property History

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The area between the MacMillan and Pelly Rivers was originally explored by Conwest in 1965-1967. After an unsuccessful initial exploration program which included mapping, geophysics and the drilling of six EM anomalies, Conwest lost interest. They subsequently re-entered the area in 1974 with Essex Minerals as a 49% partner in the MacMillan Joint Venture. The original Conwest exploration program was stimulated by lithologies similar to those of the Anvil district to the southeast. Thus, these programs were focussed on the areas to the east of the Tintina fault which are underlain by Anvil Range rocks. The years 1974 to 1977 were spent conducting ground EM surveys over the entire claim block, gravity surveys in selected areas and limited mapping and prospecting. The geophysical surveys were designed for flat-lying stratabound deposits of some 3,000 feet in axial dimension.

In 1978, after several gravity-EM targets were drill-tested east of the Tintina without success, an EM-17 anomaly was drilled to the west of the fault in different stratigraphy. This hole resulted in the discovery of the steeply-dipping Clear Lake zinc-lead-silver deposit. Subsequent checks of 1960's-vintage geochem data in the Clear Lake area found that anomalous zinc values were, in fact, present but went unrecognized at the time.

In 1980, Getty Canadian Metals, Limited acquired Conwest's 51% interest for cash leaving Conwest with a residual 5% Net Smelter Royalty (recently bought out) on Getty's share of the venture. The claims containing the Clear Lake deposit were then separated from those of the enclosing MacMillan Joint Venture by forming them into a "Designated Area" under the joint venture agreement. The Designated Area status allows for budgets and work programs which are distinct from that of the MacMillan Joint Venture.

In 1986, Getty subsequently became a wholly-owned subsidiary of Getty Resources Limited, a TSE-listed public company formed to purchase the Canadian mining assets of Getty Oil Co. from Texaco. Two years later, in 1988, Getty Resources changed its name to TOTAL Energold Corporation after having been acquired by a subsidiary of TOTAL Compagnie Française des Pétroles.

Due to the uncertainties during the mid-1980's surrounding the sale of Getty's Canadian properties and low base metals prices, no substantial work has been done on the property since 1984. Between 1986 and 1989, certain claims outside the Designated Area had been allowed to lapse. The key claims overlying previously-identified target areas were restaked in 1989 and 1990 to form the current land package of over 600 claims (Figure 1).

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## Ownership

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During 1981-1984, Getty, funded a substantial exploration program on the joint venture property, including the Designated Area. This disproportionate funding resulted in Getty, now TOTAL Energold Corporation, increasing its working interest in the joint venture and the Designated Area from 51% to the levels indicated below:

	Clear Lake Designated Area	MacMillan Joint Venture
TOTAL Energold (operator)	78%	67%
Essex Minerals Co.	22%	33%

Either party can elect to "non-contribute", in which case they will dilute, according to a specified formula, to not less than a 10% working interest, at which point they automatically revert to a 5% Net Smelter Royalty.

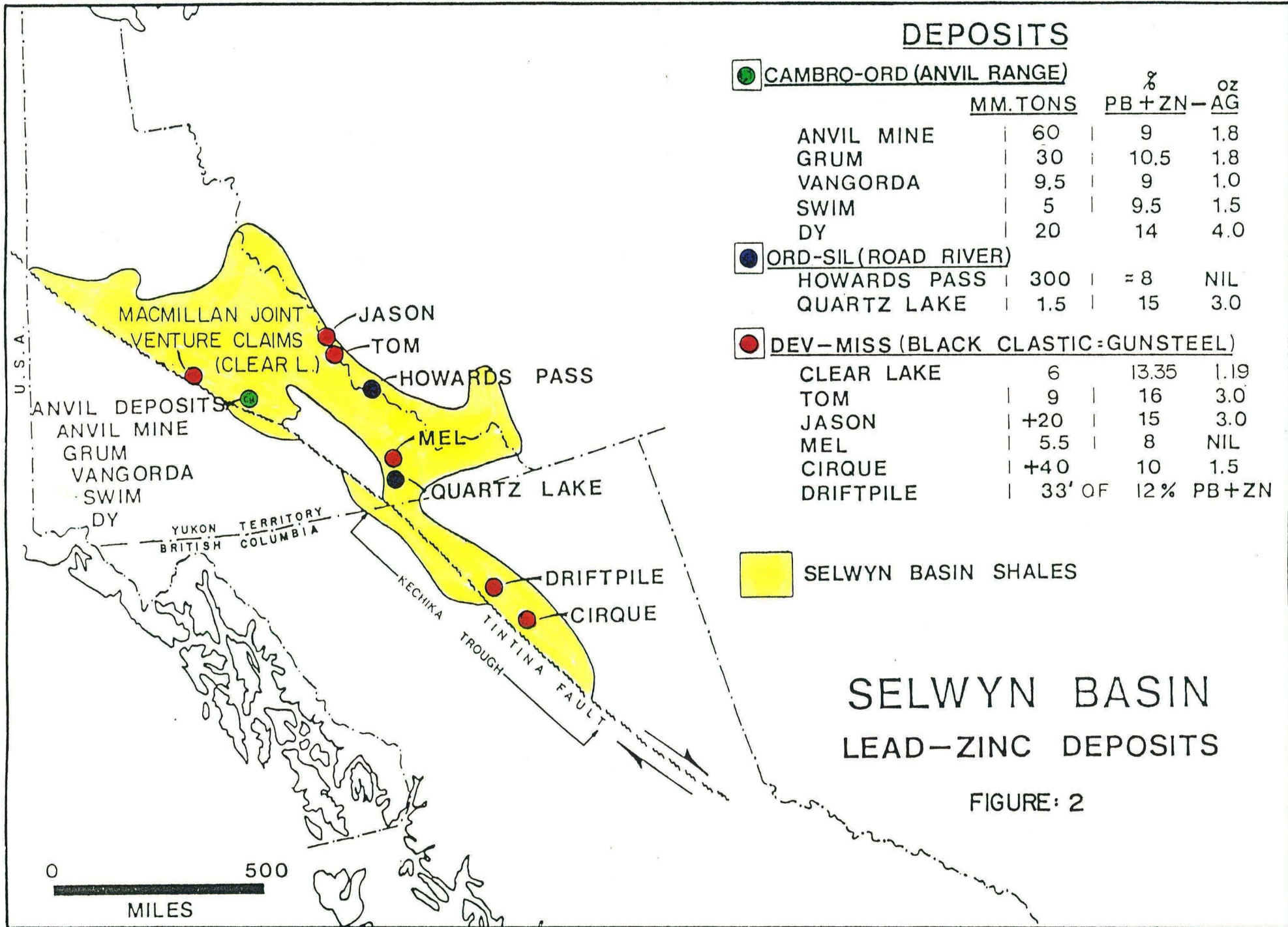
Essex, which is a subsidiary of USX (US Steel), are withdrawing from the minerals exploration business and have indicated that they do not wish to fund any renewed programs in the joint venture. There have been some discussions with Essex about a possible sale of their interest in the joint venture at a cash price of \$US1.0 million.

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## Location and Access

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The MacMillan Joint Venture lands are located in the North Central Yukon, some 232 kilometres north of Whitehorse east of the confluence of the Pelly and MacMillan Rivers at 62°49' North latitude and 135°05' West longitude on the Glenlyon 105/L Map Sheet (Figure 1). Access to the property is by helicopter or fixed wing aircraft from Carmacks (73 kilometres) or Whitehorse (234 kilometres). There is a 900 meter gravel airstrip at the Clear Lake site capable of handling DC-3 sized aircraft. The strip has not been actively used in several years, but is in good condition such that only some minor touch up is required. A small dozer (condition unknown) is located at the strip. A winter tote road to the site runs from Pelly Crossing, a distance of 65 kilometres.



## DEPOSITS

	MM.TONS	% PB+ZN-AG	
		PB+ZN	AG
<b>CAMBRO-ORD (ANVIL RANGE)</b>			
ANVIL MINE	60	9	1.8
GRUM	30	10.5	1.8
VANGORDA	9.5	9	1.0
SWIM	5	9.5	1.5
DY	20	14	4.0
<b>ORD-SIL (ROAD RIVER)</b>			
HOWARDS PASS	300	8	NIL
QUARTZ LAKE	1.5	15	3.0
<b>DEV-MISS (BLACK CLASTIC-GUNSTEEL)</b>			
CLEAR LAKE	6	13.35	1.19
TOM	9	16	3.0
JASON	+20	15	3.0
MEL	5.5	8	NIL
CIRQUE	+40	10	1.5
DRIFTPILE	33' OF	12%	PB+ZN

SELWYN BASIN SHALES

## SELWYN BASIN LEAD-ZINC DEPOSITS

FIGURE: 2

0 500  
MILES

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## Geology

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Regionally, the property is located at the north end of the Selwyn Basin, which also hosts the world-class Anvil deposits currently being mined by Curragh Resources and numerous other zinc-lead-silver deposits (Figure 2). The various Anvil deposits alone, in aggregate, contain some 130 million tons of 10%+ combined zinc-lead and 2 oz/ton silver.

The MacMillan Joint Venture lands are split by the regional northwest-trending Tintina fault, which separates the Cambro-Ordovician Anvil Range stratigraphy to the northeast from Devonian-Mississippian Clear Lake/Askin Group stratigraphy in the southwest section of the property (Figure 3).

The Clear Lake deposit is a shale-hosted zinc-lead-silver deposit. The enclosing rocks are Devonian-Mississippian argillites (Clear Lake stratigraphy), with a general strike of 130-150°. The deposit consists of one steeply east-dipping main sulphide lense up to 300 feet thick, and several smaller lenses up to 30 feet thick. The mineralization is within chert, silicified argillite and lapilli tuff which together form an "active zone" up to 850 feet in thickness. The "Main Zone" sulphides dip 50°-60° to the east but steepen progressively at depth and may eventually dip back to the west. Primary sedimentary structures indicate that the section is overturned. There is also some indication that the mineralized zones are, in fact, tightly-folded into isoclinal, recumbent fold structures. If this hypothesis is correct, there may be another untested limb of the Clear Lake active zone stratigraphy to the west of the current drilling.

Outside the Clear Lake Designated Area there are numerous drill targets which remain to be tested (Figure 3). These areas are prospective based primarily on geophysics (gravity and EM), since surface mapping is difficult. Much of the area is mantled with alluvial deposits and rock exposure in most areas are poor. There are areas, west of Clear Lake, with surface indications of zinc-lead mineralization which require follow-up and there is a need to better define local and regional stratigraphy and structural styles as an aid to effective exploration.

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## Claim Data

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The Clear Lake Designated Area consists of 20 contiguous claims including fractions (Figure 4) totalling about 500 acres. These claims are in good standing until December 11, 1992. In the MacMillan Joint Venture area, many of the key claims had expired; 490 claims were restaked in 1989. They require work in 1990 to remain in good standing. Figure 3 in this report shows current claim boundaries.

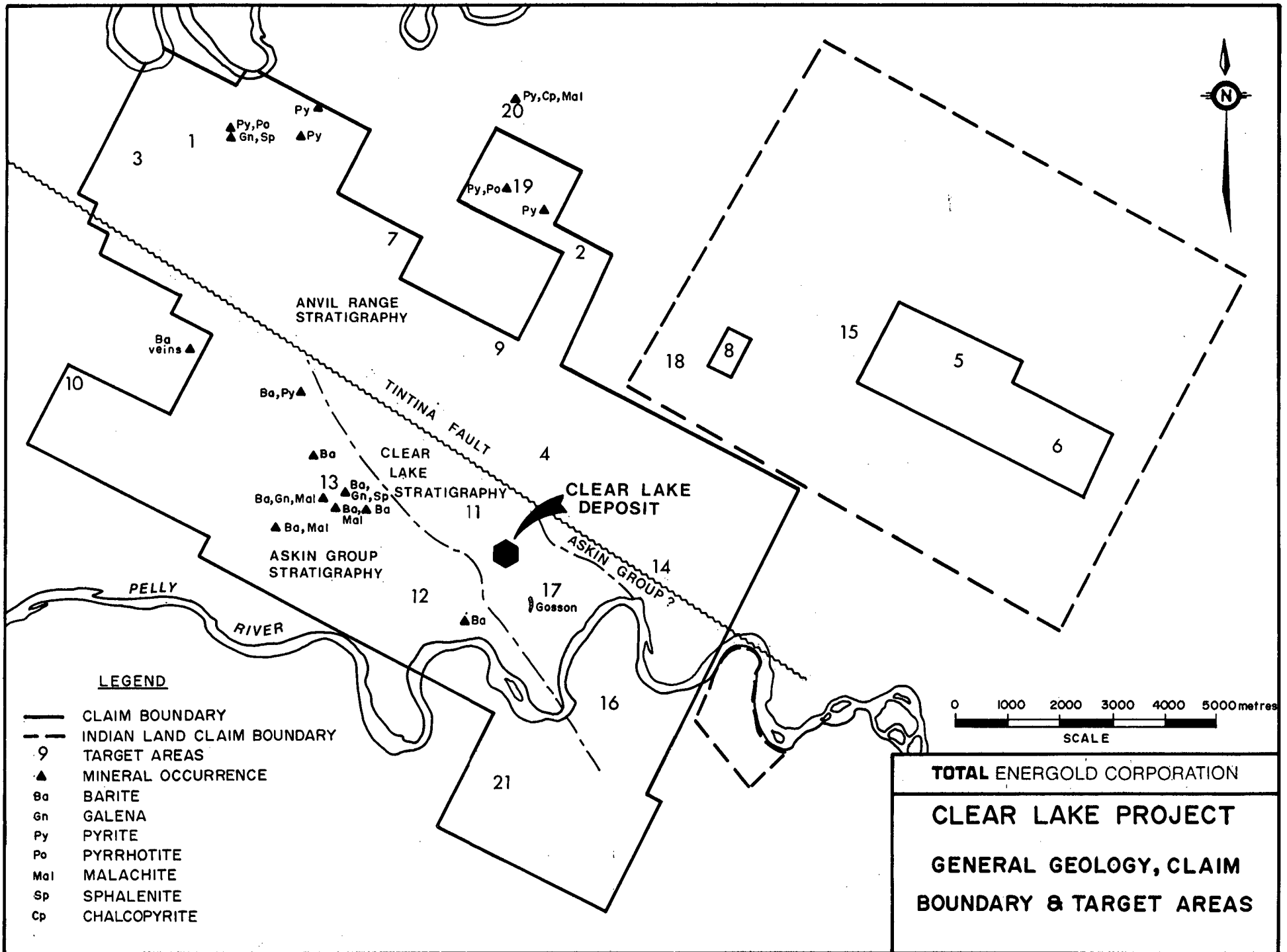


FIGURE 3

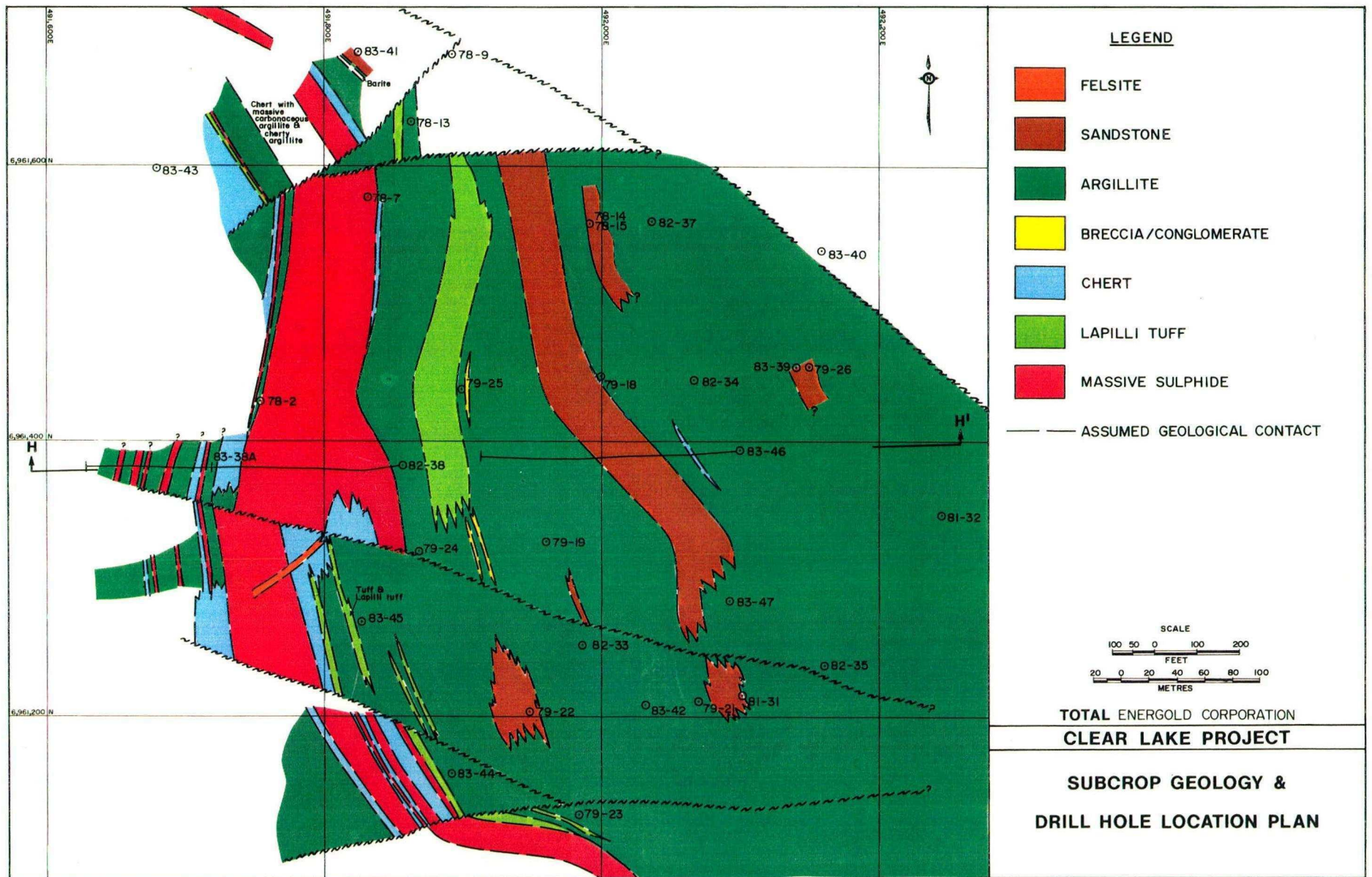


FIGURE: 3a

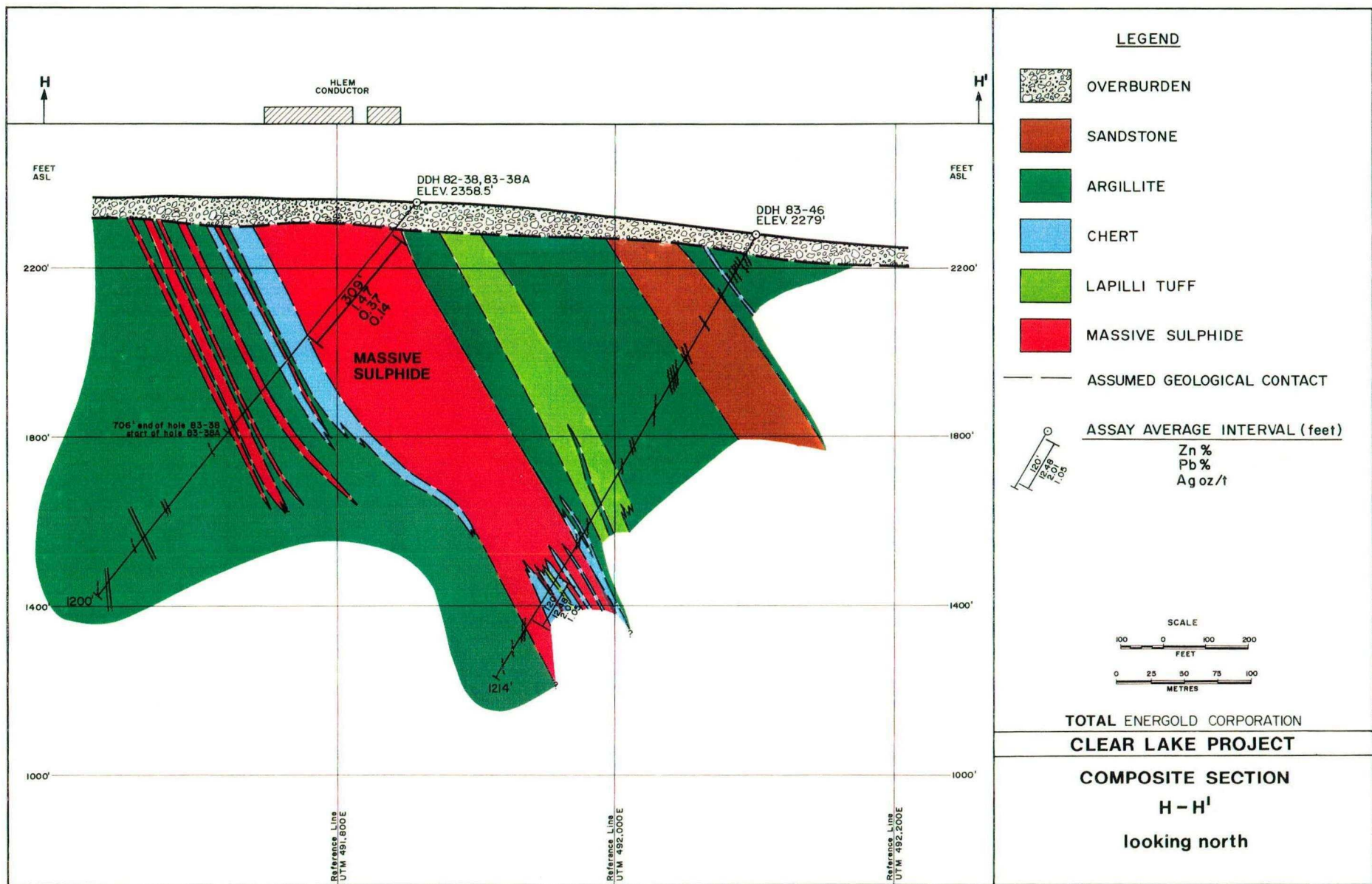


FIGURE: 3b

## Mineral Inventory

Getty Canadian Metals calculated a geological drill-indicated mineral reserve for the Clear Lake deposit in 1984, based upon the results of about 35 drill holes as summarized below:

CLEAR LAKE DEPOSIT DRILL-INDICATED GEOLOGICAL RESERVES (Source: Getty Canadian Metals, 1984)				
Cutoff Grade	Tons	Zinc %	Lead %	Silver oz/ton
5% Zn-Pb	11,642,800	7.91	1.38	0.80
6% Zn-Pb	9,025,000	9.36	1.58	0.95
7% Zn-Pb	6,117,000	11.34	1.99	1.19

The parameters used to calculate these reserves are as follows:

1. A minimum true mining width of 15 feet. High grade zones of less than minimum widths were extended to 15 feet provided the overall average grade of the 15 foot interval exceeded the cutoff grade.
2. Parallel zones separated by less than 20 feet of waste were combined if the weighted average grade of the combined zone (including internal below cutoff material) exceeded the cutoff grade.
3. Areas of influence for the reserve blocks were determined from geological cross-sections by extending an intersection either halfway to the next closest drill hole or a maximum of 200 feet.
4. Tonnage factor was 8 ft<sup>3</sup>/ton

The reserves were checked by TOTAL Energold personnel in 1989 using a more conservative methodology and were essentially verified.

## Infrastructure

The Clear Lake/MacMillan Joint Venture area is remote. The nearest town is Faro, located about 100 kilometres southeast. There are no permanent roads into the area although a winter tote road from Pelly Crossing exists to haul in equipment over frozen ground and watercourses. A 900 meter gravel airstrip was constructed at the site of the Clear Lake drilling. A small bulldozer useable for minor repair work still

remains. Limited-use local roads, suitable for 4-wheel drive vehicles, connect the strip with the former camp location and drill sites.

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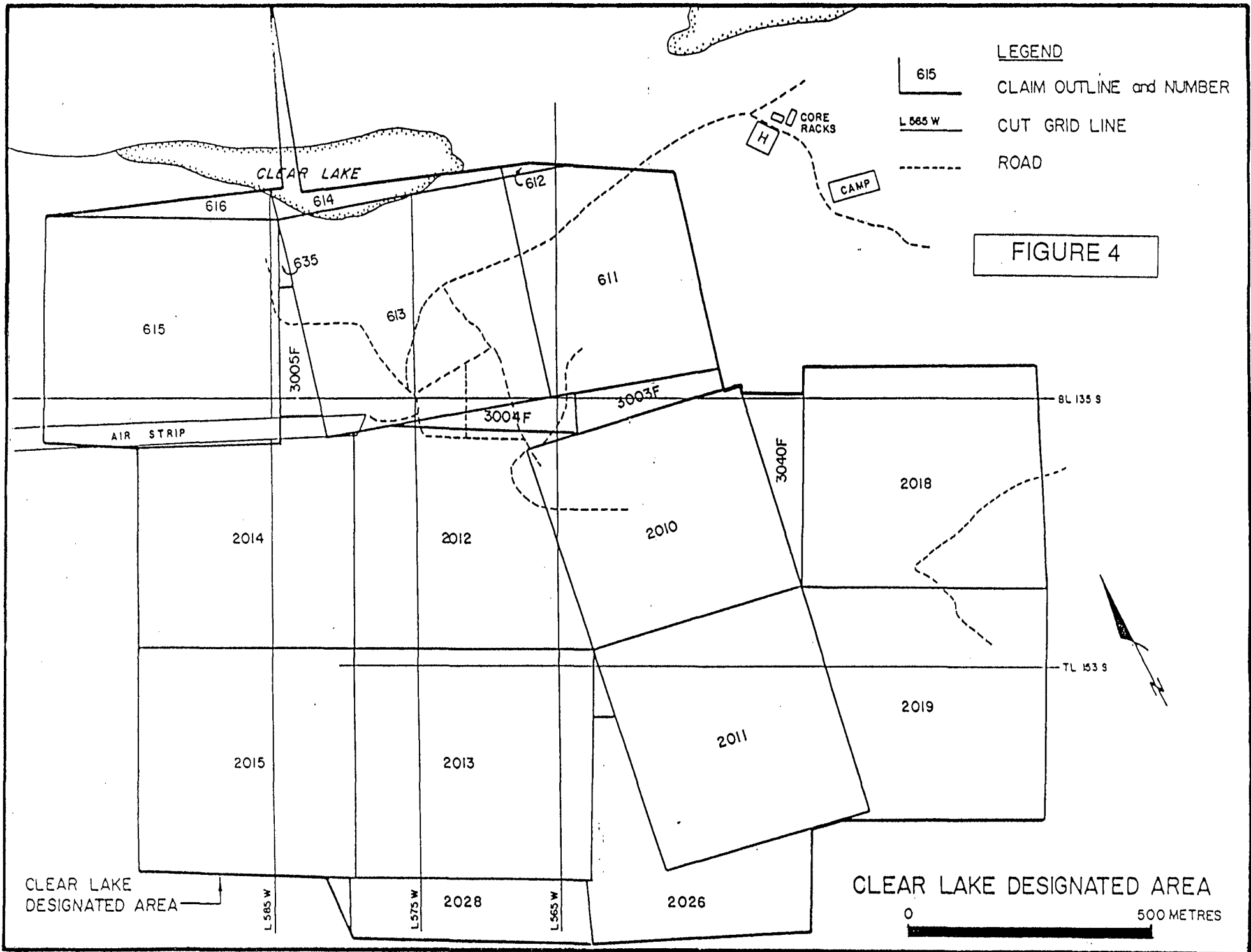
### Ownership

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The current ownership interests are outlined in the following Table. Either party can elect to "non-contribute", in which case they will dilute, according to formula, to not less than a 10% working interest, at which point they automatically revert to a 5% Net Smelter Royalty.

	Clear Lake Designated Area	MacMillan Joint Venture
TOTAL Energold	78%	67%
ESSEX Minerals Co.	22%	33%

Essex, which is a subsidiary of USX (US Steel), are withdrawing from the minerals exploration business and have indicated that they do not wish to fund any renewed programs in the joint venture. There have been some discussions with Essex about the disposition of their interest in the joint venture in which Essex has stated it will sell its interests for \$US1.0 million.



LEGEND

- 615 CLAIM OUTLINE and NUMBER
- L 565 W CUT GRID LINE
- ROAD

FIGURE 4

CLEAR LAKE DESIGNATED AREA

CLEAR LAKE DESIGNATED AREA

0 500 METRES

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## **Mining and Metallurgy**

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No underground openings exist on the Clear Lake deposit. The depth of the mineralized zones suggest that underground mining is preferred, although the deposit in some areas does subcrop within reach of an open pit. The width and steep dip of the mineralized zones makes low-cost, bulk mining underground methods a good possibility.

Because of the exploratory nature of the work to date, no metallurgical testwork, permitting work or detailed economic studies have been done.

Drill cores are stored in racks on the property. They are partially collapsed and need some refurbishing so the core can be accessed for relogging or metallurgical sampling.

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## CLEAR LAKE PROJECT

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### Exploration

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The Clear Lake area received intensive surface exploration during the period 1965 to 1967 by Conwest Exploration in search of Anvil-type mineralization. Further work in 1974 to 1977 saw broad geophysical coverage of a larger area and in 1978, the Clear Lake discovery hole was drilled in younger rocks west of the Tintina Fault. Subsequently, work in 1981 to 1984 focussed almost entirely on the delineation of the Clear Lake Zone. Exploration activity stopped in 1984 during a period of depressed base metal prices.

Today the knowledge of shale-hosted deposits in the Cordillera and elsewhere, has been significantly advanced but has seen only limited application at Clear Lake. There is every likelihood that further reserves will be found at and near Clear Lake merely by extending the knowledge of stratigraphy and structure beyond the immediate environs of known mineralization, by testing as yet undrilled gravity - EM anomalies and by exploring the source of geochemical anomalies and poorly exposed surface showings within Clear Lake stratigraphy and older rocks as well.

A brief summary of as yet undrilled targets is attached as Appendix II.

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### Objectives

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Grade of mineralization in shale hosted deposits such as Clear Lake are typically high, ranging from 8 to 16% zinc-lead mainly as zinc. Lead values are 1 to 2% and silver ranges from 1 to 3 ounces per ton with a ratio of around 1 ounce of silver per 1% lead.

The probability of several zones as either stacked lenses or individual ore "pools" along a structural zone is high.

Clear Lake, given reasonable underground mining costs, could be a relatively low-cost producer at a rate of 2,500 tons per day with a cash cost of production at or near \$0.30 per pound of zinc.

TOTAL Energold Corporation believes that to be a highly competitive resource, sufficient reserves for at least 10 to 15 years of production should be indicated at Clear Lake. Thus the primary objectives for the near future is be two-fold.

1. To increase the reserve base to 12 to 18 million tons grading approximately 11% zinc in one or more ore zones.
2. To determine the internal continuity, metallurgy, mineability, environmental, capital and operating cost parameters leading to a feasibility study.

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### Targets

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Because it has yielded the Clear Lake deposit, geochemical/geophysical anomalies in the Clear Lake stratigraphy are given highest priority. They include the following:

1. Immediate lateral extension of the "active zone" stratigraphy to the north and south of the Clear Lake deposit;
2. A gravity anomaly to the southeast of Clear Lake (Figure 3 in Appendix II - Anomaly #17 and 16) in Clear Lake stratigraphy;
3. Trenching and, if warranted, drilling of a geochemical anomaly, with co-incident EM conductors to the west of Clear Lake (Anomaly #11 and 13);
4. Follow-up of a drill intercept of massive pyrite in "active package" stratigraphy east of Clear Lake (Anomaly #14);
5. EM plus/minus MAG plus/minus GRAVITY anomalies in Clear Lake Stratigraphy (Anomaly #17, 16, 11 and 21).

In addition, several conductors in potentially permissive Anvil Range stratigraphy east of the Tintina Fault remain to be followed up (see Figure 3 in Appendix II).

While exploration activity continues in search of additional reserves, drilling to confirm internal continuity of the Clear Lake deposit should be undertaken. A total of 6,300 metres in 20 to 25 holes is provided for in the budget set out in Appendix III attached.

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### **Methods**

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Initially, a thorough review and familiarization with previous work will be undertaken. This will involve:

1. Review of existing geological, geochemical and geophysical data;
2. Re-logging of core;
3. Establishment of old grids, drill collars, claim posts, etc.;
4. Re-mapping of selected target areas with limited ground surveys (geophysics and geochemical) to confirm target locations;
5. Trenching where deemed appropriate and/or drilling.

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### **An Outline for Joint Venture Participation**

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TOTAL Energold is looking for an earn-in joint venture partner to finance:

1. The Essex buyout;
2. Ongoing exploration;
3. Detailed reserve evaluation;
4. A Feasibility Study leading to a production decision.

In exchange, TOTAL Energold is prepared to offer a majority interest in the project which, with the Essex buyout completed, will have no Net Smelter Royalty burden attached to it and on which to date, in excess of \$6.0 million have been spent.

TOTAL Energold is prepared to act as Operator of the project during the exploration/evaluation phases and beyond, if this is deemed to be desirable by the incoming partner. A minimum initial program is viewed as involving an expenditure of \$1.0 to \$1.5 million, not including the Essex buyout.

APPENDIX I

DRAFT CONFIDENTIALITY AGREEMENT

**COVENANT AS TO CONFIDENTIALITY**

THIS COVENANT IS GIVEN THE \_\_\_\_\_ day of \_\_\_\_\_, 1990

BY: \_\_\_\_\_  
(the "Viewer")

TO: TOTAL ENERGOLD CORPORATION  
(“TEC”)

AND TO: ESSEX MINERALS COMPANY  
(“Essex”)

(TEC and Essex are collectively called the "Provider")

WHEREAS:

A. TEC and Essex are parties to a joint venture agreement dated January 1, 1982 (the "Joint Venture Agreement") whereunder TEC and Essex are engaged in the exploration and development of mineral property (the "Property") located at approximately 230 kilometers north of Whitehorse, Yukon Territory near Lat. 62° 49' and Long 135° 05' and within an area of interest (the "Area of Interest") described in the boundary description set forth in Exhibit "A" attached hereto.

B. The Viewer has expressed an interest in the possible acquisition of a portion of the Property and desires to review certain confidential information respecting the Property.

NOW THEREFORE, in consideration of Provider providing to Viewer such information on the terms and conditions set forth herein, Viewer agrees and covenants as follows:

1. This Covenant applies to all data, records, reports, drill hole logs, calculations, opinions, maps, charts, documents, and other information whatsoever (the "Information"), written or oral and whether or not noted thereon to be confidential, pertaining to the Property disclosed or provided to Viewer, its employees, or agents, or to which Viewer, its employees, or agents are given access, by Provider, its employees, or agents, except:

- (a) Information which at the date hereof is in the public domain;
- (b) Information which after the date hereof is published or otherwise becomes part of the public domain through no fault or action of Viewer or any of its officers, directors, employees, or agents or representatives;
- (c) Information which Viewer can prove was in its possession prior to the date hereof and was not acquired by Viewer directly or indirectly from Provider or anyone under an obligation of confidentiality to Provider.
- (d) Information received by Viewer without restriction as to disclosure from a third party who has the lawful right to disclose the same.

2. The Viewer will keep all Information in strict confidence and will not disclose or dispose of any of the same to any third party, provided that:

- (a) Information may be disclosed to those of Viewer's directors, officers, employees, agents and representatives who need to know Information for the purposes of evaluating the possible acquisition referred to herein, all of whom shall be directed by Viewer in writing to treat Information confidentially.;
- (b) Viewer may disclose Information pursuant to the order of any governmental or judicial authority after giving at least fifteen (15) days prior written notice to Provider and marking such Information by referring to its confidential nature under the terms of this Agreement; and
- (c) Any disclosure of Information may be made to which Provider gives its prior written consent.

3. The Viewer shall not itself, and shall ensure that its officers, directors, employees, agents and representatives do not, use the Information directly or indirectly for any purpose other than for the purpose evaluating a possible acquisition of a portion of the Property from the Provider, and, in particular, but without limiting the generality of the foregoing, the Viewer shall not, and shall ensure that its officers, directors, employees, agents and representatives do not, acquire any interests in any properties or minerals within the Area of Interest for a period of two (2) years from the date hereof.

4. In the event Provider and Viewer have not reached an agreement within six (6) months after the date of this Covenant for Viewer's acquisition of all or a portion of the Property, then:

- (a) Viewer will promptly return to Provider all Information furnished by or on behalf of Provider without retaining any copy thereof; and
- (b) Viewer will keep confidential any Information or other documents prepared for its internal use by its employees or agents and which reflect or are based in whole or in part upon Information.

5. PROVIDER MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR ACCURACY OF ANY INFORMATION OR ANY OTHER STATEMENT, WRITTEN OR ORAL, MADE TO VIEWER OR ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR REPRESENTATIVES IN RESPECT TO THE PROPERTY. PROVIDER MAKES NO REPRESENTATIONS, EXPRESS OR IMPLIED, AS TO THE BOUNDARIES, TITLE, OR VALUE OF THE PROPERTY. VIEWER AGREES THAT IT WILL RELY SOLELY ON ITS OWN APPRAISALS AND ESTIMATES AS TO THE VALUE OF THE PROPERTY AND UPON ITS OWN GEOLOGIC AND ENGINEERING INTERPRETATIONS RELATED THERETO.

6. Viewer agrees to defend, indemnify, and hold Provider harmless from any and all liability arising (1) from injury to person or property of Viewer, its employees or agents incurred during the course of any visit to the Property, (2) from injury to person or property of Provider, its employees, or agents, or any third party, arising from Viewer's negligent or willful act or omission to act during any such visit. Viewer agrees not to visit the Property without prior notice to and approval from Provider representative.

7. This Covenant shall be governed, construed and enforced in accordance with the laws of British Columbia.

8. This Covenant shall terminate two (2) years from the date hereof.

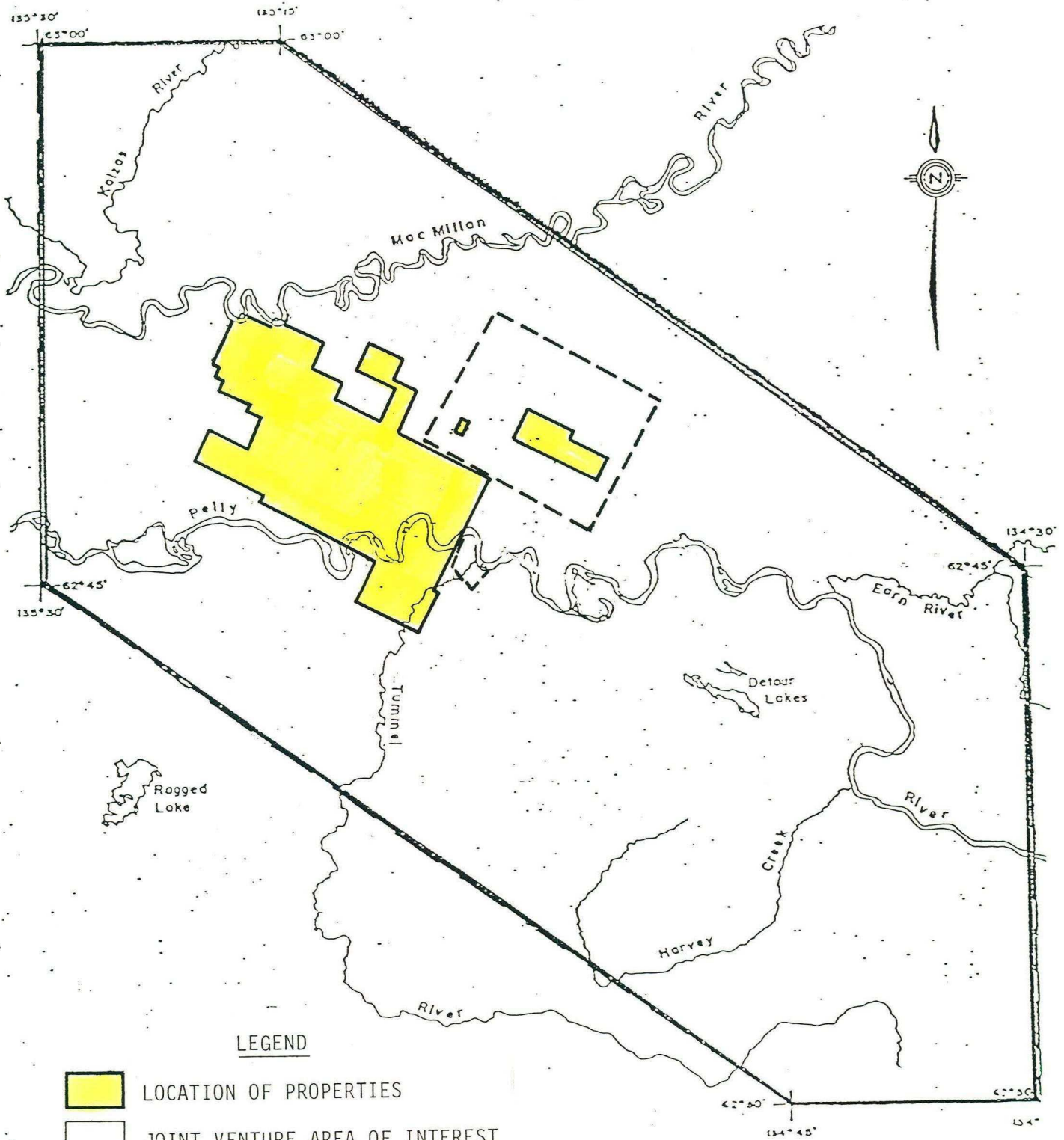
9. This Covenant shall enure to the benefit of TEC and Essex and their successors and assigns and shall be binding upon the Viewer and its successors and assigns.

IN WITNESS WHEREOF the Viewer has executed this Agreement as of the date first written above.




By: \_\_\_\_\_

Title: \_\_\_\_\_

EXHIBIT "A"



LEGEND

-  LOCATION OF PROPERTIES
-  JOINT VENTURE AREA OF INTEREST
-  INDIAN LAND CLAIM BOUNDARY

MACMILLAN JOINT VENTURE  
YUKON TERRITORY

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APPENDIX II

EXPLORATION TARGET SUMMARY

CLEAR LAKE PROJECT

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## EXPLORATION TARGET SUMMARY

### CLEAR LAKE PROJECT

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#### 1.0 Introduction

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The Clear Lake Area is located along the northwest edge of the Selwyn Basin, an area of major shale-hosted stratiform lead-zinc-silver deposits. The Clear Lake deposit, which occurs in Devonian-Mississippian shales referred to as the Clear Lake stratigraphy, is one of these deposits.

The Clear Lake deposit has a geological reserve of 6.1 million tons grading 11.34 percent zinc, 1.99 percent lead, and 1.19 ounces per ton silver at a cut-off grade of 7 percent combined lead-zinc. Twenty-one additional exploration targets were identified by MacMillan Joint Venture prior to 1984. They are located in the immediate vicinity within Clear Lake, Askin, and Anvil Group Stratigraphy. Target areas include AEM-EM conductors, gravity and magnetic anomalies, gossan, alteration zones and mineral occurrences (Figure 3).

The history and technical information of exploration on the Clear Lake Property is documented in many reports (Section 5) written between 1966 and 1985. This report is a short review of the history and the reports available.

Assessment work is required on 490 claims that come due on June 6, 1990. Approximately \$25,000 worth of work must be completed on the claims prior to June 6, 1990. This will allow the claims to be common dated to December 6, 1990. After June 6th, an additional \$50,000 worth of work is needed to validate the claims until December 6, 1991.

This report summarizes 21 target areas and recommends the type of work to be done and the budget required to fulfil the assessment requirements only. It does not cover a more comprehensive exploration budget and plan discussed in Appendix III.

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## 2.0 Summary

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It is recommended that the assessment work be completed in two stages. The objective of the initial stage will be to evaluate 12 of the Target Areas listed on Table I and shown in Figure 3. These are: Areas 1 and 3, 2, 5 and 6, 7, 9, 10, 11, 12, 13, and 14. This will take approximately 10 days and will be carried out prior to June 6th. Three geologists will be required for prospecting, mapping and geochemistry. Soil samples and overburden samples will be taken. Overburden samples will be taken with a Holman Flow-Thru Sampler driven by a Pionjar 120. An expenditure of \$25,000 is needed to common date the claims to December 6th. The details of the budget of \$33,500 is provided in Section 7.0.

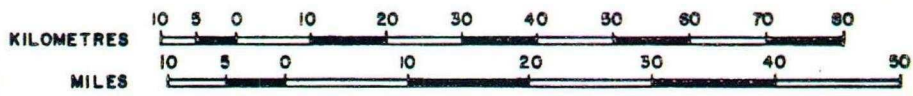
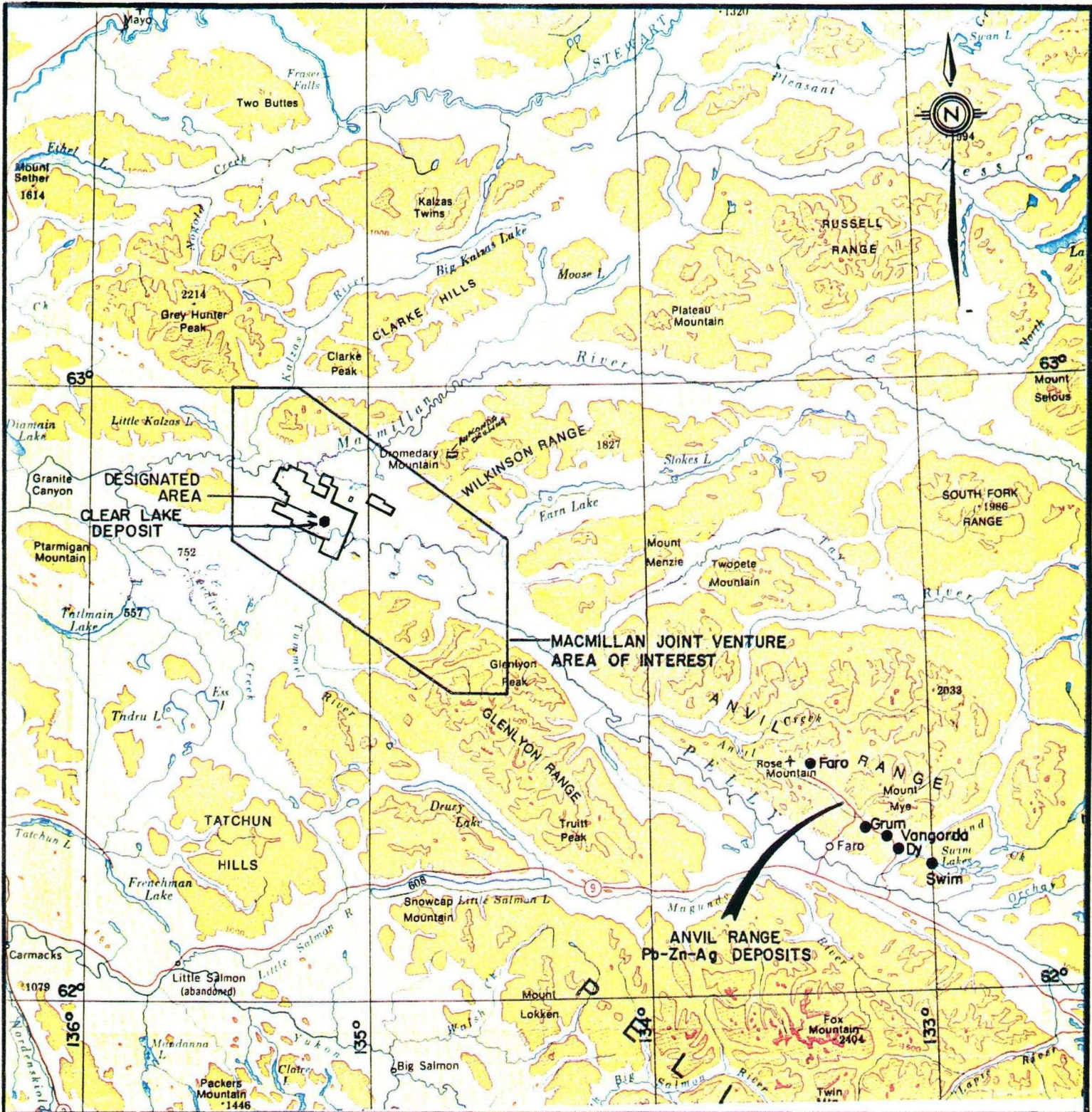


FIGURE 1

<b>TOTAL ENERGOLD CORPORATION</b>	
LOCATION MAP OF MACMILLAN JOINT VENTURE CLAIM GROUPS AND AREA OF INTEREST	
NTS 105 L	SCALE 1:1,000,000

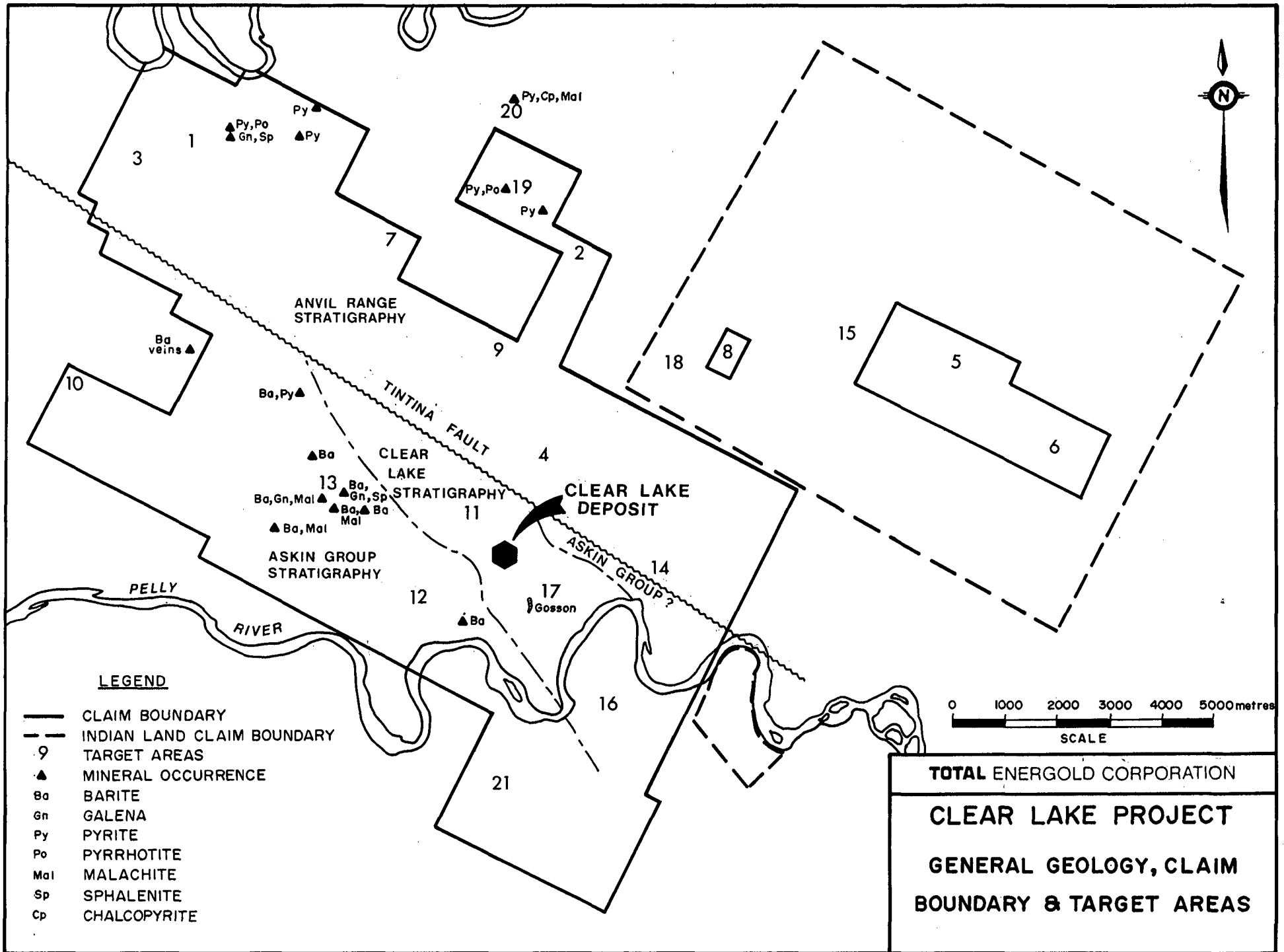


FIGURE: 2

TABLE I  
TARGET AREAS

ANOMALY AREA	GEOPHYSICS	GEOLOGY
1	-EM conductor and coincident 0.2-1.1 mgal gravity anomalies	-sphalerite & galena bands (1") conformable to bedding graphitic phyllites -grab sample results: (one locality) 2.68% Zn, 0.78% Pb, 0.4 opt Ag -DDH 78-3: 143' overburden, final depth 541' -5 DDH during 1983 targetted on combined EM-gravity anomalies. EM anomalies attributed to graphitic shear zones
2	-0.7 mgal anomaly with coincident EM	-outcrop exposures of phyllite (Mt. Mye) -DDH 78-6: 42' overburden final depth 541' -hole intersected graphitic calcareous phyllite with occasional bands of massive Po, minor Py, rare Cpy. -Mg and Cpy outcropping
3	-0.5 to 1.0 mgal anomalies & associated EM & MAG conductors.	-outcrops of mafic volcanic rocks -DDH 78-4: 30' overburden, final depth 467' -hole intersected volcanic tuffs & agglomerate with disseminated magnetite. -Vangorda/Menzie Ck contact. -no geologic information
4	-0.7 mgal anomaly with a strike length of 1,000' & associated EM & MAG conductors	
5	-0.6 to 0.7 mgal anomaly with associated EM conductor	-gossan -DDH 78-11 intersected 1/4" pyrite layer and graphite -no geologic information
6	-0.6 mgal anomaly with a strike length of 1,000' & associated EM conductor	
7	-0.6 mgal anomaly with associated EM conductor	-outcrop exposures of graphitic, calcareous phyllite
8	-0.7 mgal anomaly with associated discontinuous EM conductor	-single outcrop of undifferentiated phyllite -no geological information
9	-0.8 mgal anomaly with associated weak EM conductor in the vicinity	-next to Greyhound Lake
10	-Grid 5W, wide accurate EM conductor and a 0.5 mgal gravity anomaly -gravity partially completed on three lines	-outcrop of siliceous argillite (chert?)
11	-EM conductive zone with associated gravity anomaly	-on strike with Clear Lake
12	-accurate EM conductor, no gravity coverage	-barite and Py along fractures in Askin dolomite and quartzite south of conductor
13	-numerous EM conductors	-outcrop exposures of Askin dolomite on north portion of grid -barite and malachite in fractures in one locality
14	-EM conductor and ground magnetic anomaly	-DDH 94B-1, 1.5' of massive pyrite -volcanics in core
15	-EM conductor and gravity anomaly (G3) with soil geochem anomaly	-on Indian Lands
16	-Gid 5E, 0.6 mgal anomaly associated with EM conductor	-no outcrop -on strike with Clear Lake Stratigraphy
17	-numerous EM and gravity anomalies	-DDH 78-16, crushed zone with graphitic quartz -DDH 81-30, 1" layers of massive py and occasional sph stringers -Indian Lands
18	-gravity anomaly (G26) with related Zn anomaly in soil	
19	-numerous gravity and EM anomalies (G10,11,21,22,24)	-Py, Po in outcrop -DDH 78-5, graphitic schists
20	-no geophysics	-Py, Cpy, & Mal found in outcrop
21	-EM done by Cominco	-DDH T83-1 drilled by Cominco thought to have intersected Clear Lake

The second stage budgeted at \$120,000 will further evaluate stage 1 targets and initial mapping, geochemistry and possibly geophysics, on Areas 4 and 15 to 20. Detailed mapping is also required in the area of the Clear Lake deposit and along the Clear Lake/Askin Group contact to obtain greater structural knowledge about folding, transcurrent and block faulting and possible thrust faulting.

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### 3.0 Claims

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<u>Claim Name</u>	<u>Grant Number</u>	<u>Record Date</u>	<u>Expiry Date</u>
SUE 330-346	Y 80989-80996	11/09/74	11/12/90
SUE 611-616	Y 81261-81266	11/09/74	11/12/92
SUE 635	Y 81285	11/09/74	11/12/92
SUE 2010-2015	YA22730-22735	06/07/78	11/12/92
SUE 2018-2019	YA22946-22947	06/07/78	11/12/92
SUE 2026	YA22746	17/07/78	11/12/92
SUE 2028	YA22748	17/07/78	11/12/92
SUE 3003FR-3005FR	YA59692-59694	07/04/81	11/12/92
SUE 3040FR	YA61583	13/07/81	11/12/92
CLEAR 1-450	YB25815-26264	06/06/89	06/06/90
CLEAR 451-489	YB26265-26303	06/06/89	06/06/90
CLEAR 490			

In March and April of 1990, 103 additional claims were staked to acquire geological favourable ground adjoining the southeast corner of the claim group. The current land position is 621 claims totalling approximately 13,000 hectares.

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### 4.0 History

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- 1965 to 1967**
- 1,000 claims staked; followed by a Mark IV Input EM survey; limited prospecting and mapping, and ground EM surveys.
  - Six EM anomalies were tested by AQ diamond drilling, one of which intersected 1.5 feet of massive pyrite.
  - The claims were allowed to lapse.
- 1974**
- 1,074 claims staked.
  - Essex Minerals Company and Conwest Joint Venture agreement.

**1975 to 1977**

- Ground EM-17 and magnetic surveys over the entire claim group and gravity surveys over selected portions, on bulldozer grid lines spaced 1,000 feet apart.
- Limited prospecting, geologic mapping, and seismic surveys.
- Surveys designed for orebodies 3,000 feet in diameter.

**1978**

- Seven gravity-EM targets were drilled in Anvil Range Stratigraphy, without success.
- Drilling of an EM-17 anomaly south of Clear Lake led to the discovery of the Clear Lake deposit.
- A check on past data from Clear Lake sediments in 1965 to 1967 surveys revealed anomalous zinc values.
- Staking the area south of Tintina Fault.
- Mark VI Input EM survey.

**1979**

- Detailed gravity and ground EM surveys.
- Further drilling of the deposit.

**1980**

- Getty entered into the venture in March.
- Limited detailed geophysical surveys over conductors indicated by the 1978 Input survey.
- Geophysical surveys on the fringe of the Clear Lake deposit.
- Claims care and maintenance.

**1981**

- EM surveys, prospecting, mapping and locating claims.
- Air photography
- Limited diamond drilling of the Clear Lake deposit

**1982**

- Clear Lake Designated Area formed
- Six holes were drilled (6,530 feet)
- Mise-a-la-masse initiated but incomplete
- Gravity survey to confirm previous data
- Max Min II survey carried out to reduce the interpolation associated with portions of the EM conductors, non-substantial change in the previous geophysical interpretation
- In the vicinity of the deposit, twenty overburden holes were drilled and sampled using a Pionjar drill and flow-thru sampler

**General:**

- Claim post location survey, mapping, prospecting and evaluation of previous data.
- Barite pods and veins found in Askin Group rocks
- Compilation at 1:10,000 scale

**1983****Designated Area:**

- 11 miles of line cut, chained and picketed
- All pre-1983 drill collars surveyed, 1983 grid lined tied in
- 11 miles of Max Min II surveyed
- Mise-a-la-masse: 13 body probes, 11 line miles surveyed
- 9 holes drilled, 2 holes extended
- All 1983 holes logged plus 70 percent of pre-1983 holes re-logged

**Non-Designated Area:**

- Linecutting, electromagnetic surveys, magnetic surveys, gravity surveys, mapping
- Overburden sampling (66 percussion holes) and claim location work carried out over 12 areas
- 2,228 feet of BQ diamond drilling in five holes on Target areas 1 and 3 (Grid 17W)
- 1,500 feet of NQ drilling was completed in one hole

**1984****Summary of Work on the Clear Lake Designated Area:**

- Diamond drilling 36 holes totalling 34,309 feet
- Max-Min II totalling 74.1 line miles
- Gravity surveys totalling 32.6 line miles
- VLF EM surveys totalling 8.3 line miles
- Mise-a-la-masse, 18 body probes, 14.3 line miles
- Soil sampling totalling 386 samples
- Overburden drilling of 21 holes
- Trenching of two pits for till fabric studies

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## 5.0 Reports Available

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- 1966** Summary Report, MacMillan Project, Pelly river Area, Yukon, P.O. Hachey, December 15, 1966, Part I and II
- 1976** MJV Sue Claim Group Summary Report, G. R. Kent, October, 1976 (with EM-gravity, Geology and Geochem composites)
- 1977** MJV Sue Claim Group Summary Report, G. R. Kent, November, 1977
- 1978** MJV 1978 Summary Report, 1979, G. R. Kent
- 1979** 1979 Summary Report, G. R. Kent, January 30, 1980 (includes Lake Bottom Sampling and gravity of Clear Lake), 3cc
- 1979** MJV Geophysical Survey August-September, 1979, Grid 1W and 2W, G. R. Kent and C. K. O'Conner, October, 1979
- 1979** 1979 Gravity Survey, Clear Lake, W. J. Sharpe, April, 1979
- 1980** Gravity and EM Maps for grids 1,3,4, and 5, May-June, 1980
- 1980** Review of Geophysical Surveys by Conwest, J. Duncan Crone, April 24, 1980
- 1980** Essex Minerals Company, A review of Exploration on MJV, Ian G. Park, May 13, 1980
- 1980** Gravity Survey Evaluation-Clear Lake Property, Crone Geophysics Ltd., December 8, 1980
- 1980** Gravity Calculation, David Anderson, December, 1980
- 1981** Litho-geochemistry of the Clear Lake Zinc-Lead Deposit, Yukon, K. Maggie McColl, 1981
- 1981** 1981 MJV Summary Report, C. W. Payne (includes Appendices I to VII)
- Appendix III:
- Interpretation of Electromagnetic Surveys Conducted on the MacMillan Joint Venture, Pelly River Area, Yukon, Garth B. Burton, November, 1981
- Appendix IV:
- Clear Lake Property - Sue Claims Gravity Survey, 1981, Ager, Berretta & Associates, Ltd.
- Appendix V:
- 1981 Diamond Drill Program Report, Clear Lake Project by C. G. Verley

Appendix VI:

Report on Assessment of Gravity Data, MJV Sue Claim Group Area, Yukon, A. Spector & Associates Ltd.

Appendix VII:

1981 Orthophoto and Line Maps, MJV

- 1981 1981 MJV Assessment Report, C. W. Payne, August, 1981
- 1981 1981 Anvil Range Reconnaissance Project Summary Report, Nicole Hulstein, June, 1982
- 1981 DEEPEM and Borehole Surveys, F. Hiebert, November, 1981
- 1981 Review of Kenting's Gravity Survey Data in the Sue Claim Group, R. E. Cambell, May, 1981
- 1982 Interpretation of Geophysical Data, Clear Lake, G. B. Burton, May, 1982
- 1982 MJV Clear Lake Gravity Survey, Ager, Berretta, 1982
- 1982 Hole Deviation Tests, R. Vanderhorst, December, 1982
- 1983 Geophysics Memo by J. Hanneson, March, 1983
- 1983 MJV Clear Lake Designated Area 1983 Summary Report, G. E. Norman, April, 1984, (Folder 1 contains Report and Sections on 1983 drilling, Folder 2 contains Geophysics both EM and Mise-a-la-masse)
- 1983 MJV 1983 Summary Report, D. R. Hawke, February 1984, 2 Folders, (Appendices I to VII; maps in back pockets of Text; provides a summary of geology and geophysics on various grids and drilling of Grid 17W)

Appendix III:

Report on 1983 ground geophysical survey by J. Hanneson

Appendix IV:

Report on Gravity Survey, Areas 1,3,4,5, and 6 by G. Ellis; Ager, Berretta and Ellis Inc.

Appendix V:

Report on 1983 Geological Mapping by R. Carny; Archer Cathro and Associates

Appendix VI:

Report on Overburden Drill Program and Surficial Geology, MJV Claims by G. Ovens, Paydirt Mineral Explorations

Appendix VII:

MJV 1983 Diamond Drill Report by D. Hawke and M. Phillips

1983

Clear Lake Designated Area, Work Review and Proposal for Additional Drill, D. R. Hawke, October 24, 1983

1983

1984 Proposed Work Plan and Budget, D. R. Hawke, November 1983

1983

Lithologic and Textural Study of Clear Lake Massive Sulphide Deposit, Kathryn Jane Grapes, Masters Thesis

1983

Comments and Observations on Clear Lake Mise-a-la-masse and HLEM, J. Hanneson, October, 1983

1983

MJV Gravity Survey, Areas 1, 4,5,6, Ager, Berretta and Ellis Inc., November, 1983

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APPENDIX III

1990 PROPOSED EXPLORATION BUDGET

CLEAR LAKE PROJECT

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**TOTAL Energold Corporation**  
**Application for Expenditure**  
**Region: YUKON**

**Project Name:** CLEAR LAKE **Commodity:** Zn,Pb,Ag **Prepared by:** R. Basnett

**Location:** Macmillan River, NTS 105L/14,15 **Date:** January 19, 1990.

**Description:**

The Clear Lake Area is located along the northwest edge of the Selwyn Basin, a known area of lead-zinc-silver mineralization where major shale-hosted stratiform deposits have been discovered in recent years. One of these deposits is the Clear Lake deposit occurring in Devono-Mississippian shales referred to as the Clear Lake Stratigraphy. Twelve additional areas have been found by MacMillan Joint Venture prior to 1984. These target areas include AEM-EM conductors, gravity and magnetic anomalies, gossans, and alteration zones.

**Ownership:**

TOTAL Energold Corporation and Essex Minerals Company own the claims under the MacMillan Joint Venture Operating Agreement.

Clear Lake Designated Area:	TEC	77.96%
	Essex	22.04%
Surrounding Venture	TEC	66.83%
	Essex	33.17%

By not contributing to exploration Essex will be diluted to a 5% NSR. The purchase of this NSR is being negotiated.

**and Status:**

29 claims units are in the agreement, 21 in the Clear Lake Designated Area and 8 in the Surrounding Venture Area. The claims are: SUE 611-616,635,2010-2015,2018,2019,2026,2028,3003F-3005F,3040F(Designated Area) and SUE 339-346, CLEAR 1-490(Surrounding Area). The Clear 1-490 claims require assessment work before June 6, 1990.

**Expenditures:**

Total Expenditures	1,100,000
TEC Expenditures(40%in desig area)	784,000
Less:Staff Charges	
JV o/h 10%	110,00

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Net to TEC 674,000

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**Approvals:**

- 1) Vice President Exploration \_\_\_\_\_
- 2) Vice President Finance \_\_\_\_\_
- 3) President and CEO \_\_\_\_\_

**TOTAL Energold Corporation**  
**Statement of Objectives**

Project Name: CLEAR LAKE Commodity: Zn,Pb,Ag

Prepared by: R. Basnett

Location: Whitehorse-Clear Lk (145 mi); Pelly Crossing-Clear Lk (45 mi);  
NTS 105L/14,15

Date: January 19, 1990

Geological Description:

The Clear Lake deposit is a shale hosted stratiform deposit with a geological reserve of 6.1 million tons grading 11.34% Zn, 1.99% Pb, and 1.19 opt Ag at a cut-off grade of 7% combined lead-zinc. Similar deposits are expected to occur in the immediate vicinity within Clear Lake, Askin, and Anvil Group Stratigraphy.

Exploration Target:

The Clear Lake Deposit is thought to contain between 6 and 10 million tons but further work is required before an accurate reserve can be calculated. Prior to 1984, ground and airborne geophysical anomalies have been identified in the vicinity of the known deposit and in other 12 areas surrounding the deposit.

Objective and how expected to accomplish:

Infill drilling is required to further define the Clear Lake Deposit. Geophysical anomalies will be investigated on the ground to determine local geology and possible reasons for the anomalies. After a thorough examination, follow-up linecutting, geophysics, geochemistry and possible drilling will be carried out. Approximately 40 new claims will be required to cover existing high priority anomalies. A joint venture partner is being sought to earn in by funding exploration. \$50,000 worth of assessment work must be applied to the CLEAR claims before June 6, 1990; therefore; drilling must begin by the beginning of May.

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**TOTAL Energold Corporation**  
**Application for Expenditure**  
**Budget Summary**  
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**Project Name:** CLEAR LAKE **Commodity:** Zn,Pb,Ag **Prepared by:** R.Basnett

**Location:** Macmillan River NTS 105L/14,15 **Date:** January 19, 1990

<u>Acc#</u>	<u>Description</u>	<u>Orig. Request</u>	<u>Inc/Dec</u>	<u>Revised</u>
	Labour (\$10,000 staff)	112,400		
	Fringe Benefits (15%)	15,360		
	Telephone	2,000		
	Stationery & Supplies	1,000		
	Maps & Publications	500		
	Equipment Rental (survey equip, \$1000/mo)	3,000		
	Drafting	10,000		
	Vehicles	6,000		
	Consultants	1,000		
	Contractors-Non-Tech (lncut, 30km@\$550km)	16,500		
	-Tech			
	Aircraft Charter (250hr.@600/hr)	150,000		
	Drilling (6300m@\$80/m, mob.\$11,000)	515,000		
	Fuel Mob (347drums, 24trips@\$1400/trip)	33,600		
	Assays (2000samples Zn, Pb, Ag, Cu, Au, @\$25)	50,000		
	Geochemistry (500samples@7.5/ea)	3,750		
	Geophysics-Ground (20km@\$500/km, \$4000mob)	14,000		
	Geophysics-Airborne EM/Mag			
	Trenching			
	Road Building (runway repair)	5,000		
	Camp Accom&Board (1530manday@\$50/md)	76,500		
	-mobilization	4,000		
	Accomodation (Out of Camp)	4,000		
	Option Payments			
	Travel (5@\$600)	3,000		
	Miscellaneous (frieght to Minto, Clear Lk)	30,000		?
	Instrument and Equipment Purchase (camp)	28,500		
	Government Fees (assessment work)	10,000		
	Legal			
	Claims Staking (40@\$100ea)	4,000		
	Option Payments			
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	Totals	1,100,000		
	less TEC staff charge			
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	Net cost to TEC (assuming 40% of the costs are in the designated area)	674,000		
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