

003591

May 26, 1978

Mr. D. B. Craig  
Regional Geologist  
Indian and Northern Affairs  
Geology Section  
200 Range Road  
Whitehorse, Y.T.  
Y1A 3V1

Dear Sir:

We have perused the DIAND Mineral Industry Reports for our several base metal and coal properties and have no objection to their being published without further amendment.

The Company will be active in the Pelly Mountain and general Anvil Range area in 1978. Additional work is also proposed on the South Carmacks coal area.

Yours truly,

CYPRUS ANVIL MINING CORPORATION

J. G. Simpson  
Vice President, Exploration

Encl.



Indian and Northern Affairs

Affaires indiennes et du Nord

Geology Section  
200 Range Road  
Whitehorse  
Yukon Terr.  
Y1A 3V1

Your file / Votre référence

April 14, 1978.

Our file / Notre référence

MAY 16 1978

Dear Sir:

Enclosed are reports on each of your properties in the Yukon which have been prepared for inclusion in the D.I.A.N.D. Mineral Industry Report, Yukon Territory 1977. I would appreciate your checking it for accuracy and deleting any information you wish to be omitted. Please feel free to add any pertinent material. One copy of each report should be returned with your comments, the second copy is for your files. Your prompt attention to this matter will be greatly appreciated.

We would appreciate if you could also let us know whether you will be operating in the Yukon this summer and in what general area(s).

Yours truly,

*[Handwritten signature]*  
D.B. Craig  
Regional Geologist.

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DIAND Mineral Property

We have reviewed the property reports for several <sup>base metal</sup> properties and have no objection to their being published without further amendment. The Company will be active in the Pelley Mountain and general Arvid Range area in 1978. Additional work is also proposed in the South Caribou coal area.

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URN  
Cyprus Anvil  
Mining Corporation

Barite  
105 K 6  
(62°22'N, 133°33'N)

Reference: Tempelman-Kluit (1972).

Claims: URN 1-131

Location and Access:

The claims are situated on the north slope of Rose Mountain, 6.5 km west of the Anvil open pit. Access is by helicopter from the mine site.

History:

The claims were staked in 1977.

Description:

Two barite horizons occur in the Devonian to Mississippian Earn Group.

Current Work and Results:

The claims were mapped geologically at a scale of 1 inch = 1,000 feet.

LOWER ANVIL CREEK  
Cyprus Anvil Mining  
Corporation  
Preussag Canada Limited

105 K 5  
(62°27'N, 133°48'W)

References: Roddick and Green (1961a); Tempelman-Kluit (1972); Sinclair and Gilbert (1975, p. 56); Morin et al (1977, p. 158).

Claims: LORNA 1-40; ARO 1-40 50, 59; GRAN 1-6, 13-24; ROTO 17-50

Location and Access:

The claims are located along lower Anvil Creek about 24 km northwest of Faro. Access is by helicopter from Faro.

History:

The claims were staked in 1970 following airborne magnetic and EM surveys. The claims have been mapped and one 576 foot hole was drilled.

Description:

The claims are situated in the same stratigraphic package that contains the Faro-Vangorda deposits. In particular, the claims are underlain by calcareous phyllite and calc-silicate unit rocks with some graphitic conductors indicated. A large scale D<sub>1</sub> fold, also found at the Faro Deposit, locally repeats the stratigraphic section in this area.

Current Work and Results:

All the claims were mapped at a scale of 1 inch = 1,000 feet and Turam, IP, and gravity surveys were conducted on all the claims. On GRAN 15, a diamond drill hole tested a gravity anomaly and cut 152 m of Anvil Batholith. On ARO 24, a drill hole tested a coincident gravity and turam anomaly intersected 337 metres of barren Anvil Mine stratigraphy.

NORTH ANVIL RANGE  
Cyprus Anvil  
Mining Corporation  
Metallgesellschaft  
Canada Limited

Lead, Zinc, Silver  
105 K 6, 7  
(62°20'N, 133°00'W)

References: Tempelman-Kluit (1972); Morin et al (1977, p. 162).

Claims: AM, FAT, FIN, JET, LISA, MX, SARK, TAF, TIM, ZAN, MYE: A total of 400 claims

Location and Access:

The claims are situated north of the Anvil Batholith about 13 km from the Anvil Mine. Access is by helicopter from Faro.

Description:

The claims are underlain by a variety of rock types which include, from oldest to youngest, a high grade metamorphic schist of siliceous to pelitic composition lying adjacent to the Anvil Batholith, the Faro sequence, a calc-silicate unit, and pelitic phyllites with marked graphitic horizons. Overlying this sequence of rocks is the KD volcanic package of rocks.

Current Work and Results:

A gravity survey was conducted on the MYE-SARK and FAT-FIN groups. All the claims were remapped at a scale of 1 in. = 1,000 ft.

ANVIL MINE  
Cyprus Anvil Mining  
Corporation

Lead, Zinc, Silver  
105 K 2, 3, 6, 7  
(62°21'N, 133°22'W)

References: Chisholm (1957); Roddick and Green (1961a); Green and Godwin (1964, pp. 31-32); Green (1965, pp. 36-37; 1966, pp. 47-50); Findlay (1967, pp. 35-39; 1969a, pp. 43-45; 1969b, pp. 29-30); Tempelman-Kluit (1972); Craig and Laporte (1972, pp. 94-96); Brock (1973); Sinclair and Gilbert (1975, pp. 50-52); Sinclair et al (1975, pp. 128-129); Sinclair et al (1976, pp. 115-116); Morin et al (1977, pp. 157-157).

Claims: FARO, GAL, ED, SUN, RICH, DY, GALE, DEA, LEA, PEA, SEA, SB, DP, KAY, MOR, SINK, LO, TIE, ROCK, BILL, CAPA, DELTA, ECHO, JANICE, KIT, GAL: approximately 1,600 claims

Location and Access:

The Anvil Mine is situated 230 km northeast of Whitehorse in the Anvil Range. Ore concentrates are trucked to Whitehorse via roughly 402 km of all-weather roads and then transferred to the White Pass and Yukon Route for shipment by rail to Skagway.

History:

The mine was brought into production late in 1969 and, except for brief shutdowns due to labour problems, has been in continuous production since. In 1975, Anvil merged with Dynasty Explorations Limited to form Cyprus Anvil Mining Corporation.

Description:

The host rocks on the property consist of pelitic schist which are overlain by calc-silicate phyllite (Unit 2, Tempelman-Kluit, 1972). The regional trend of the schist and phyllite is to the northwest, with dips averaging 20° to the southwest. Locally, the structure is complex, with at least five stages of deformation recognized by company geologists. The ore occurs in a series of massive sulphide zones along a 6,600 foot strike length. The ore zones are tabular in longitudinal section and lenticular in cross section and are generally conformable to the enclosing schist and phyllite host rocks. Galena and sphalerite, associated with pyrite and pyrrhotite, are the principal sulphide minerals.

### Current Work and Results:

The new discovery on the DY group, situated 19 km southeast of the Anvil Mine and 14.5 km by road from the town of Faro, continued to be drilled during 1977. Eleven holes were drilled in addition to the 1976 discovery hole and eight of these intersected a sequence of banded and massive sulphide horizons with lead-zinc-silver mineralization varying in thickness between 6 and 61 metres. This deposit occurs on a moderately dipping limb of a major antiform at between 549 and 733 metres below surface. Mineralization extends in excess of 1 524 metres along strike and varies in width up to 457 metres. Six drill holes encountered sections 3 to 25.6 metres thick of greater than 10% lead-zinc combined. The best continuous assay is 25.6 metres of 6.37% lead, 11.85% zinc and 115 gm/metric ton silver.

Gravity and Turam surveys were conducted on the CAPA, DELTA, ECHO, JANICE KIT and SEA claims. A Turam survey was conducted on the GAL claims.

#### OPERATING SUMMARY - 1974-1977

	1977	1976	1975	1974
Tons Milled - Dry				
short tons (000s)	3,435	1,675	3,225	2,925
Daily rate				
(short ton)	9,410		8,983	8,865
Mill Heads:				
Lead (%)	2.74	2.66	9.44)	10.11)
Zinc (%)	4.88	5.48	comb.	comb.
Silver (oz/ton)	1	1	1	1
Ore reserves				
(million tons)	41.3	44.7	46.4	49.7

Annual Report 1977.

ANISE  
Cyprus Anvil Mining Corporation Limited

105 F 10  
(61°40'N, 132°45'W)

References: Tempelman-Kluit (1977); Morin et al (1977).

Claims: ANISE 1-64

Location and Access:

The property is located in Seagull Creek Valley immediately south of Seagull Lakes. Access is provided by helicopter or float plane from Ross River, 48 km to the north. A tote road passable by 4 wheel-drive vehicles passes through the claim group and connects it with the South Canal Road at Groundhog Creek, 19 km to the west.

History:

ANISE claims 1-48 were recorded in July 1976 and 49-64 in August 1976. The claims were staked to cover geochemical anomalies and float occurrences of galena, sphalerite and pyrrhotite found as a result of a regional prospecting program by the Pelly Project, a joint venture exploration program carried out by Cyprus Anvil Mining Corporation and Hudson Bay Oil and Gas. During summer 1976, geochemical soil sampling and prospecting programs were carried out.

Description:

The property lies in an overburden covered valley bottom area and little bedrock is exposed. Those rocks which do outcrop are black, pyritic shale and schistose greyish-green volcanics of intermediate composition and probable Mississippian age. The linear nature of the valley suggests that it marks the site of a NW-SE trending fault, the "Seagull Fault". West of Seagull Valley, shale and limestone of the Kechika Formation of Cambrian to Ordovician age occur whereas east of the Valley, Mississippian volcanic rocks of intermediate composition occur.

Current Work and Results:

During summer 1977, the property was subjected to more detailed geochemical soil sampling for Cu, Pb, Zn, magnetic and VLF electromagnetic surveys and locally, shootback and horizontal loop EM surveys. A strong EM conductor was located along with several non-coincident magnetic anomalies. The EM conductor was ascribed to graphitic phyllite and the magnetic anomaly to magnetite-bearing volcanic rocks. Further work consisting of Turam EM, IP or gravity surveys was recommended by a company geologist.

BNOB  
Cyprus Anvil Mining Corporation

Lead, Barite  
105 F 10  
(61°35'N, 132°30'W)

References: Tempelman-Kluit (1977); Morin et al (1977).

Claims: BNOB 1-24

Location and Access:

The property is located in the valley of the McConnell River, 48 km south of Ross River. Access is provided by helicopter from Ross River.

History:

Claims BNOB 1-16 were recorded in July 1976 and BNOB 17-24 in September 1976. The claim group was staked as a result of a regional prospecting program carried out by the Pelly Project, a joint venture exploration program of Cyprus Anvil Mining Corporation and Hudson Bay Oil and Gas. In 1976, a detailed geochemical soil sampling and prospecting program was conducted.

Description:

The property is underlain by a Mississippian volcanic and volcanoclastic sequence which overlies medium to dark grey limestone of Silurian age. Forming the basal portion of the Mississippian sequence here is a siliceous, medium to dark grey phyllite. Overlying this is a unit of pyritic, felsic tuff and lapilli tuff, within which occurs a bed of layered barite about 9 m thick. Thin layers of pyrite and very sparsely disseminated galena occur within the barite. Capping the felsic tuff unit is a blocky weathering, medium-grained, felsic flow. The flow is brownish-grey, non-pyritic and contains white plagioclase phenocrysts in an aphanitic matrix.

Current Work and Results:

During summer 1977, magnetic and shootback electromagnetic surveys were carried out over the grid on the property. In addition, a small part of the grid was surveyed by Radem VLF electromagnetic methods. A large magnetic anomaly was determined which probably corresponds to a subcrop of ultramafic rocks. An EM conductor was determined and found to be coincident with the magnetic anomaly. No significant conductors were detected by the Radem survey and no geophysical anomalies at all were detected within or along strike of the barite horizon. No additional work was recommended by a company geologist.

BOT  
Cyprus Anvil Mining  
Corporation

Asbestos  
105 G 10  
(61°40'N, 130°55'W)

Reference: Tempelman-Kluit (1977b).

Claims: BOT 1-10

Location and Access:

The claims are located on Big Campbell Creek, 8 km south of the Robert Campbell Highway. Access is provided by a tote road from the Highway.

History:

The claims were staked in September 1976 to cover showings of asbestos which outcrop on Big Campbell Creek. The showings were originally discovered and staked in 1969 by Atlas Explorations Limited who carried out line cutting, geological mapping and magnetic surveys on the property.

Description:

The property is underlain by a sequence of Mississippian sedimentary and volcanic rocks that have been metamorphosed into chlorite sericite phyllite (Unit PPPk3, Tempelman-Kluit, 1977b). These rocks have been intruded by a dyke of serpentized peridotite that trends easterly and ranges from 60 m to 150 m in width. Asbestos fibre occurs in narrow veinlets within the dyke.

Current Work And Results:

During summer 1977, the property was subjected to a ground magnetic survey along the old grid, with stations at 100 foot intervals along lines spaced 400 feet apart. Several linear northwest trending magnetic highs were determined along the east side of Big Campbell Creek. Recommended further work consists of cat trenching with a ripper to evaluate the main magnetic anomalies.

IRMA  
Cyprus Anvil Mining  
Corporation

Lead, Zinc  
105 K 11  
(62°36'N, 133°24'W)

References: Findlay (1967, p. 39); Tempelman-Kluit (1972); Sinclair and Gilbert (1975, pp. 59-60); Sinclair et al (1975, p. 133; 1976, p. 125).

Location and Access:

The property is situated about 37 km north of Faro. Access is by helicopter from Faro.

History:

Airborne magnetic and EM surveys, ground magnetic surveys, Turam EM and gravity surveys were previously conducted on the property.

Description:

There is no outcrop on the property.

Current Work and Results:

Two lines of IP were run over a previously detected gravity anomaly on claims 8, 9 and 24. A strong anomaly coincident with a gravity anomaly was outlined.

EROS  
Cyprus Anvil Mining Corporation

105 F 9  
(61°36'N, 132°21'W)

Reference: Tempelman-Kluit (1977).

Claims: EROS 1-8

Location and Access:

The property is located 44 km south of Ross River, about 5 km southeast of Peak 7001. Access is provided by helicopter from Ross River. A serviceable summer road is present in the Ketz River valley, 8 km to the east.

History:

The claims were staked in August 1976.

Description:

The property is underlain by Upper Cambrian to Ordovician phyllite that is in fault contact with volcanic and volcanoclastic rocks of Mississippian age (Tempelman-Kluit, 1977).

Current Work and Results:

During summer 1977, the property was subjected to geochemical soil sampling, magnetic and electromagnetic surveys. Sixty-six soil samples were collected at 200 foot intervals along lines spaced 800 feet apart and analyzed for Cu, Pb, Zn. Several anomalous values were determined, some of which may be related to surficial limonite enrichment. No anomalies were determined by the magnetic survey, but a strong flat-lying conductor close to a shale-volcanic contact was determined by the electromagnetic surveys. Further work consisting of hand trenching and short hole diamond drilling was recommended by a company geologist.

BID  
Cyprus Anvil Mining  
Corporation

105 F 10  
(61°36'N, 132°40'W)

Reference: Tempelman-Kluit (1977b).

Claims: BID 1-24

Location and Access:

The property is located on the east side of Seagull Creek in the Pelly Mountains, 45 km south-southwest of Ross River. Access is provided by helicopter from Ross River or by a tote road along Groundhog Creek from the South Canal Road, 19 km to the west.

History:

The claims were staked in May 1977 by J.M. Graham, J.B. O'Neill and J.B. Rolls and optioned to Cyprus Anvil Mining Corporation in July 1977.

Description:

The property is underlain by a sequence of shale, chert magnetite-siderite iron formation, and volcanoclastic rocks of Mississippian age that have been intruded by a hypabyssal syenite stock of probable contemporaneous age. Several boulders of sulphide-rich float were discovered on the claim group. They consist of two types: coarse-grained sphalerite and galena in a quartz-carbonate matrix and fine-grained massive pyrite. A grab sample of the former type is reported to assay 9.60% Zn, 47.6% Pb, 35.5 oz Ag/ton and the latter type 8.60% Pb, 2.20% Zn, 2.2 oz Ag/ton.

Current Work and Results:

During summer 1977, geological mapping (1:4800), prospecting, geochemical soil and stream sediment sampling, ground magnetic and electromagnetic surveys were conducted. A total of 148 stream sediment and soil samples were taken at 400 foot intervals from the two streams draining the claim group. In addition, 97 soil samples were collected over an area of anomalous response at 200 foot intervals along lines spaced 400 feet apart. A coincident Cu-Pb-Zn anomaly was determined over the cherty tuff unit. The geophysical surveys were conducted on the same grid as the detailed geochemical soil sampling survey, but no electromagnetic conductors were determined. A company geologist recommended no further work be done on the property.

PIG, KATE  
Cyprus Anvil Mining  
Corporation

Copper, Lead, Zinc  
105 J 2  
(62°14'N, 130°36'W)

References: Roddick and Green (1961); Sinclair et al (1976, p. 169); Morin et al (1977, p. 214).

Claims: PIG 1-50; KATE 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 33-60, 65-92

Location and Access:

The property is located in the Pelly Plateau, 18 km northwest of Traffic Mountain and 97 km east-northeast of Ross River. Access in 1977 was provided by float equipped fixed wing aircraft to Pike Lake (unnamed lake 10 km to the south) and from there by helicopter to the property.

History:

The KATE claims were staked in January 1975 by Welcome North Mines over a previously known property discovered in 1956 by Kennco Explorations Limited (Sinclair et al, 1976). Geochemical soil sampling in 1975 determined several coincident lead and zinc anomalies and several discontinuous lead anomalies. Cyprus Anvil staked the adjoining PIG claims in July 1976 and through a geochemical soil sampling program, determined two east-west trending irregular zones anomalous in lead. In 1977, Cyprus Anvil optioned the adjoining KATE group from Welcome North Mines.

Description:

The property is underlain from oldest to youngest by the following sequence of rocks:

- calc-silicates, commonly quartz-diopside-actinolite-biotite skarn with minor bands of marble limestone and amphibolite
- shale, black and siliceous and black to silvery-grey weathering (contains Monograptus)
- light grey to black weathering, black thick bedded chert (graptolitic)
- thick to thin bedded, dark to vari-coloured weathering, black, light grey, white, green and red chert
- light grey weathering, interbedded grey to greenish-grey shale with lenses, pods and thin beds of grey limestone.

Intrusive to this sequence are dykes and sills of diorite thought to be Tertiary in age.

Mineralization consists of discontinuous bands, irregular patches, small blebs, fracture fillings and disseminations of varying amounts of pyrite, pyrrothite, chalcopyrite, galena and sphalerite within the calc-silicate unit. In addition, float boulders of layered sphalerite and galena in black shale and quartz-arsenopyrite-galena veins have been discovered on the KATE ground.

#### Current Work and Results:

During summer 1977, geological mapping (1:4,800), geochemical soil sampling, rock chip sampling, ground magnetic and electromagnetic survey programs were conducted. A total of 830 soil and 114 rock samples were collected and analyzed for Cu, Pb, Zn. Soil samples were collected at 200 foot intervals along lines spaced 800 feet apart and in areas of interest, 100 foot intervals along lines spaced 400 feet apart. Several elongate soil lead anomalies were determined within interbedded black shale and chert and grey shale and chert. Anomalous lead values obtained from the rock chip sampling program occur in quartz-arsenopyrite veins and fracture fillings and light grey chert. Electromagnetic measurements were taken every 100 feet (50 feet in anomalous areas) along lines spaced 400 feet apart. Magnetic measurements were taken at 50 foot intervals (25 feet in anomalous areas) along the same lines. The electromagnetic survey outlined several multiple conductors interpreted to be largely due to graphite coatings on sheared surfaces within the black graphitic chert horizon. Two magnetic anomalies were interpreted to outline intrusions at depth which may be responsible for the quartz-arsenopyrite mineralization. No further work was recommended by a company geologist.

TANTALUS BUTTE MINE  
Cyprus Anvil Mining  
Corporation

Coal  
115 I 1  
(62°15'N, 136°07'W)

References: Bostock (1936, pp. 59-62); Green (1966, pp. 121-124); Findlay (1967, p. 88; 1969a, p. 15; 1969b, pp. 66-67); Craig and Laporte (1972, pp. 155-156); Sinclair and Gilbert (1975, pp. 121-122); Sinclair et al (1975, p. 168; 1976, p. 172); Morin et al (1977, p. 218).

Lots and Leases: 2959; Lot 23

Location and Access:

The mine is situated on the north bank of the Yukon River, 6.4 km north of Carmacks and 1 km from the Whitehorse-Mayo Road.

History:

The Tantalus Butte Mine began operation in 1923, supplying coal to Carmacks and Dawson and later the mill at United Keno Hill Mines, Elsa, until 1967. In 1969, the mine began supplying coal to the Anvil Mine where it is used for plant heating and concentrate drying.

Description:

The coal occurs in the Tantalus Formation of Upper Jurassic (?) and Lower Cretaceous age, consisting of conglomerate with lesser amounts of sandstone, shale and a few coal seams. The main seam ranges from 0 to 14 feet thick, strikes north and dips 45° to 70° west. The seam is displaced by steeply-dipping, northeast- to northwest-trending faults. Although fault displacement is only on the order of a few feet or more, mining is rendered difficult. The coal is a high volatile, bituminous coal with calorific value ranging from 11,000 to 12,700 BTU. Samples are agglomerating with a swelling index of 1 (ASTM) and are not suitable for metallurgical grade coke (Green, 1966, p. 124). There is also another coal horizon near the top of the Laberge Group (Lower to Middle Jurassic).

Current Work and Results:

On the Carmacks North Coal leases, adjacent to the mine, geophysical surveys consisting of Resistivity, IP, gravity, EM-16 and down-hole logging were conducted. Six trenches were dug by bulldozer and 20,000 tons of coal were stripped by bulldozer and scraper. A program of 42 holes of 5 1/2 inch rotary-percussion drilling totalled 3 476.8 metres. Further ore reserves were outlined.

Five Finger Coal Leases	Coal
Cyprus Anvil Mining Corporation	115 I 1
Teslin Exploration Limited	(62°12'N, 136°19'W)

Lots and Leases: Lease 2964; Lots 4, 5, 6

Location and Access:

The lease and lots are located 12.9 km north of Carmacks. Access is by boat on the Yukon River or by helicopter from Carmacks.

Description:

Coal occurs as seams within the mid-Jurassic Laberge Group.

Current Work and Results:

The leases and lots were mapped geologically at a scale of 1:50,000.

Carmacks South Leases	Coal
Cyprus Anvil Mining	115 I 1
Corporation	(62°04'N, 136°15'W)
Teslin Exploration Limited	

Lots and Leases: Leases 2949, 2954, 2965, 2967,  
2776-2980

Location and Access:

The leases are situated 1.6 km southeast of Carmacks and are accessible by trails from the town.

Description:

Coal occurs as a seam in the mid-Jurassic Laberge Group.

Current Work and Results:

Resistivity, IP, gravity and EM-16 geophysical surveys were conducted on the leases and resulted in the definition of drill targets.