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*Kern
Review
a
Answer*

Minerals Department

Continental Oil Company
6717 Lomas Blvd., N. E.
Albuquerque, New Mexico 87110
(505) 268-3921

March 1, 1974

SX 44

MAR - 4 1974

RECEIVED

Essex International, Inc.
1704 W. Grant Rd.
Tucson, Arizona 85705

Gentlemen:

Subject: Invitation to Joint Venture with Continental Oil Company
at Cerrillos Prospect, Santa Fe County, New Mexico

Continental Oil has conducted mineral exploration including drilling on the Cerrillos Prospect since its acquisition in the fall of 1971. The property block consists of approximately 5,300 acres of fee, unpatented lode mining claims, and a state section.

A great deal of geologic, geophysical, and drill hole data has been accumulated on this prospect. If interested, you are invited to examine this data including drill core at our office in Albuquerque. A copy of a detailed report on this prospect is available for office examination from Mr. B. F. Kern at our Tucson office on 1706 West Grant Road. It is strongly recommended, however, that in order to obtain the best evaluation of this prospect a visit to our Albuquerque office be arranged. The prospect is located within a 45-minute drive of Albuquerque and is easily accessible for field examination.

A very brief summary report of past exploration activities and future recommendations, a geologic and drill hole location map, and a non-exclusive joint venture proposal are attached.

Very truly yours,

Philip J. Sterling
District Geologist/Metallics
Albuquerque District

ms
Enc



Minerals Department

Continental Oil Company
6717 Lomas Blvd., N. E.
Albuquerque, New Mexico 87110
(505) 268-3921

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MAY 6 1974
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May 1, 1974

Mr. J. K. Jones, Chief Geologist
Essex International, Inc.
1704 West Grant Road
Tucson, Arizona 85705

Dear Mr. Jones:

May 22nd fits well on our schedule to review Cerrillos with you. We have a copy of the complete report in our office in Tucson and it may be to your benefit to read it before you arrive here. Then in Albuquerque we could go over any questions you have, look at the core and visit the property. If you are interested in reading the report before you come to Albuquerque, please contact Bill Kern in our Tucson office.

Sincerely,


Philip J. Sterling

jw.

CERRILLOS FARMOUT DRAFT

ACREAGE: Fee - 2,233.40 Lease/Option
State - 340.95 Lease Expires 9/15/81
Unpatented Claims - 3,300.00 Own
5,874.35 Gross and Net Acres
Open Fee in Block - 105.00 Acres

FINANCIAL AND EXPENSE: Capital Inv. to 2/1/74 - 189,379.14
Expense to 2/1/74 - 270,000.00
Land and Lease Holding Costs:
Annual Payments - \$188,900.00 commit by 9/20/74 (1)
59,044.00 commit by 1/1/75 (2)
59,044.00 commit by 1/1/76 (2)
436,085.52 commit by 1/1/77 (3)
Annual Rentals - 170.50 each 9/15 through/74
1,022.85 beginning 9/15/75
Assessment work - 16,500.00 by each 9/1 (4)

- (1) These are final payments to end prices and might be renegotiated to extend.
- (2) Toward end price
- (3) Final payment to end price
- (4) Approximately \$10,000 in work that will qualify for 1974 has been done.

BASIC TERMS OF FARMOUT AGREEMENT:

- A- Farmouttee to commit to the completion by 6/15/74 of a core hole at a mutually acceptable location to a minimum depth of 3500', or less if significant ore, by mutual agreement, is encountered.
- B- On or before 7/1/74 farmouttee to notify Conoco of its election to:
 - 1- Terminate the agreement and thereby be relieved of any further obligations thereunder, all RTI in the lands and/or leases revert to Conoco; or,
 - 2- Proceed into the second phase, fulfillment of the requirements of which will earn the farmouttee the right to assignment of 50% of Conoco's interest in the lands and/or leases subject to the agreement.
- C- In the event farmouttee elects to proceed as in B-2 above, farmouttee thereby commits to:
 - 1- The completion by 9/1/74 of two additional core holes at mutually acceptable locations to a minimum depth of 3500', or less if significant ore, by mutual agreement, is encountered, but, in any event, of such depth that the total footage in the three is not less than 8800'; and

- 2- To notify Conoco by 9/15/74 as to whether it will or will not pay its proportionate share, 50%, of the 1974 rentals and annual payments shown above.
- D- Upon timely completion of farmouttee's drilling obligations in C-1 and its notification of committal to the 1974 rentals and annual payments shown above, Conoco to assign farmouttee 50% working interest in the lands and/or leases subject to this agreement.
- 1- Such assignment to be subject to a mutually acceptable standard form operating agreement which, among other things will provide:
- (a) That the operator will be at Conoco's option
 - (b) That the first three holes, or a minimum of 8500', drilled thereunder, will be free to Conoco.
 - (c) For dilution of either party's interest in the event of non-consent by that party to any additional expenditures incurred thereunder, including leasehold payments.
- E- Should farmouttee fail to timely complete the required drilling and/or to commit to the payments as in D above, the agreement will terminate and all RTI in the lands and/or leases subject to same will revert to Conoco.
- F- Should Conoco elect to withdraw from any further participation and farmouttee has fulfilled its earning requirements as of 9/15/74, then Conoco to offer farmouttee assignment of all its RTI in the lands and/or leases subject to the agreement.

CTC/lav

Revised: 2/19/74

Copies to: APL, WAP, BFK, PJS



Minerals Department

Continental Oil Company
6717 Lomas Blvd., N. E.
Albuquerque, New Mexico 87110
(505) 268-3921

The Northern Cerrillos Prospect
Continental Oil/Metallics Exploration
Summary and Recommendation
February 6, 1974

INTRODUCTION

The Cerrillos property controlled by Conoco-Metallics is on the northern end of the Cerrillos mining district, approximately 15 miles south of Santa Fe, New Mexico. Initial exploration of the area began in the summer of 1971 and subsequent land acquisition has resulted in the following distribution of land holdings at Cerrillos.

1. Unpatented mining claims CER 1-173	3,460± acres)	Conoco Owned
2. State section	340± acres)	
3. Fee land	<u>1,500±</u> acres	

Sections 16,19-21,28-30, T15N, R8E Total 5,300± acres

The area has been mapped on a scale of 1:12000 with selected areas plane-tabled at 1:1200. Also all critical underground workings are mapped at 1 inch = 20 feet. In addition to soil and rock geochemical sampling, ground and air mag, induced polarization, mercury vapor, and petrographic studies have been employed. Drilling on favorable targets began in April, 1972, and to date 52 rotary and core holes have been drilled for a cumulative footage of 23,572 feet.

<u>Type Drill</u>	<u>Total Footage</u>	<u>No. Holes</u>
Rotary	6,292	25
NX Wireline Core	17,280	27
		Average depth 604' (max.-1807' min.-156')

Expenses on the project to date are approximately \$290,000 exclusive of capital outlay for land which is at this point over \$150,000.

GENERAL GEOLOGY

The project area is broadly made up of Cretaceous to Miocene sedimentary rocks that have been intruded by at least four late Tertiary monzonite-diorite intrusives of slightly different ages (TMD 1-4). Extrusive equivalents of the intrusives include mainly pyroclastic tuffs and tuff-breccias. The intrusives are generally quartz-poor and differ mainly in mafic constituents. There does appear to be more K-spar and quartz associated with the youngest intrusive (TMD-3), however.

ALTERATION

Alteration within the area is usually weak propylitic in the younger intrusives although locally the youngest intrusive is potassically altered immediately adjacent to K-spar/quartz veinlets. The older diorite-monzonite porphyry intrusives (TMD-1) are more pervasively altered from moderate argillic to strong sericitic often associated with proximity to younger intrusives.

MINERALIZATION

The Cerrillos district has produced modest amounts of lead, zinc, silver, gold, and copper. Substantial amounts of turquoise have also been produced. Within Conoco's holdings is found, in varying degrees, mineralization of all these types. Veins of high-grade sulfide ore containing Pb-Zn-Ag were mined at the Marshall Bonanza and Trio Claims. Gold-copper ore has been mined at the Evelyn mine. An estimated \$2,000,000 of turquoise was mined from the old Tiffany property on Turquoise hill.

In the northern Cerrillos property, all known copper occurrences are in some way controlled by fracturing. Copper in the form of malachite, azurite, tenorite (common) and often chalcopyrite is found along northeast shear zones, at fracture intersections, in a quartz-breccia pipe, and in stockworks developed in and around a pipe-like intrusive (TMD-3). A single hole in an elongated (NE) quartz breccia-pipe intersected 100 feet of 0.3% Cu and 70 feet of 0.4% Cu within 500 feet of surface. In the stockworks pipe-like body our first drill hole intersected, from surface to 1000 feet, an average of approximately 0.2% Cu with a significant gold credit. The oxide zone at a fracture intersection contains high-grade low tonnage (less than 150,000 tons) ore containing 0.92% Cu, 0.12 oz/ton Au and 0.17 oz/ton Ag. In addition to copper there are several molybdenite shows within the area (200 ppm).

RECOMMENDATIONS

Although much of our drilling has not been in ore grade material, over half of the holes drilled intersected highly anomalous copper values (100 ppm+). It is felt that the possibility of a deep target (3000-5000') is especially good within the area bounded by the quartz-breccia pipe, the Blue Ribbon area (see map), and the stockworks pipe-like deposit in the Evelyn vicinity (roughly one square mile). The stockworks pipe-like body may be an upthrown block of mineralization and represents only the eroded remnant of a larger stockworks system. Also the strongly altered area surrounding Turquoise hill to the north-northwest for at least a mile should be considered for deep drilling.

Proposed Drill Holes and Targets

1. Evelyn vicinity - proposed depth 3500'.
Drill outside the pie-shaped wedge in the Evelyn vicinity to determine if, in fact, the wedge is an upthrown block. This could be done by deepening DDH-7G (west of the wedge) which carried highly anomalous Cu values. Its present depth is 763'. Pink orthoclase veinlets were encountered in the last seven feet of the hole with some pyrite.
2. Evelyn vicinity - proposed depth 2500'.
Northeast approximately 3000', along the contact of TMD-1 and TMD-3. Along this contact is where the mineralization is strongest in the Evelyn vicinity. There is no reason to believe that at depth the same mineralization will not be intersected further to the northeast. In a shallow rotary hole (RDH-7, 160') geochem Cu values increased significantly downhole in the TMD-3 intrusive.
3. Quartz-breccia pipe - proposed depth 1500'.
An angle hole and/or vertical hole to interpret the shape of the pipe and direction of dip. Proposed location would be northwest of the pipe.
4. Blue Ribbon Area - proposed depth 3500'.
The target is the source of disseminated cupriferous pyrite and anomalous molybdenum values in a broad zone around the altered Blue Ribbon zone. DDH-20 intersected 1000 feet averaging 0.05% to 0.1% Cu. DDH-15, approximately 1000 feet northeast, intersected significant intervals of over 100 ppm Mo and 0.05% Cu.
5. Turquoise hill - proposed depth 2500 feet.
A broad northwesterly trending zone of strongly argillized and silicified monzonite-diorite porphyry (TMD-1) extends for over a mile to the northwest of Turquoise hill and is underlain by a moderately strong magnetic body that has thus far not been intersected in drilling. The magnetic anomaly has been picked up in both air and ground surveys. Estimated depth to the anomaly is estimated at 2000 feet. The target would be a deeply buried stockworks/disseminated body.
6. Evelyn vicinity - proposed depth 3500 feet.
East of the Evelyn wedge in an altered zone (argillic) between the Evelyn and Marshall Bonanza.



Frederick J. Jenkins, Jr.
Geologist/Metallics
Albuquerque District

CERILLOS NEW MEXICO.

On assay sheets are occasional notes that gold assays duplicates do not check. In one instance assayer shows 3 and 33 ppm from same sample and suggests gold may be occurring in flakes. Some Cu & Ag assays also reported in ppm and could be poor quality work.

In add 1 a 4.48% Cu assay from 250-255 ~~exerts~~ exerts considerable influence on average grade of oxide section. ~~Frank~~ ^{Fred} Jenkins^{jr} (?) project mgr.

La Cienega exit

ddk 25 6500' of ddk 15
 4325' up from all diorite
 less than 4% FeS₂, a few hundredths Cu
 ddk 26 50,620' from ddk 15
 0.1% FeS₂, a few hundredths Cu
 to clay, diorite, with propyl
 below 255' - all flooding
 ddk 27 485' 25' NW of ddk 15
 diorite, with propyl
 propyl to clay, 25-27' flooding
 3%

ddk 23 3000' 400' E of ddk 15
 607' diorite, with propyl to clay, with K-sprayed
 1/2 to 3/8 FeS₂, minor CuS₂, 1.0% - of Cu
 ddk 24 - 250' SSE of ddk 15
 586' diorite, with propyl to clay, with K-sprayed
 same than 1/8 FeS₂, locally up to 3/8
 2.1% CuS₂

ddk 12 from NW corner sec 29
 862' 138°W 1026' N
 propyl - breccia
 pipe - 0-785' - in situ diorite
 785-862' with propyl
 3% FeS₂, minor CuS₂

ddk 20 is 100' N, 300' E of ddk 15
 1407'
 diorite, with propyl breccia
 with FeS₂, CuS₂
 best mag. - 4% 970-1220' 3.6% 0.1% Cu
 1.5%

312' 0-60' pul
 60-312' 1-2% FeS₂
 30 ppm Cu
 65-80' 55'
 5.2% FeO of the FeS₂, 55 ppm Cu
 Geology inferred by drill hole data
 105' 105' of Ande. fm
 105-116 55% shale (Mussel)
 5% FeS₂, calcite veins
 45 ppm Cu 30-40' dip
 DDH-11 1156'
 79-1033 mus. pr.
 1033-1083 87% shale
 1083-1504 diorite
 with propyl & weak clay
 up to 10% FeS₂, minor PbS
 background Mo & Cu
 DDH-8
 DDH-4 - 558' sediments
 3% FeS₂ on FeS₂ in fracture
 background values
 dip NE 30-40°
 calcite - FeS₂ veins

763' diorite
 mod. propyl
 1-3% FeS₂, some magnetite
 100 ppm Cu
 K-spr veins at bottom
 of hole
 DDH-1 1034' hdy. diorite
 0-260' 33% Cu, 24% FeS₂, 0.3% Au
 sub 260-1034 18% Cu, 0.24% Au
 DDH-2 418' diorite
 with propyl
 3-4% FeS₂
 100 ppm Cu
 DDH-16
 Marshall Bonanza Mine
 319' ddk 10 up to 100' up
 0.3% Cu, 0.3% Au
 other intervals at depth
 up to 5.2% Cu
 with propyl to breccia
 100 ppm Cu
 5-10% FeS₂
 50 ppm Cu
 west side:
 0-235' mus. pr.
 235-400 87% shale
 with mus. pr.
 3-5% FeS₂
 minor breccia, less than
 background
 1012' 48' pul
 alternate tufts of diorite
 with weak clay & propylite (in situ)
 5-10% FeS₂, 50 ppm Cu
 525' tufts
 5-10% FeS₂
 100 ppm Cu
 background values
 369' 0-38' pul
 38-261 tuft, weak mod clay
 261-369 diorite
 1-3% FeS₂, propylite
 DDH-19 480' 65' pul
 tufts & tufts breccia
 matrix, unmineralized
 50 ppm Cu !!
 781' sericitized breccia
 2-10% FeS₂, background values
 DDH-19 480' 65' pul
 0-30' 40'
 30-381 diorite, clay, 11
 30-381 diorite, clay, 11

EXPLANATION

- Qal Quaternary Ancha Formation or Alluvium
- TMD - 4 Tertiary Intrusive Rocks (relative age unknown)
- TMD - 3 Hornblende - Biotite Diorite
- TMD - 2 Diorite - monzonite
- TMD - 1 Diorite - monzonite porphyry
- Pyroclastic Volcanic Rocks
- Mesozoic Sedimentary Rocks (undifferentiated)

Scale: 1" = 1000'

LUCERAS HILL

Mt. MCKENZIE

DISTRICT Albuquerque		AREA AND TYPE OF MAP Geology of Northern Cerrillos Hills	
SURVEY		STATE New Mexico COUNTY Santa Fe	
REFERENCE		SCALE 1" = 1000'	CONTOUR INTERVAL
NOTES AND REVISIONS		CONTINENTAL OIL COMPANY MINERAL EXPLORATION DEPARTMENT METALLICS DIVISION ALBUQUERQUE NEW MEX.	
Revised Sept. 72 - H.M. Aug. 73 - F.J.U.		DATE Dec. 71	SIZE 24 X 24
DRAWN BY A.A. Lopez		DATE	FILE NO.

