

GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL REPORT

ON THE

BRIE AND AU CLAIMS

GROUPS 1 TO 9

WHITEHORSE MINING DIVISION

JUNE TO AUGUST, 1976

LOCATED

41.6 Kilometers southwest of Ross River

133°14'W

61°51'N

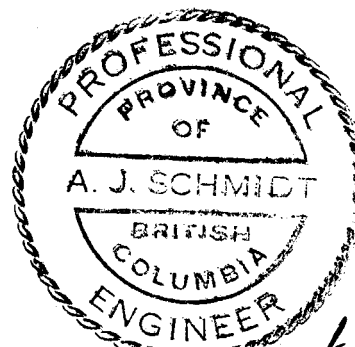
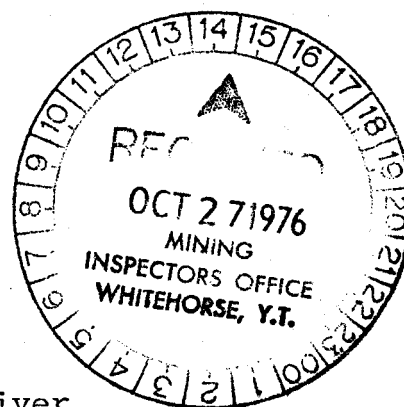
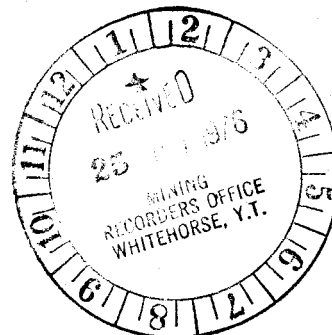
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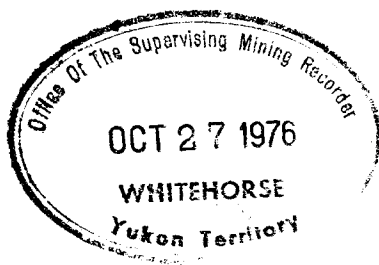


A. Schmidt
Oct. 20/76

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This report has been examined by the Geological Evaluation Unit and is recommended to the Commission to be considered as representation work in the amount of \$ 61,000.00

W.D. Sinclair

~~Resident Geologist or~~
~~Resident Mining Engineer~~

Considered as representation work under
Section 53 (4) Yukon Quartz Mining Act.

[Signature]
Commissioner of Yukon Territory

ILLUSTRATIONS

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SUMMARY AND CONCLUSIONS

Utah Mines Ltd. examined the Au-Brie claims from the 6th of June to the 26th of August, 1976 with a crew of eleven (11) men. Geological mapping, geochemical soil and silt surveys, a claim survey, as well as magnetic, electromagnetic and gravity surveys were carried out over a large portion of the Au-Brie claim block. The claims are located 41.6 kilometers southwest of Ross River, Yukon Territory.

The Au-Brie claim block is underlain by orange weathering, grey and black phyllites with abundant volcanic tuff lenses. These Cambro-Ordovician rocks are equivalent in age to the Kechika Group of Gabrielse (1963).

The rocks have been strongly deformed and imbricated by north-easterly directed thrusts and intruded by granitic batholiths during Middle Cretaceous. No batholiths have been found on the claim block but a late system of dioritic and andesitic dykes intrudes the phyllites within the claim area.

The best mineralization on the Au-Brie property is found in boulders in Brie Creek. These boulders consist of banded sulphides within a siliceous matrix. Where mineralization has been found in outcrop, it occurs as 0.5-1.0 meter siliceous lenses within the phyllites and appears to parallel transposed bedding. These siliceous lenses have been found to host quartz, pyrite, chalcopyrite mineralization and quartz, pyrite, sphalerite mineral assemblages. Both types of mineral occurrences have been found in boulders in Brie Creek.

The magnetics show little variation over the grid area covered. Readings range from 1,240 gammas to 1,340 gammas from a base level of 57,000 gammas.

Anomalous EM responses occur on the north part of the grid between tie lines 110+00N and 120+00N. There is also a broad anomalous response on the central part of the grid. This conductive body appears to be dipping gently northward.

No positive gravity anomalies have been found over EM conductors tested to date, indicating insufficient amounts of sulphide mineralization present to give a density contrast high enough to be detected by gravity instruments.

A number of soil anomalies reflecting higher than threshold values for zinc, lead, silver and copper have been found.

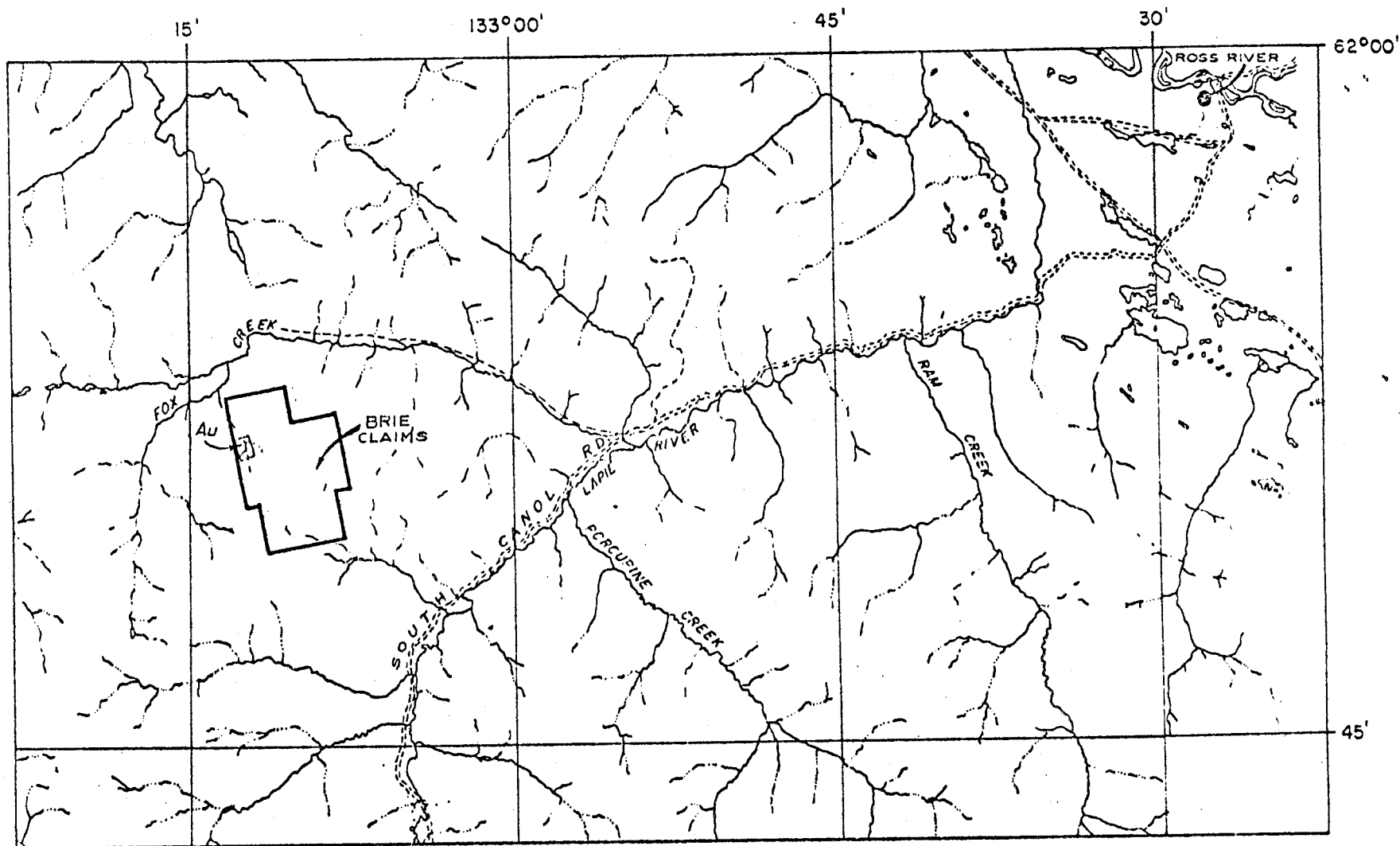
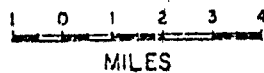


FIGURE 1

AU-BRIE CLAIMS
LOCATION MAP



ROAD
WINTER ROAD

WORK BY: G. Norman
DRAWN BY: C. Donders

GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL REPORT
ON THE AU-BRIE CLAIMS, GROUPS 1-9

INTRODUCTION

From the 6th of June to the 26th of August, 1976, geological, geochemical and geophysical work was done on the Au-Brie Groups 1-9. The claims specifically covered in this work include Au Nos. 1-6 inclusive and Brie Nos. 1-30 inclusive, 35 to 52 inclusive, 57 to 72 inclusive, 74, 79 to 88 inclusive, 95 to 124 inclusive, 127 and 128.

The field work was undertaken by G. Norman, C. Westerman, R. Willson and J. Wilson, geologists, J. Vyselaar and E. Bittleston, geophysicists, and S. Ramsay, G. Holland, S. Garner, T. Buchy, W. Lee and D. Johnson, field assistants.

LOCATION AND ACCESS

The Au-Brie claims are located 41.6 kilometers southwest of Ross River (Figure 1) and approximately 14 kilometers west of the South Canol Road. The base camp for all the above surveys was located near the junction of Brie Creek and Cirque Creek on Au No.1 mineral claim.

Access to the claims is by helicopter from Ross River or from the South Canol Road. A convenient gravel pit located near the junction of Fox Creek and Lapie River was used as a supply depot for fuel and a parking lot. The claims can also be reached by foot from the end of a cat trail up Fox Creek (Figure 1).

HISTORY

In October 1971, P. Risby staked the property as the TUB claims (Y62689) and it was optioned later in the year by Arrow Inter-American Corporation. Arrow explored with geochemistry and prospecting, staking an additional one hundred Murph claims (T66330) in June of 1972. The property was restaked as the Au claims in January 1975 by P. Risby.

In August 1975, D.G. Cargill examined the property on Utah's behalf. A mining lease-option agreement between Utah Mines and P. Risby was signed September 24, 1975. In September 1975, an additional 128 Brie claims were staked contiguous to the Au claims.

PHYSIOGRAPHY

The claims area, which comprises a rectangular block of ground 3.7 kilometers by 6.8 kilometers, lies within the St. Cyr Range of the Pelly Mountains. It is characterized by strong relief with elevations ranging from 1,260 meters to 2,020 meters at the top of some of the cirques. Snow is present for a greater part of the year at the higher elevations (above 1,800 meters - especially in the cirque areas) until the middle of July. Snow free months below the 1,800 meter elevation are usually June, July and August.

Stunted spruce below the 1,350 meter elevation is replaced by patchy "buckbrush" and short grass at higher elevations.

Frost boils associated with permafrost conditions initiate seeps and slump structures locally.

U-shaped valleys, cirques and glacial moraine deposits are evidence of a topography that has been molded by a strong glacial advance during the Pleistocene.

AU AND BRIE CLAIMS

<u>CLAIM</u>	<u>NUMBER</u>	<u>CLAIM</u>	<u>NUMBER</u>
Au #1	Y91929	Brie #20	YA3670
" 2	Y91930	" 21	YA3671
" 3	Y91931	" 22	YA3672
" 4	Y91932	" 23	YA3673
" 5	Y91933	" 24	YA3674
" 6	Y91934	" 25	YA3675
Brie #1	YA3651	" 26	YA3676
" 2	YA3652	" 27	YA3677
" 3	YA3653	" 28	YA3678
" 4	YA3654	" 29	YA3679
" 5	YA3655	" 30	YA3680
" 6	YA3656	" 31	YA3681
" 7	YA3657	" 32	YA3682
" 8	YA3658	" 33	YA3683
" 9	YA3659	" 34	YA3684
" 10	YA3660	" 35	YA3685
" 11	YA3661	" 36	YA3686
" 12	YA3662	" 37	YA3687
" 13	YA3663	" 38	YA3688
" 14	YA3664	" 39	YA3689
" 15	YA3665	" 40	YA3690
" 16	YA3666	" 41	YA3691
" 17	YA3667	" 42	YA3692
" 18	YA3668	" 43	YA3693
" 19	YA3669	" 44	YA3694

CLAIM NUMBER

Brie #45	YA3695
" 46	YA3696
" 47	YA3697
" 48	YA3698
" 49	YA3699
" 50	YA3700
" 51	YA3701
" 52	YA3702
" 53	YA3703
" 54	YA3704
" 55	YA3705
" 56	YA3706
" 57	YA3707
" 58	YA3708
" 59	YA3709
" 60	YA3710
" 61	YA3711
" 62	YA3712
" 63	YA3713
" 64	YA3714
" 65	YA3715
" 66	YA3716
" 67	YA3717
" 68	YA3718
" 69	YA3719
" 70	YA3720
" 71	YA3721
" 72	YA3722

CLAIM NUMBER

Brie #73	YA3723
" 74	YA3724
" 75	YA3725
" 76	YA3726
" 77	YA3727
" 78	YA3728
" 79	YA3729
" 80	YA3730
" 81	YA3731
" 82	YA3732
" 83	YA3733
" 84	YA3734
" 85	YA3735
" 86	YA3736
" 87	YA3737
" 88	YA3738
" 89	YA3739
" 90	YA3740
" 91	YA3741
" 92	YA3742
" 93	YA3743
" 94	YA3744
" 95	YA3745
" 96	YA3746
" 97	YA3747
" 98	YA3748
" 99	YA3749
" 100	YA3750

CLAIM NUMBER

Brie #101	YA3751
102	YA3752
103	YA3753
104	YA3754
105	YA3755
106	YA3756
107	YA3757
108	YA3758
109	YA3759
110	YA3760
111	YA3761
112	YA3762
113	YA3763
114	YA3764

CLAIM NUMBER

Brie #115	YA3765
" 116	YA3766
" 117	YA3767
" 118	YA3768
" 119	YA3769
" 120	YA3770
" 121	YA3771
" 122	YA3772
" 123	YA3773
" 124	YA3774
" 125	YA3775
" 126	YA3776
" 127	YA3777
" 128	YA3778

FIELD WORK

The 1976 field work by Utah Mines Ltd. on the Au-Brie claims consisted of geological mapping, a claims survey, magnetic, electromagnetic, gravity, leveling and geochemical soil and silt surveys. An east to west Baseline (100+00N) was extended east 3.6 kilometers from Au #4 to Brie #5 and also extended 0.8 kilometers west from Au #4 to Brie #100 for control. The baseline was surveyed using a compass and chain. Six (6) tie lines paralleling the baseline provided additional picket line control. The tie lines are as follows:

- | | | | | |
|-------------|---------------|---------|----|---------|
| 1. Tie Line | 120+00N, from | 100+00E | to | 120+00E |
| 2. Tie Line | 110+00N, from | 100+00E | to | 136+00E |
| 3. Tie Line | 107+00N, from | 92+00E | to | 100+00E |
| 4. Tie Line | 90+00N, from | 94+00E | to | 136+00E |
| 5. Tie Line | 80+00N, from | 94+00E | to | 136+00E |
| 6. Tie Line | 70+00N, from | 100+00E | to | 112+00E |

All picket lines run north to south and were surveyed using a compass and chain. Slope corrections were made when necessary. Picket line spacing is 200m and station interval along the picket lines is 50 meters. Lines were tied at each end using chain and compass survey. A total of 96.3 line kilometers were surveyed.

The grid described above was used as a base for all the surveys with the exception of the geological mapping and the geochemical silt survey. In both exceptions, 1:5000 scale orthophoto maps were used for control.

Geological mapping, done at a scale of one centimeter equal to fifty meters (1cm=50m), was conducted over most of the property except for the following claims: Brie Nos. 91-94; 75-78; 53-56; and 31-34.

Geochemical silting was carried out on all major creeks within the claim area and most of their tributaries. Geochemical soil sampling was completed over a large portion of the grid area, exceptions being: 1) 94+00E to 122+00E from 80+00N to 90+00N; 2) 100+00E to 112+00E from 73+00N to 80+00N and 3) portions of lines from 108+00E to 132+00E from 90+00N to 100+00N. In addition, lines at 100 meter spacing were established from 106 to 110E, from 100+00N to 120+00N to provide fill-in data.

The Electromagnetic survey was conducted over most of the grid area with line spacing either at 400 meters or 200 meters.

Gravity and Levelling surveys were conducted over selected portions of the grid. These areas are as follows: 1) 106+00E to 120+00E from 110+00N to 120+00N; 2) 104+00E to 112+00E from 95+00N to 105+00N; 3) 126+00E from 80+00N to 92+00N. Both surveys covered essentially the same ground.

The Magnetics survey was carried out over a small portion of the grid. These areas are: 1) 114+00E to 120+00E from 110+00N to 120+00N; 2) 94+00E to 106+00E from 90+00N to 100+00N.

The claim survey in which orthophoto or grid ties were used as control was completed over most of the claim area except

for the following Brie claim Nos: 89-94, 67-78, 43-49, and 51-56.

A summary of the various surveys and their line kilometerage is given below:

<u>Survey</u>	<u>Total Line Kilometers</u>
EM	57.2
Magnetics	11
Gravity	14.5
Levelling	14.5
Geochemical Soil	50.9
Geochemical Silt	31.6

REGIONAL GEOLOGY

The Au-Brie property lies within the northern extremity of the Omineca Crystalline Belt in the south central Yukon. In the Ross River area this belt is immediately southwest of the Tintina Trench. In Late Proterozoic through Triassic times an assemblage of shales, sandstones, carbonates and volcanic rocks accumulated under relatively shallow water, stable shelf conditions. This autochthonous miogeoclinal assemblage was deformed and imbricated by northeasterly directed thrusts in post Triassic time. Elongate granitic batholiths were intruded into the belt during the Middle Cretaceous.

The Fox Creek area is underlain by rocks ranging in age from Upper Proterozoic to Mississippian which strike northwesterly and dip regionally towards the northeast. Lower Proterozoic rocks at the base of the succession are grey and green phyllites with a distinctive central unit of quartzite or grit. The overlying Lower Cambrian units are apparently conformable and consist of limy black phyllites at the base, overlain by grey platy limestones and orange weathering, thick bedded dolomite.

Upper Cambrian and Ordovician strata are unconformable on a regional scale but this is not obvious in the Fox Creek area. The Cambro-Ordovician rocks are orange weathering, grey and black phyllites with abundant volcanic tuff lenses and are believed to be equivalent to the "phyllite unit" in the Anvil area. These rocks are equivalent in age to the Kechika Group of Gabrielse (1963).

The majority of the Au-Brie claim block is underlain by Kechika equivalent strata which are several thousand feet thick in this area. Lower and Middle Silurian argillites, dolomitic siltstone and tuff form a relatively thin, impersistent but conformable unit above the Kechika phyllites.

Thick bedded, grey and orange weathering Devonian carbonates are regionally unconformable on the Lower Paleozoic strata. They are succeeded conformably by Mississippian black shale, silty argillite, siltstones and greywacke. Further to the southeast the Mississippian rocks are dominated by a thick succession of andesites and intermediate tuffs.

LOCAL GEOLOGY

Kechika Group

Orange weathering phyllite with abundant volcanic tuff lenses characterize the Kechika Group of rocks which underlies most of the Au-Brie property. The phyllite is usually calcareous with some phyllitic limestone sections and rare thin beds of dolomite.

The phyllite varies from a lustrous grey color in the noncalcareous variety to a grey-black in the calcareous variety. Tuff beds vary in coarseness and thickness from very fine grained, one to two centimeter thick beds up to medium grained one to two meter thick beds. The thicker units usually host euhedral pyrite crystals, up to two to three centimeters. The total thickness of the strata is thought to be several thousand feet in the area of the property.

There are many quartz-carbonate veins within the phyllite unit. These veins parallel F-1 foliation and vary in thickness from five to fifteen centimeters but sometimes thicken to 30 centimeters.

Intrusive Rocks

1. Stocks: No stocks have been found on the property but a medium grained hornblende granodiorite intrusive does flank the claim group to the south. This stock is part of an elongate system thought to have been intruded during Middle Cretaceous time.

2. Dykes: Hornblende and andesitic dykes with a predominate trend of N20E occur within the map area. The hornblende diorite dykes vary from three to five meters in width and carry varying amounts of pyrite.

Quartz xenoliths are characteristic of a large hornblende dyke found within the central grid area.

Andesitic dykes are more numerous than dioritic dykes and are either a quartz-feldspar porphyritic andesite with minor pyrite or a dark, fine grained andesite. These dykes are usually less than one meter wide.

Structure

The rocks within the map area are structurally complex, being affected by at least three (3) phases of deformation. The best developed foliation (F_2 crenulation foliation), strikes northwest and dips twenty to thirty degrees to the north on the average. Another foliation appears, to be transposed bedding (F_1) and varies in strike direction and dip very radically within twenty to thirty meters in some areas; especially the area near Cirque Creek and to the west of Brie Creek. A third foliation (F_3) strikes northerly and dips very steeply to the east. F_2 foliation is axial planar to minor folds defined by F_1 foliation.

Gently northwesterly dipping phyllites in the southern part of the grid area change rapidly to the north to strongly contorted phyllites near Cirque Creek. These rocks appear to dip steeply into the creek from the north and south forming a synclinal structure.

Mineralization

A train of mineralized boulders in Brie Creek extends from the 1,435 meter elevation down to Fox Creek. Boulders increase in size and angularity as one proceeds upstream. Near the upstream end of the train, 2m x 2m x 1m size boulders are not uncommon. These boulders are much larger than other boulders in the stream which are rounded and ten (10) to thirty (30) centimeters in diameter. Two distinct mineral populations have emerged from a thorough study of the mineralized boulder train:

- 1) A strongly limonitic, dark brown boulder type with quartz and minor carbonate, pyrite and minor chalcopyrite. Chalcopyrite occurs with pyrite along bands and along fractures at right angles to the bands. This type of boulder on occasion has bands of disseminated sphalerite in a siliceous groundmass.
- 2) A whitish boulder type with bands of sphalerite with traces of galena in a very siliceous matrix.

The best mineralization found in outcrop occurs as a siliceous lens 1 to 1.5 meters thick, dipping fifty (50) degrees northward into Cirque Creek. This lens is cut off to the east by a large hornblende diorite dyke and its possible continuation is found in a similar setting near 112+00E; 94+50N. Mineralization occurs as sphalerite, galena and hydrozincite.

Large slump boulders (6 meters x 5 meters) found near the stream bed of Cirque Creek near 110+00E and 99+00N assayed

at 10.04% Zn, 0.58% Pb, 0.03% Cu and 0.14 oz/ton Ag.

Siliceous lenses with pyrite and chalcopyrite have been found within the phyllites and tuffs at 1) 103+00E, 77+00N; 2) 600 meters east of 132+00E, 87+00N; and 3) 107+00N from 116+00E to 110+00E (boulder train).

These lenses have been highly contorted and show small scale folding. Sulphides are concentrated in the noses of these folds and are smeared out along the limbs making these small bodies difficult to trace.

GEOPHYSICAL DISCUSSION

Geophysical surveys consisted of an electromagnetic survey, a gravity survey and a magnetometer survey. Each survey and the results obtained are described separately below.

The surveys were completed by T. Buchy, W. Lee and S. Ramsay under the supervision of J. Vyselaar, Geophysicist.

Electromagnetic Survey

Electromagnetic surveys are carried out to locate conductive bodies. An alternating current is passed through a coil causing eddy currents in the ground. These eddy currents in turn produce a secondary field which is detected by a receiver coil. In the absence of any conductive bodies, a zero reading is obtained while the presence of a conductive body leads to some other reading. The readings obtained depend on trans-

mitter-receiver geometry and on size and shape of conductive body.

Conductive bodies detected by EM surveys consists of massive sulphides (more than 30% sulphides), graphite or water filled shears and fault zones, cultural objects such as buried pipes and grounded fences, swampy areas and clay beds.

There are two main types of EM systems: inphase-quadrature systems and dip-angle systems. The inphase-quadrature systems require a cable link between the transmitter and receiver to cancel the effect of the primary field. The secondary field is then measured as a percentage of the primary field.

The dip-angle systems measure the angle of the major axis of the ellipse of polarization of the resultant field. The resultant field is the vector sum of the primary field from the transmitter and the secondary field created by the eddy currents in the ground.

Due to the extremely rugged terrain in the survey area, it was impossible to use an inphase-quadrature system as these systems are sensitive to elevation differences between transmitter and receiver. Erroneous readings caused by the terrain can cause false anomalies or mask genuine anomalies.

To overcome the problems with the topography, it was necessary to use dip-angle instruments in the "Shootback" method. In the Shootback method, two transceivers (i.e. each unit is capable of transmitting and receiving) move down the same

line a fixed distance apart. In this particular instance, transmitter-receiver spacing was 100 meters. At each station, both instruments transmit and receive (i.e. A transmits, B receives and then B transmits, A receives). The reading each obtains are then added together and plotted midway between the two instruments.

In the absence of any conductive bodies, the elevation difference between the two instruments will have a cancelling effect when the two readings are added together and the net effect will be zero. In the presence of a conductive body, the two readings will be different and will not cancel each other.

The instruments used for this survey were the CEM produced by Crone Geophysics Ltd. of Toronto, Ontario and the SE300 produced by Scintrex Ltd., also of Toronto.

The CEM has three frequencies, 390 Hz, 1830 Hz and 5010 Hz, while the SE300 has two frequencies, 400 Hz and 1600 Hz.

The survey was started with the CEM instruments operating at 1830 Hz. However, one unit broke down after three days and no replacement was available. It was then decided to continue the survey with the SE300 instruments using the 1600 Hz. As the frequencies of the two sets of instruments are very close, it was decided not to repeat the lines already surveyed with the CEM units.

The results of the EM survey (see Plate 13) show anomalous responses on lines 120E, 118E, 116E and 114E in the section

110N to 120N. Anomalous responses also occur on the central part of the grid from line 118E to line 92E. The anomalous zone varies from line to line but is generally quite broad and appears to be dipping shallowly northward. Unfortunately, the SE300's which were used for the major part of the survey, were working on only one frequency. Thus it was impossible to get any quantitative information such as dip, depth of top or conductivity thickness of the conductors.

Gravity Survey

Any variation in the mass of a rock unit will cause a corresponding change in the gravitation attraction of that rock unit. As mass is directly related to density an increase in density will lead to an increase in gravitational attraction. By taking an average density for unmineralized rocks and using it to compute the gravity readings obtained any density contrast between mineralized and unmineralized rocks will show up as anomalous gravity values.

The gravity survey utilized a LaCoste and Romberg gravimeter. The gravity readings were obtained over EM conductors as well as a few background lines at 50 meter intervals.

Elevations at each station were obtained by using a surveying level and a 12 foot Hutafer Rod marked in units of 0.1 feet.

Densities of several samples of unmineralized rocks were taken and averaged. The average density was found to be 2.72 gm/cc.

Free air, elevation, latitude and terrain corrections were then applied to the gravity data to obtain the relative gravity at each station. The station at Line 106E, 110N was taken as a base station for both the elevation and the gravity survey. This base station was arbitrarily set to 0 milligals and 5,003.8 feet elevation (a solid rock a few feet away was arbitrarily set at 5,000 feet). As only relative elevation and relative gravity data are desired, the absolute values at these stations are unimportant.

Overall accuracy of the gravity readings is estimated at ± 0.35 milligals. Thus to be considered significant any anomalous readings would have to be at 0.7 milligals above background.

Most of the gravity data shows a gradual increase northward. This is attributed as being due to a regional gradient to the north. When the regional gradient is taken into account, there is no significant positive gravity anomaly on the grid. Some of the EM conductors show no gravity effect while others show a negative anomaly. This is interpreted as meaning that there are not sufficient amounts of sulphide mineralization present to give a density contrast high enough to be detected by gravity.

Magnetic Survey

The magnetic survey was completed using a McPhar GP70 total field proton precession magnetometer.

Magnetic surveys are useful in defining geological contacts and outlining areas of concentrations of magnetic minerals.

Base stations were set up along baseline 100N from line 94E to 132E. The lines were then surveyed and diurnal variation was corrected for by checking a base station approximately once every 1½ to 2 hours.

The magnetic results (see Plate 14) were very flat, showing little variation over the area surveyed. It was therefore decided to discontinue the survey and no further work was done.

GEOCHEMICAL SURVEYS

Geochemical surveys were undertaken to establish the origin of the large mineralized boulders in Brie Creek. Exploration targets were areas anomalous in zinc, lead, copper and silver values.

1) Soils

Soil samples were taken along picket lines at 50 meter intervals. Samples consisted of approximately four or five ounces of material taken from the light brown silty "B" horizon when present but usually from the "C" horizon which consists of green clay and parental rock fragments.

The "B" horizon is found directly below a whitish-grey, silty ash layer which is prevalent throughout the Ross River area. Within the claim area, this ash horizon is not always present but usually persistent in low lying areas. See Figure 2 for soil profile.

SOIL PROFILE

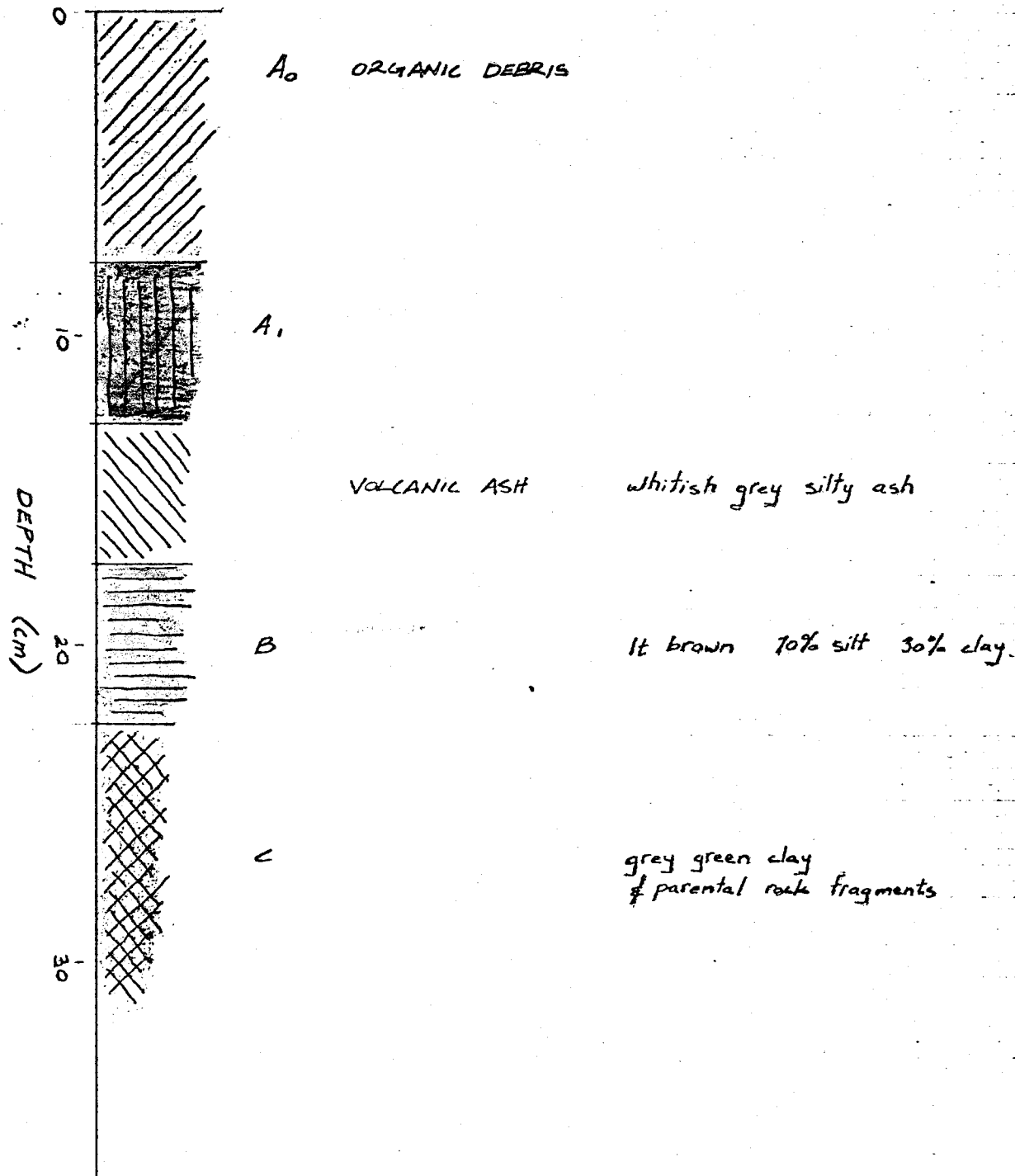


FIGURE 2.

Samples were collected using a mattock from a depth of about 20 to 30 centimeters. The soil was stored in brown Kraft paper bages, air dried and shipped to Bondar-Clegg & Company Ltd. for analysis. Each of the 1,006 samples was analysed for zinc, lead, copper and silver using standard A.A. methods.

2) Silts

Two hundred and fourteen (214) silt samples were taken along major creeks and their tributaries within the claim area. These samples were collected every 300 meters from stream channel centers. Along Brie Creek and Cirque Creek, bank samples were taken from the mixed silt of the A₁ soil horizon or just below the Ao (organic) horizon.

It was believed that the ratio of pyrite to other sulphides in the large massive sulphide boulders in Brie Creek was sufficient to produce a leaching effect in the center of the drainage channel.

The samples were stored in Kraft paper bags, air dried and shipped to Barringer Research Ltd. and analysed for copper, lead and zinc using standard A.A. methods.

3) Density Tests

Seventeen (17) rock samples were sent to Bondar-Clegg for density tests. For results see Table 1. An average of these results for the phyllites (2.72 gm/cc) was used in gravity calculations.

RESULTS AND INTERPRETATION

Results of the soil geochemical analyses are given on Plates 5-8 found in the attached map pouch. The results have been plotted at grid sample sites and contoured for visual display of anomalous areas. Results of the silt geochemistry are given on Plates 9-12 showing stream location sample sites. Means, standard deviations and thresholds were calculated for the analyses of zinc, lead, copper and silver for both soil and silt values. Results of these calculations are presented in Table 2 and Table 3.

Based on this criteria, six anomalies have been found on the property. See Table 4 for locations and comments on each anomaly.

Results of stream bank sampling showed little difference from stream center sampling.

TABLE 1
DENSITIES

<u>SAMPLE NO.</u>	<u>ROCK TYPES</u>	<u>DENSITY (gm/cc)</u>
76-NR-7	chloritic tuffs	2.88
76-NR-13	banded pyrite & quartz	3.07
76-NR-14	limy phyllite	2.71
76-NR-19	limy phyllite	2.63
76-NR-36	phyllite w/quartz- carbonate veins	2.70
76-NR-45	" "	2.68
76-NR-47	silty phyllite	2.71
76-NR-48	tuff w/euhedral pyrite cubes	2.77
76-NR-51	" "	2.80
76-NR-52	phyllite w/quartz, galena, minor sphalerite	2.85
76-NR-54	silty phyllite	2.70
76-NR-70	grey phyllite	2.67
76-NR-71	tuff	2.65
76-YAR-1	phyllite	2.79
76-YAR-2	phyllite	2.34
76-YAR-3	phyllite	2.75
76-YAR-4	phyllite	2.82

TABLE 2
STATISTICAL TREATMENT OF SOIL ANALYSES
(1006 Samples)

	MEAN (ppm)	STANDARD DEVIATION (ppm)	THRESHOLD MEAN + 2 S.D. (ppm)
ZINC	147.0	140.9	428.8
LEAD	33.7	17.2	68.1
COPPER	31.3	14.1	59.4
SILVER	1.1	1.1	3.4

TABLE 3
STATISTICAL TREATMENT OF SILT ANALYSES
(214 Samples)

	MEAN (ppm)	STANDARD DEVIATION (ppm)	THRESHOLD MEAN + 2 S.D. (ppm)
ZINC	134.3	60.2	254.1
LEAD	41.5	8.2	57.9
COPPER	29.0	7.3	43.7

TABLE 4
SOIL AND SILT ANOMALIES

ANOMALY NO.	TYPE	LOCATION	INTERPRETATIONS AND RECOMMENDATIONS
1	soil	94+00E from 103+00N to 105+50N	Area of deep overburden. Anomalous in Zn values. Possible origin of some of the mineralized boulders in Brie Creek. Gravity survey is recommended.
2	soil	100+00E to 110+00E from 104+00N to 113+00N	Horseshoe shaped anomaly in area of overburden where frost boiling is evident. The anomaly is thought to be a reflection of mineralization at considerable depth. Anomalous in Zn, Pb & Ag values.
3	soil	110+00E to 132+00E and 107+00N to 113+00N	An elongate northwest trending anomaly, anomalous in Zn, Pb & Cu values and widening from 50m to 400m in the vicinity of 118+00E 110+00N. These anomalous readings are thought to reflect a change in bedrock. In this area, small beds of dolomite have been found interbedded with the phyllites. Near 118+00E, 110+00N the dolomite beds appear to thicken. The threshold value of carbonate rocks is considerably higher than phyllites (no threshold value for dolomite has been calculated).
4	soil	96+00E, 96+00N	Anomalous Pb, Zn and Cu values. Reflects mineralization found in a large boulder(?) or outcrop(?) 3m x 10m in extent. Banded sulphides similar to mineralization

ANOMALY NO.	TYPE	LOCATION	INTERPRETATIONS AND RECOMMENDATIONS
4	Continued		found in Brie Creek is evident. Trenching is recommended to see if the surface mineral showing proves to be bedrock.
5	soil	116+00E to 118+00E from 96+50N to 97+50N	Highly anomalous in Zn values, also anomalous in Pb, Cu & Ag. Spotty galena in quartz veins within a thin bed of dolomite was found within the anomalous zone.
6	soil	112+00E to 118+00E 117+00N to 120+00N	Anomalous in Zn, Cu & Pb. Reflection of mineralization found in boulders in a NW trending boulder train containing pyrite, chalcopyrite, galena and traces of sphalerite. This boulder train is 6m wide and 200m long and appears to be a thin siliceous lens.
7	silt	107+00N, 124+00E	Stream drains area of soil anomaly 3. See comments for anomaly 3.
8	silt	Area of Brie claims 115, 116,117,118	Stream drains area of soil anomaly 6. See comments for anomaly 6.

STATEMENT OF COST

ON THE

BRIE AND AU CLAIMS

GROUPS 1 TO 9

WHITEHORSE MINING DIVISION

JUNE TO AUGUST 1976

LOCATED

16.5 KILOMETERS SOUTHWEST

OF ROSS RIVER

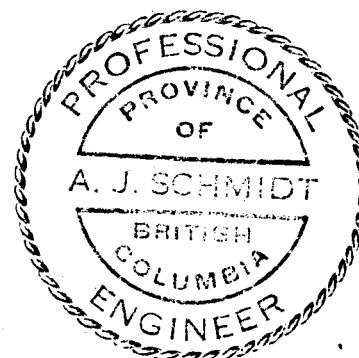
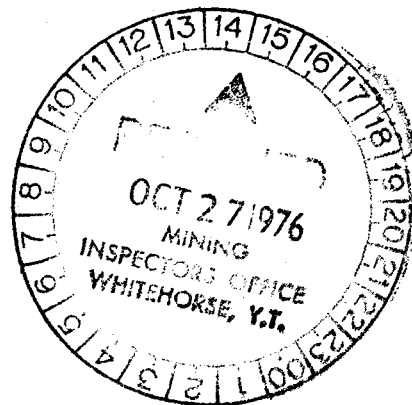
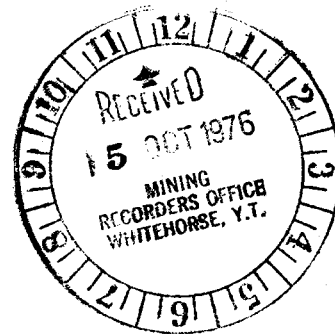
133° 14'W

61° 51'N

BY

G. NORMAN, GEOLOGIST

UTAH MINES LTD.



*A. Schmidt
Sept. 30/76*

STATEMENT OF COST

GEOLOGICAL, GEOCHEMICAL AND GEOPHYSICAL SURVEYS

SALARIES

G. Norman	86 days @ \$50.00/day	\$4,300.00	
C. Westerman	14 days @ \$65.38/day	915.32	
J. Wilson	14 days @ \$42.30/day	592.20	
R. Willson	16 days @ \$42.30/day	676.80	
G. Holland	15 days @ \$31.73/day	475.95	
S. Garner	15 days @ \$35.57/day	533.55	
S. Ramsay	77 days @ \$25.96/day	1,998.92	
T. Buchy	34 days @ \$28.85/day	980.90	
W. Lee	33 days @ \$38.46/day	1,269.18	
J. Vyselaar	28 days @ \$50.00/day	1,650.00	
R. Hat	28 days @ \$46.15/day	1,292.20	
I. Beauchamp	14 days @ \$61.38/day	859.32	
K. Dieckmann	7 days @ \$44.23/day	309.61	
B. Frost	9 days @ \$32.69/day	294.21	
K. Orleski	9 days @ \$42.30/day	380.70	
D. Johnson	9 days @ \$24.03/day	456.57	
E. Bittleston	10 days @ \$50.85/day	508.50	
B. Clark	4 days @ \$34.46/day	137.84	
F. Gatchalian	4 days @ \$67.30/day	269.20	
C. Donders	22 days @ \$48.84/day	<u>1,074.48</u>	
TOTAL SALARIES		\$18,975.45	\$18,975.45

MOBILIZATION COSTS

Air Fare

C. Westerman	Vancouver-Whitehorse	\$117.00
S. Garner	Smithers-Watson Lake	124.20

Air Fare Cont'd

G. Holland	Smithers-Watson Lake	\$ 124.20	
S. Ramsay	Smithers-Watson Lake	<u>124.20</u>	
TOTAL		\$ 489.60	

Room and Board

67 man days @ \$25.00/day	<u>\$1,675.00</u>	
TOTAL	\$1,675.00	

Hauling Charges

KOJ Trucking	Watson Lake-South Canol Road		
		\$ 330.00	

TOTAL MOBILIZATION COSTS	\$2,494.60	\$2,494.60
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VEHICLE RENTAL

One 1975 3/4 ton pick-up, Ford 4x4		
7 days @ \$12.00/day	\$ 84.00	
One 1975 1/2 ton pick-up, Chev Blazer 4x4		
90 days @ \$8.50/day	765.00	
One 1975 Suburban GMC		
30 days @ \$7.95/day	<u>238.50</u>	
TOTAL	\$1,087.50	\$1,087.50

VEHICLE MAINTENANCE

Gasoline and tires	\$ 466.14	\$ 466.14
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LIGHT PLANT RENTAL

90 days @ \$12.00/day	\$1,080.00	\$1,080.00
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RADIO EQUIPMENT

Radio Rental

One SBX-11	90 days @ \$3.50/day	\$	315.00	
One SBX-11	24 days @ \$3.50/day		84.00	

Radio Repair

Jack Ross			<u>576.57</u>	
TOTAL RADIO EQUIPMENT		\$	975.57	\$ 975.57

ALTIMETER RENTAL

One Thommens metric				
	90 days @ \$0.30/day	\$	27.00	\$ 27.00

CLINOMETER RENTAL

Two clinometers 90 days @ \$0.19/day/clinometer				
		\$	<u>17.10</u>	each
TOTAL		\$	34.20	\$ 34.20

TOPOFIL CHAIX RENTAL

Two topofils	90 days @ \$0.93/day/topofil			
		\$	<u>83.70</u>	each
TOTAL		\$	167.40	\$ 167.40

MAGNETOMETER RENTAL

GP-70 Magnetometer	30 days @ \$13.00/day	\$	390.00	\$ 390.00
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CEM RENTAL

	30 days @ \$14.17/day	\$	425.00	\$ 425.00
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GRAVITY METER RENTAL

14 days @ \$33.00/day	\$ 462.00	\$ 462.00
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LEVELLING INSTRUMENT RENTAL

B-1 Auto Level #130037 C/W aluminum tripod

30 days @ \$1.67/day	\$ 50.10	
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12 foot Hultafor Rod #4

30 days @ \$0.65/day	<u>19.55</u>	
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TOTAL	\$ 69.65	\$ 69.65
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MAP PREPARATION

Orthophoto Mosaic 1:5,000 from 1:50,000 topographic maps

Pacific Surveys	\$4,025.62	
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Terrain Correction Survey

Digitgraph Geophysics	<u>675.00</u>	
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TOTAL	\$4,700.62	\$4,700.62
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GEOCHEMICAL ANALYSIS

Soil sample analysis

1006 samples @ \$3.49/sample	\$3,510.88	
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Silt sample analysis

214 samples @ \$2.85/sample	609.80	
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Rock geochemical analysis

10 samples @ \$4.00/sample	40.00	
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Density tests

17 samples @ \$4.00/sample	<u>124.00</u>	
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TOTAL GEOCHEMICAL ANALYSIS	\$4,284.68	\$4,284.68
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FOOD COSTS

Super Valu	\$1,587.00	
Ross River Store	<u>4,319.95</u>	
TOTAL	\$5,906.95	\$5,906.95

EXPEDITING COSTS

Stirling Expediting	\$1,429.97	\$1,429.97
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PROPANE

9 100 lb. cylinders @ \$22.95 each	\$ 206.55	\$ 206.55
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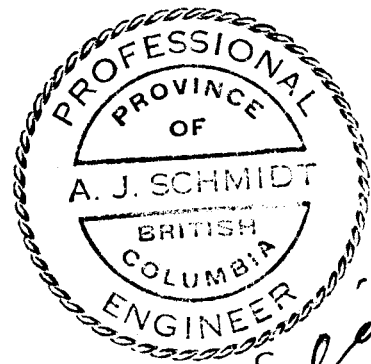
FUEL

Stove fuel	\$1,042.37	
Helicopter fuel	<u>1,642.69</u>	
TOTAL	\$2,685.06	\$2,685.06

HELICOPTER SUPPORT

Vancouver Island Helicopters		
125.3 hours @ \$160.00/hour		
	\$20,048.00	<u>\$20,048.00</u>

<u>GRAND TOTAL</u>		<u>\$65,916.34</u>
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A. Schmidt
Sept. 30/76

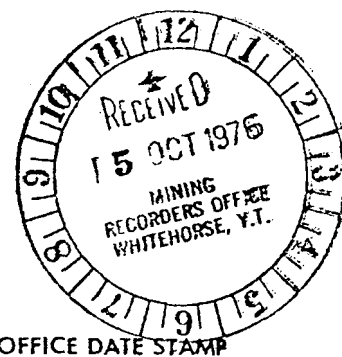


Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)



I (Name)	George Norman	Occupation	Geologist
(Postal Address)	1600-1050 W. Pender St., Vancouver, B.C. V6E 3S7		

MAKE OATH AND SAY, THAT:-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):

(Here list claims on which work was actually done by number and name)

CLAIM	NUMBER	CLAIM	NUMBER	CLAIM	NUMBER
Brie #1	YA3651	Brie #10	YA3660	Brie #24	YA3674
Brie #2	YA3652	Brie #11	YA3661	Brie #26	YA3676
Brie #4	YA3654	Brie #12	YA3662	Brie #28	YA3678
Brie #6	YA3656	Brie #13	YA3663	Brie #36	YA3686
Brie #8	YA3658	Brie #14	YA3664	Brie #113	YA3763

situated at Fox Creek, YukonClaim Sheet No. 105F/14in the Whitehorse Mining District, to the value of at least 6400.00dollars, since the 26 day of September 19 75.to represent the following mineral claims under the authority of Grouping Certificate No. 6412 Q.

(Here list claims to be renewed in numerical order, by number and name, showing renewal period requested).

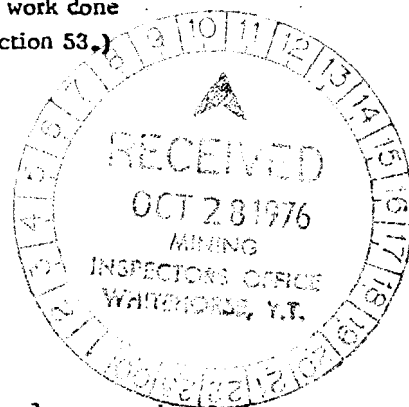
Claim	Grant Numbers	Group #1	Renewal Period	Claim	Grant Numbers	Renewal Period
Brie #1	YA3651	Sept. 26/76-Sept. 26/79		Brie #13	YA3663	Sept. 26/76-Sept. 26/79
Brie #2	YA3652	"		Brie #14	YA3664	"
Brie #4	YA3654	"		Brie #24	YA3674	"
Brie #6	YA3656	"		Brie #26	YA3676	"
Brie #8	YA3658	"		Brie #28	YA3678	"
Brie #10	YA3660	"		Brie #36	YA3686	"
Brie #11	YA3661	"		Brie #113	YA3763	"
Brie #12	YA3662	"		Brie #114	YA3764	"

3. The following is a detailed statement of such work: (Set out full particulars of the work done

in the twelve months in which such work is required to be done, as shown by Section 53.)

- 1) Geological mapping
- 2) Line Survey, chain & compass
- 3) Gravity survey a) Levelling survey
b) Gravity instrument survey
- 4) Geochemical surveys a) Soil survey
b) Silt survey
- 5) Magnetometer survey
- 6) Electro magnetic survey
- 7) Claim survey - orthophoto control

See attached property work map for specific surveys completed on each claim.

Sworn before me at Vancouver, B.C.this 28th day of September 1975

Notary Public

Applicant.

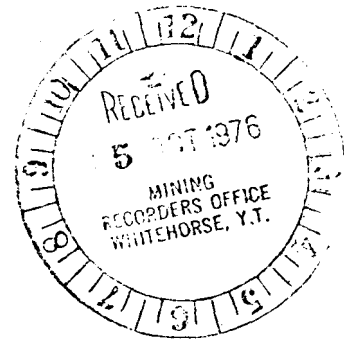


Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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(Postal Address)	1600-1050 W. Pender Street, Vancouver, B.C.		

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2. I have done, or caused to be done, work on the following mineral claim(s):

(Here list claims on which work was actually done by number and name)

CLAIM	NUMBER	CLAIM	NUMBER	CLAIM	NUMBER	Group #2
Brie #3	YA3653	Brie #16	YA3666	Brie #21	YA3671	Brie #29 YA3679
" 5	YA3656	" 17	YA3667	" 22	YA3672	
" 7	YA3657	" 18	YA3668	" 23	YA3673	
" 9	YA3659	" 19	YA3669	" 25	YA3675	
" 15	YA3665	" 20	YA3670	" 27	YA3677	

situated at Fox Creek, Yukon Claim Sheet No. 105F/14in the Whitehorse Mining District, to the value of at least 6400.00dollars, since the 26 day of September 19 75,

to represent the following mineral claims under the authority of Grouping Certificate No. _____

(Here list claims to be renewed in numerical order, by number and name, showing renewal period requested).

GROUP #2			CLAIM	GRANT NUMBER	RENEWAL PERIOD	CLAIM	GRANT NUMBER	RENEWAL PERIOD
Brie #3	YA3653	Sept. 26/76-Sept. 26/79	Brie #19	YA3669	Sept. 26, /76-Sept. 26/79			
" 5	YA3655	" " <i>H.N.</i>	" 20	YA3670	" " <i>H.N.</i>			
" 7	YA3657	" " <i>H.N.</i>	" 21	YA3671	" " <i>H.N.</i>			
" 9	YA3659	" " <i>H.N.</i>	" 22	YA3672	" " <i>H.N.</i>			
" 15	YA3665	" " <i>H.N.</i>	" 23	YA3673	" " <i>H.N.</i>			
" 16	YA3666	" " <i>H.N.</i>	" 25	YA3675	" " <i>H.N.</i>			
" 17	YA3667	" " <i>H.N.</i>	" 27	YA3677	" " <i>H.N.</i>			
" 18	YA3668	" " <i>H.N.</i>	" 29	YA3679	" " <i>H.N.</i>			

3. The following is a detailed statement of such work: (Set out full particulars of the work done in the twelve months in which such work is required to be done, as shown by Section 53.)

- 1) Geological mapping
- 2) Line survey - chain and compass
- 3) Geochemical surveys a) soil survey
b) silt survey
- 4) Geophysical surveys a) gravity survey
i) gravity instrument survey
ii) levelling survey
b) magnetometer survey
c) electromagnetic survey
- 5) Claim survey - orthophoto control

See attached property work map for specific surveys completed on each claim.

Sworn before me at Whitehorse, B.C.
this 27th day of September 19 76

Notary Public

Applicant.

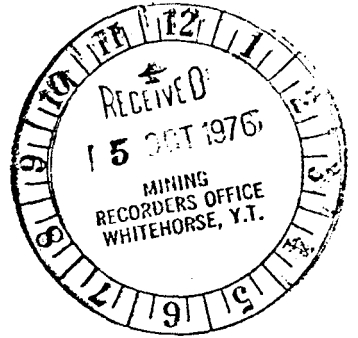


Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

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(Postal Address) 1600-1050 W. Pender Street, Vancouver, B.C. V6E 3S7

MAKE OATH AND SAY, THAT :-

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2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

CLAIM	NUMBER	CLAIM	NUMBER	CLAIM	NUMBER
Brie #30	YA3680	Brie #42	YA3692	Brie #52	YA3702
Brie #35	YA3685	Brie #44	YA3694	Brie #112	YA3762
Brie #37	YA3687	Brie #46	YA3696		
Brie #38	YA3688	Brie #48	YA3698		
Brie #40	YA3690	Brie #50	YA3700		

situated at Fox Creek, Yukon Claim Sheet No. 105F/14

in the Whitehorse Mining District, to the value of at least 6800.00

dollars, since the 26 day of September 19 75

to represent the following mineral claims under the authority of Grouping Certificate No. 64749

(Here list claims to be renewed in numerical order, by number and name, showing renewal period requested).

CLAIM	GRANT NUMBER	GROUP#3 RENEWAL PERIOD	CLAIM	GRANT NUMBER	RENEWAL PERIOD
Brie #30	YA3680	Sept. 26/76-Sept. 26/78	Brie #42	YA3692	Sept. 26/76-Sept. 26/80
" #31	YA3681	" " A.N.	" #44	YA3694	" " A.N.
" #32	YA3682	" " A.N.	" #46	YA3696	" " A.N.
" #34	YA3684	" " A.N.	" #48	YA3698	" " A.N.
" #35	YA3685	Sept. 26/76-Sept. 26/80	" #50	YA3700	" " A.N.
" #37	YA3687	" " A.N.	" #52	YA3702	Sept. 26/76-Sept. 26/77
" #38	YA3688	" " A.N.	" #54	YA3704	" " A.N.
" #40	YA3690	" " A.N.	" #112	YA3762	" Sept. 26/78

3. The following is a detailed statement of such work: (Set out full particulars of the work done in the twelve months in which such work is required to be done, as shown by Section 53.)

- 1) Geological mapping
- 2) Line survey-chain and compass
- 3) Geochemical soil survey
- 4) Geophysical surveys a) Gravity survey
 - i) Gravity instrument survey
 - ii) Levelling surveyb) Magnetometer surveyc) Electromagnetic survey
- 5) Claim Survey - orthophoto control

See attached property work map for specific surveys completed on each claim.

Sworn before me at Vancouver, B.C.
this 28th day of September 19 76

Notary Public

George Norman
Applicant.



Department of Indian Affairs and Northern Development

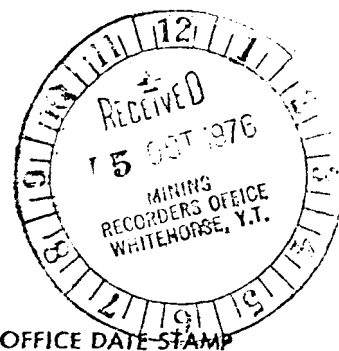
YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

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I (Name) George Norman Occupation Geologist

(Postal Address) 1600-1050 W. Pender Street, Vancouver, B.C.



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2. I have done, or caused to be done, work on the following mineral claim(s):

(Here list claims on which work was actually done by number and name)

CLAIM	NUMBER	CLAIM	NUMBER	CLAIM	NUMBER
Brie #39	YA3689	Brie #49	YA3699	Brie #109	YA3759
" 41	YA3691	" 51	YA3701	" 110	YA3760
" 43	YA3693	" 58	YA3708		
" 45	YA3695	" 60	YA3710		
" 47	YA3697	" 62	YA3712		

situated at Fox Creek, Yukon Claim Sheet No. 105F/14

in the Whitehorse Mining District, to the value of at least 8000.00

dollars, since the 26 day of September 19 75

to represent the following mineral claims under the authority of Grouping Certificate No. 64759

(Here list claims to be renewed in numerical order, by number and name, showing renewal period requested).

CLAIM	GRANT NUMBER	RENEWAL PERIOD	CLAIM	GRANT NUMBER	RENEWAL PERIOD
Brie #33	YA3683	Sept. 26/76-Sept. 26/80	Brie #53	YA3703	Sept. 26/76-Sept. 26/80
" 39	YA3689	" "	" 55	YA3705	" "
" 41	YA3691	" "	" 56	YA3706	" "
" 43	YA3693	" "	" 58	YA3708	" "
" 45	YA3695	" "	" 60	YA3710	" "
" 47	YA3697	" "	" 62	YA3712	" "
" 49	YA3699	" "	" 109	YA3759	" "
" 51	YA3701	" "	" 110	YA3760	" "

3. The following is a detailed statement of such work: (Set out full particulars of the work done in the twelve months in which such work is required to be done, as shown by Section 53.)

1) Geological Mapping

2) Line Survey

3) Geochemical Surveys a) soil survey

b) silt survey

4) Geophysical Surveys a) gravity survey

i) gravity instrument survey

ii) levelling survey

b) magnetometer survey

c) electromagnetic survey

5) Claim Survey - orthophoto control

See attached property work map for specific surveys completed on each claim.

Sworn before me at Vancouver, B.C.

this 20th day of September 1976

Notary Public

Applicant.

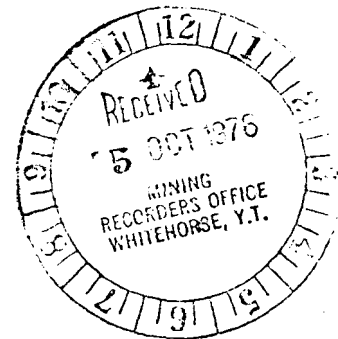


Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

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OFFICE DATE STAMP

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(Postal Address) 1600-1050 W. Pender Street, Vancouver, B.C.

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2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

CLAIM	NUMBER	CLAIM	NUMBER
Brie #57	YA3707	Brie #66	YA3716
" 59	YA3709	" 68	YA3718
" 61	YA3711	" 69	YA3719
" 63	YA3713	" 70	YA3720
" 64	YA3714	" 72	YA3722

situated at Fox Creek, Yukon Claim Sheet No. 105F/14
in the Whitehorse Mining District, to the value of at least 8000.00

dollars, since the 26 day of September 19 75to represent the following mineral claims under the authority of Grouping Certificate No. 64769

(Here list claims to be renewed in numerical order, by number and name, showing renewal period requested).

CLAIM	GRANT NUMBER	RENEWAL PERIOD	CLAIM	GRANT NUMBER	RENEWAL PERIOD
Brie #57	YA3707	Sept. 26/76-Sept. 26/80	Brie #70	YA3720	Sept. 26/76-Sept. 26/80
" 59	YA3709	" " <u>A.N.</u>	" 72	YA3722	" " <u>A.N.</u>
" 61	YA3711	" "	" 73	YA3723	" "
" 63	YA3713	" "	" 74	YA3724	" "
" 64	YA3714	" "	" 75	YA3725	" "
" 66	YA3716	" "	" 76	YA3726	" "
" 68	YA3718	" "	" 77	YA3727	" "
" 69	YA3719	" "	" 78	YA3728	" "

3. The following is a detailed statement of such work: (Set out full particulars of the work done in the twelve months in which such work is required to be done, as shown by Section 53.)

- 1) Geological Mapping
- 2) Line Survey
- 3) Geochemical Surveys
 - a) Soil Survey
 - b) Silt Survey
- 4) Geophysical Surveys
 - a) Gravity Survey
 - i) Gravity Instrument Survey
 - ii) Levelling Survey
 - b) Magnetometer Survey
 - c) Electromagnetic Survey
- 5) Claim Survey - orthophoto control

See attached property work map for specific surveys completed on each claim.

Sworn before me at Vancouver, B.C.
this 26th day of September 19 76

Notary Public

Applicant.

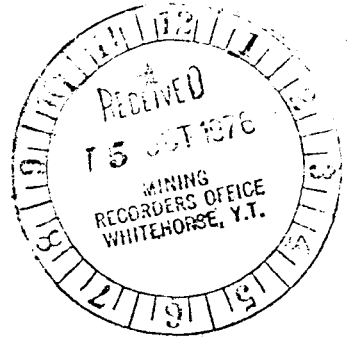


Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)



I (Name) George Norman Occupation Geologist

(Postal Address) 1600-1050 W. Pender Street, Vancouver, B.C.

OFFICE DATE STAMP

MAKE OATH AND SAY, THAT :-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

CLAIM	NUMBER	CLAIM	NUMBER	CLAIM	NUMBER
Au #1	Y91929	Brie #67	YA3717	Brie #84	YA3734
Au #3	Y91931	" 71	YA3721	" 86	YA3736
Au #5	Y91933	" 80	YA3730	" 88	YA3738
Brie #65	YA3715	" 82	YA3732	" 90	YA3740

situated at Fox Creek, Yukon

Claim Sheet No. 105F/14

in the Whitehorse Mining District, to the value of at least 7000.00

dollars, since the 26 day of September 19 75

to represent the following mineral claims under the authority of Grouping Certificate No. 105F/14

(Here list claims to be renewed in numerical order, by number and name, showing renewal period requested).

GROUP #6

CLAIM	GRANT NUMBER	RENEWAL PERIOD	CLAIM	GRANT NUMBER	RENEWAL PERIOD
Au #1	Y91929	Sept. 26/76-Sept. 26/80	Brie #84	YA3734	Sept. 26/76-Sept. 26/80
Au #3	Y91931	Jan. 6/77 - Jan. 6/82	" 86	YA3736	" "
Au #5	Y91933	" "	" 88	YA3738	" "
Brie #65	YA3715	Sept. 26/76 - Sept. 26/81	" 90	YA3740	" Sept. 26/78
" 67	YA3717	" "	" 91	YA3741	" "
" 71	YA3721	" "	" 92	YA3742	" "
" 80	YA3730	" "	" 93	YA3743	" "
" 82	YA3732	" "	" 94	YA3744	" "

3. The following is a detailed statement of such work: (Set out full particulars of the work done in the twelve months in which such work is required to be done, as shown by Section 53.)

- 1) Geological Mapping
 - 2) Line Survey - chain and compass
 - 3) Geochemical Surveys
 - a) Soil Survey
 - b) Silt Survey
 - 4) Geophysical Surveys
 - a) Gravity Survey
 - i) Gravity Instrument Survey
 - ii) Levelling Survey
 - b) Magnetometer Survey
 - c) Electromagnetic Survey
 - 5) Claim Survey - orthophoto control
- See attached work map for specific surveys completed on each claim.

Sworn before me at Vancouver, B.C.
this 27th day of September 1976

Notary Public

George Norman
Applicant.



Department of Indian Affairs and Northern Development

YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)



I (Name) George Norman Occupation Geologist

(Postal Address) 1600-1050 W. Pender Street, Vancouver, B.C.

OFFICE DATE STAMP

MAKE OATH AND SAY, THAT :-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):

(Here list claims on which work was actually done by number and name)

CLAIM	NUMBER	CLAIM	NUMBER	CLAIM	NUMBER	CLAIM	NUMBER
Au #2	Y91930	Brie #81	YA3731	Brie #89	YA3739	Brie #106	YA3756
Au #4	Y91932	" 83	YA3733	" 99	YA3749	" 107	YA3757
Au #6	Y91934	" 85	YA3735	" 103	YA3753	" 108	YA3758
Brie #79	YA3729	" 87	YA3737	" 104	YA3754	" 105	YA3755

situated at Fox Creek, Yukon Claim Sheet No. 105F/14

in the Whitehorse Mining District, to the value of at least 8000.00

dollars, since the 26 day of September 19 75

to represent the following mineral claims under the authority of Grouping Certificate No. 64766

(Here list claims to be renewed in numerical order, by number and name, showing renewal period requested).

GROUP #7					
CLAIM	GRANT NUMBER	RENEWAL PERIOD	CLAIM	GRANT NUMBER	RENEWAL PERIOD
Au #2	Y91930	Sept. 26/76-Sept. 26/80	Brie #89	YA3739	Sept. 26/76-Sept. 26/80
Au #4	Y91932	Jan 6/77-Jan 6/78	" 99	YA3749	" "
Au #6	Y91934	" "	" 103	YA3753	" "
Brie #79	YA3729	Sept. 26/76-Sept. 26/81	" 104	YA3754	" "
" 81	YA3731	" "	" 105	YA3755	" "
" 83	YA3733	" "	" 106	YA3756	" "
" 85	YA3735	" "	" 107	YA3757	" "
" 87	YA3737	" "	" 108	YA3758	" "

3. The following is a detailed statement of such work: (Set out full particulars of the work done in the twelve months in which such work is required to be done, as shown by Section 53.)

1) Geological Mapping

2) Line Survey - chain and compass

3) Geochemical Surveys a) Soil Survey

b) Silt Survey

4) Geophysical Surveys a) Gravity Survey

i) Gravity Instrument Survey

ii) Levelling Survey

b) Magnetometer

c) Electromagnetic Survey

5) Claim Survey - orthophoto control

See attached property work map for specific surveys completed on each claim.

Sworn before me at Vancouver, B.C.

this 28th day of September 19 76

Notary Public

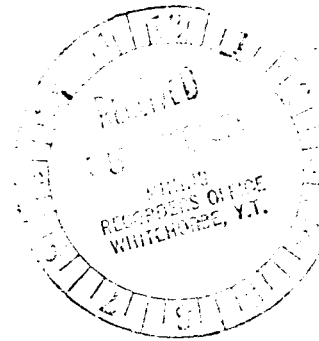
Applicant.



Department of Indian Affairs and Northern Development
YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)



I (Name)	George Norman	Occupation	Geologist
(Postal Address)	1600-1050 W. Pender Street, Vancouver, B.C.		

OFFICE DATE STAMP

MAKE OATH AND SAY, THAT :-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

CLAIM	NUMBER	CLAIM	NUMBER	CLAIM	NUMBER	CLAIM	NUMBER
Brie #95	YA3745	Brie #100	YA3750	Brie #121	YA3771	Brie #127	YA3777
" 96	YA3746	" 101	YA3751	" 122	YA3772	Brie #128	YA3778
" 97	YA3747	" 102	YA3752	" 123	YA3773		
" 98	YA3748	" 119	YA3769	" 124	YA3774		

situated at Fox Creek, Yukon Claim Sheet No. 105F/14
in the Whitehorse Mining District, to the value of at least 7400.00
dollars, since the 26 day of September 19 75

to represent the following mineral claims under the authority of Grouping Certificate No. 64796

(Here list claims to be renewed in numerical order, by number and name, showing renewal period requested).

GROUP #8					
CLAIM	GRANT NUMBERS	RENEWAL PERIOD	CLAIM	GRANT NUMBERS	RENEWAL PERIOD
Brie #95	YA3745	Sept. 26/76-Sept. 26/80	Brie #121	YA3771	Sept. 26/76-Sept. 26/80
" 96	YA3746	" "	" 122	YA3772	" " Sept. 26/76-Sept. 26/80
" 97	YA3747	" "	" 123	YA3773	" " Sept. 26/76-Sept. 26/80
" 98	YA3748	" "	" 124	YA3774	" " Sept. 26/76-Sept. 26/80
" 100	YA3750	" "	" 125	YA3775	" " Sept. 26/76-Sept. 26/80
" 101	YA3751	" "	" 126	YA3776	" " Sept. 26/76-Sept. 26/80
" 102	YA3752	" "	" 127	YA3777	" " Sept. 26/76-Sept. 26/80
" 119	YA3769	" "	" 128	YA3778	" " Sept. 26/76-Sept. 26/80

3. The following is a detailed statement of such work: (Set out full particulars of the work done in the twelve months in which such work is required to be done, as shown by Section 53.)

- 1) Geological Mapping
 - 2) Line Survey - chain and compass
 - 3) Geochemical Surveys
 - a) Soil Survey
 - b) Silt Survey
 - 4) Geophysical Surveys
 - a) Gravity Survey
 - i) Gravity Instrument Survey
 - ii) Levelling Survey
 - b) Magnetometer Survey
 - c) Electromagnetic Survey
 - 5) Claim Survey - orthophoto control
- See attached property work map for specific surveys completed on each claim.

Sworn before me at Vancouver, B.C.
this 26th day of September 19 75

Notary Public

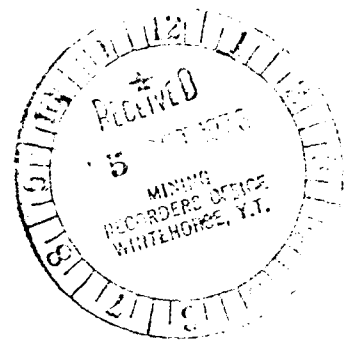
Applicant.



Department of Indian Affairs and Northern Development
YUKON QUARTZ MINING ACT

FORM "C" - APPLICATION FOR A CERTIFICATE OF WORK

(This form required in duplicate with sketch showing location of work.)



I (Name)	George Norman	Occupation	Geologist
(Postal Address) 1600-1050 W. Pender Street, Vancouver, B.C.			

OFFICE DATE STAMP

MAKE OATH AND SAY, THAT :-

1. I am the owner, or agent of the owner, of the mineral claim(s) to which reference is made herein.

2. I have done, or caused to be done, work on the following mineral claim(s):
(Here list claims on which work was actually done by number and name)

CLAIM	NUMBER
Brie #111	YA3761
Brie #115	YA3765
Brie #117	YA3767

situated at Fox Creek, Yukon Claim Sheet No. 105F/14
in the Whitehorse Mining District, to the value of at least 3000.00
dollars, since the 26 day of September 19 75

to represent the following mineral claims under the authority of Grouping Certificate No. 64000
(Here list claims to be renewed in numerical order, by number and name, showing renewal period requested).

GROUP #9		
CLAIM	GRANT NUMBER	RENEWAL PERIOD
Brie #111	YA3761	Sept. 26/76-Sept. 26/80 <i>H.N.</i>
" 115	YA3765	" "
" 116	YA3766	" "
" 117	YA3767	" "
" 118	YA3768	" "
" 120	YA3770	" "

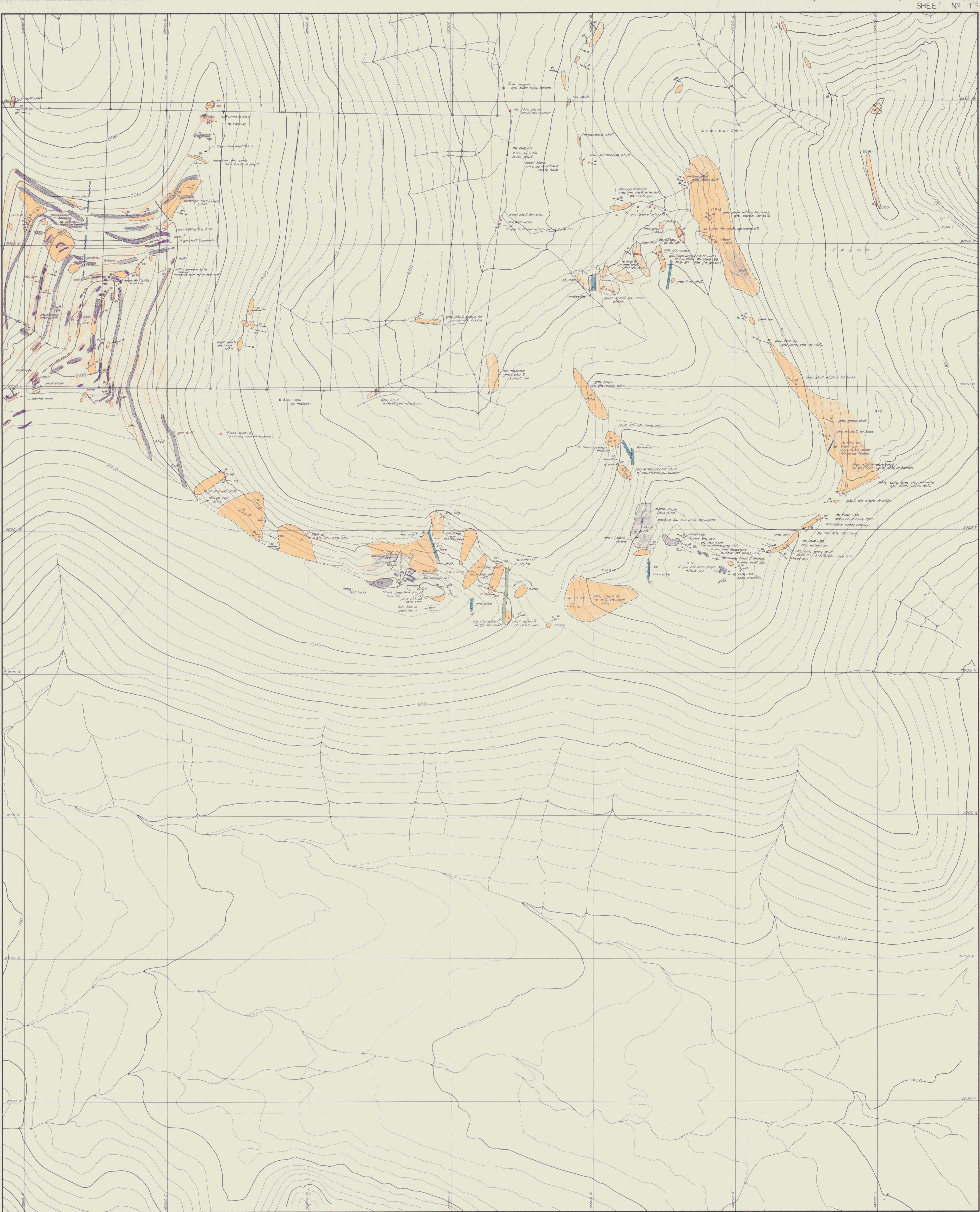
3. The following is a detailed statement of such work: (Set out full particulars of the work done in the twelve months in which such work is required to be done, as shown by Section 53.)

- 1) Geological Mapping
 - 2) Line Survey - chain and compass
 - 3) Geochemical Surveys
 - a) Soil Survey
 - b) Silt Survey
 - 4) Geophysical Surveys
 - a) Gravity Survey
 - i) Gravity Instrument Survey
 - ii) Levelling Survey
 - b) Magnetometer Survey
 - c) Electromagnetic Survey
 - 5) Claim Survey - orthophoto control
- See attached property work map for specific surveys completed on each claim.

Sworn before me at Vancouver, B.C.
this 26th day of September 19 75

Notary Public

George Norman
Applicant.



legend :

- Dykes
- Hornblende Diorite
- Andesite 1/ dark fine grained andesite
2/ quartz-felspar porphyritic andesite
- Silurian - well bedded dolomites, minor quartzite beds
- Age ? - massive dolomites
- Upper Cambrian - Kechika Group
 - Grey phyllite, orange weathering calcareous and non calcareous units with interbeds of phyllitic limestone and tuff.
 - Phyllitic limestone
 - Andesitic tuff, more massive units with euhedral pyrite crystals
 - Dolomite - rare thin beds
- Unconformity
- Lower Cambrian
 - Facies C - orange dolomite
 - Facies B - grey platy limestone
 - Facies A - brown limy argillites and phyllites
All above units are limy
- Hazeynian
 - Green argillite with quartzite units, not limy

symbols :

- Faults, observed, inferred
- Jointing
- Foliation
- Sheet dip
- Transposed bedding
- Small scale folds S-shaped S - arrow indicates plunge direction
2-shaped 2 - " " "
- Syncline, defined, approx.
- Anticline, defined, approx.
- Geological outcrop boundary
- Geological contact, observed, inferred
- Frost boils
- Boulders
- Sulfide mineralization
- Quartz-carbonate veining
- Quartz veining
- Diamond Drill Hole
- Picket
- Camp site
- Helicopter pad
- Rock Sample N°: Year, Project, Samplers Initial, Rock, Rock N°
- Sketch & Notes Numbers, Index Map, Field Map Sheet, Number

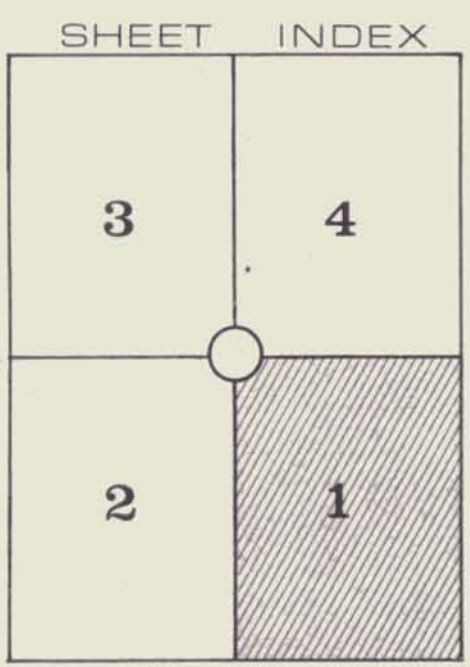


Plate 1
A. Lepp
PROFESSIONAL
ENGINEER
OF
BRITISH
COLUMBIA

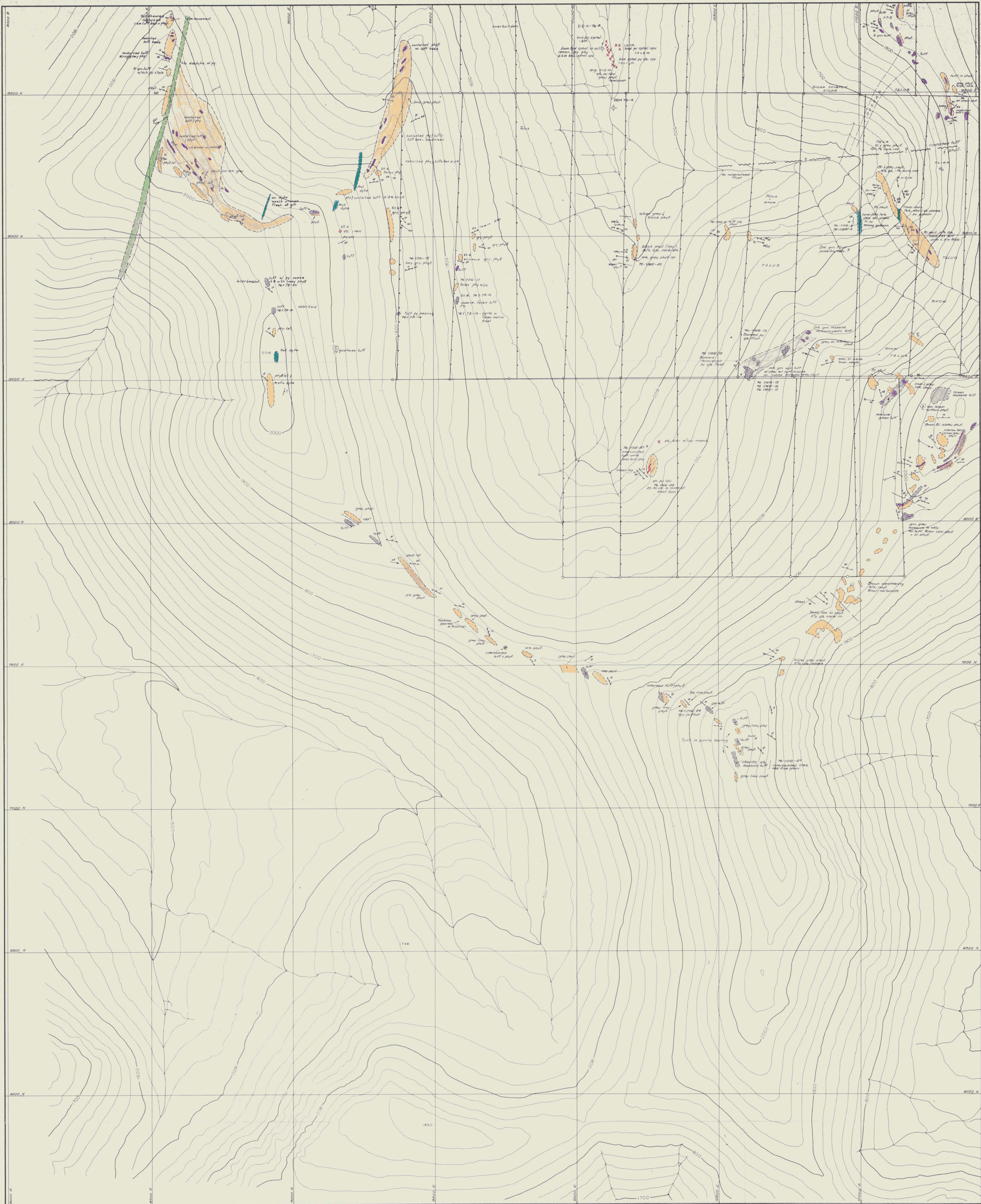
UTAH MINES LTD
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

FOX CREEK PROPERTY

GEOLOGY

Work by: S.N.C.M. J.W. I.R.W. Date: October 1976 NTS Ref: 105-F-74
Drawn by: Cornelia Damstra Revised:

100 50 0 100 200
SCALE IN METERS



legend :

- Dykes.
- Hornblende Diorite
- Anesite 1/ dark fine grained andesite
2/ quartz-felspar porphyritic andesite
- Silurian - well bedded dolomites, minor quartzite beds
- Age P - massive dolomites
- Upper Cambrian - Kechika Group
- 3 Grey, phyllite, orange weathering calcareous and non calcareous units with interbeds of phyllitic limestone and tuff.
- 4 Phyllitic limestone
- 5 Anesitic tuff, more massive units with euhedral pyrite crystals
- 6 Dolomite - rare thin beds
- Unconformity
- Lower Cambrian
- 2 Facies C - orange dolomite
- 2 Facies B - grey, platy limestone
- 2 Facies A - brown limy argillites and phyllites. All above units are limy
- 1 Hadrynian
- Green argillite with quartzite units, not limy

symbols:

- Faults, observed, inferred
- Jointing
- Foliation
- Sheet dip
- Transposed bedding
- Small scale folia S-shaped S → arrow indicates plunge direction
2-shaped 2 → "
- Syncline, defined, approx.
- Anticline, defined approx.
- Geological outcrop boundary
- Geological contact, observed, inferred
- Frost boils
- Boulders
- Sulfide mineralization
- Quartz - carbonate veining
- Quartz veining
- Diamond Drill Hole
- Pickup
- Camp site
- Helicopter pad
- 76 YNR-12
- Rock Sample N2; Year, Project, Sampler Initial, Rock, Rock N°
- 3-1-2
- Sketch f. Notes Numbers, Index Map, Field Map Sheet, Number

SHEET INDEX

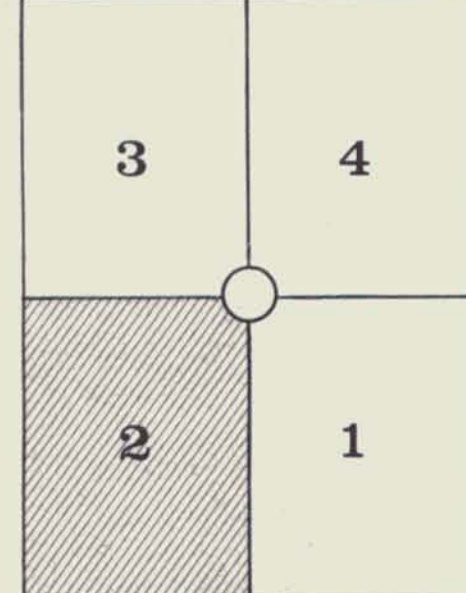


Plate 2

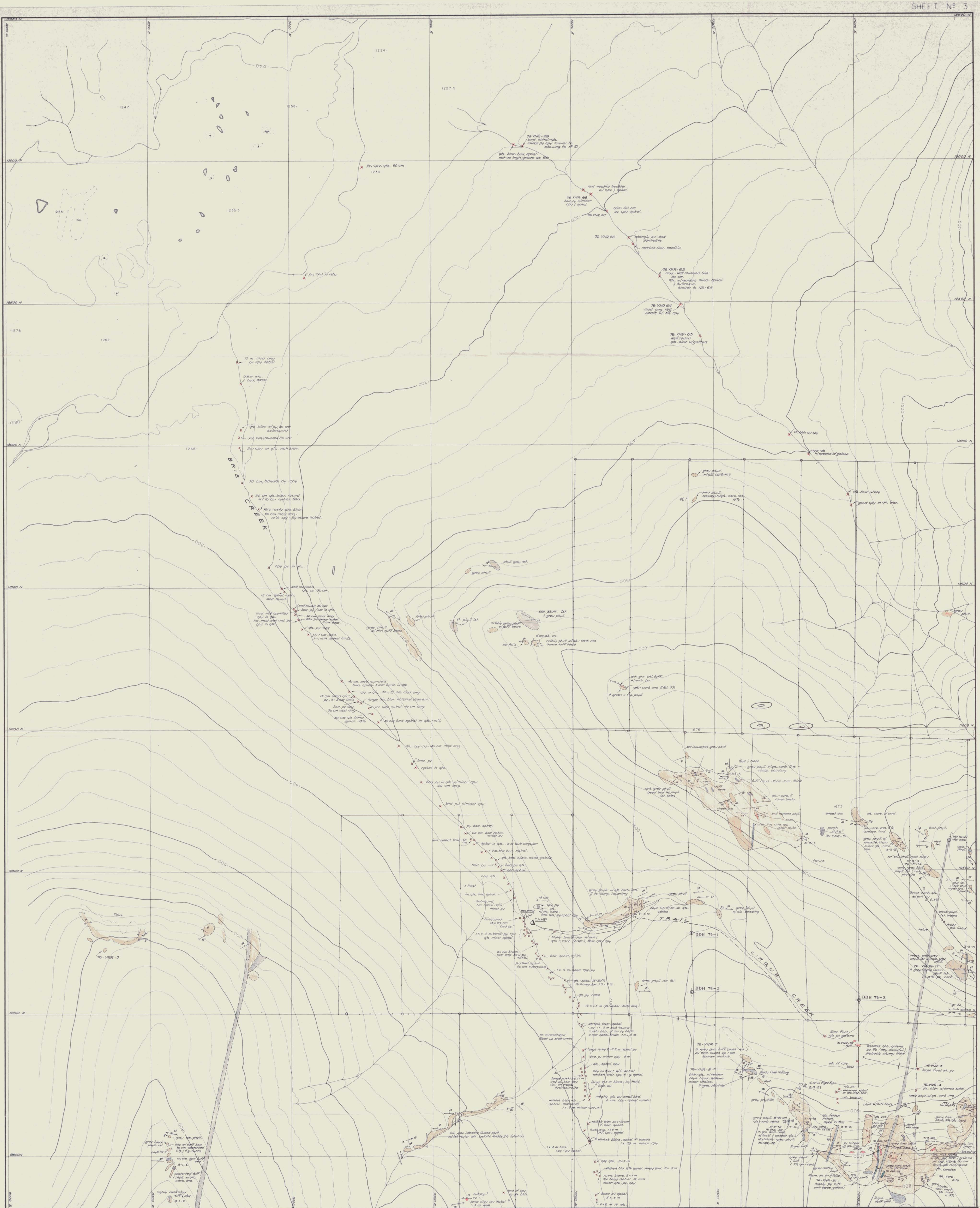
UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

FOX CREEK PROPERTY

GEOLOGY

Work by: G.N.C.W. J.W. I.R.W. Date: October 1976 NTS Ref: 105-F-14
Drawn by: Cornelia Danvers Revised:

100 50 0 100 500
SCALE IN METERS



- legend :**
- Dikes
 - Hornblende Diorite
 - Andesite
 - 1/ dark fine grained andesite
 - 2/ quartz-felspar porphyritic andesite
 - Silurian - well bedded dolomites, minor quartzite beds
 - Age ? - massive dolomites
 - Upper Cambrian - Kechika Group
 - 3 Grey phyllite, orange weathering calcareous and non calcareous units with interbeds of phyllitic limestone and tuff
 - 3 Phyllitic limestone
 - 3 Andesitic tuff, more massive units with euhedral pyrite crystals
 - 3 Dolomite - rare thin beds
 - Unconformity
 - Lower Cambrian
 - 2 Facies C - orange dolomite
 - 2 Facies B - grey platy limestone
 - 2 Facies A - brown limy argillites and phyllites
 - All above units are limy
 - Hudsonian
 - Green argillite with quartzite units, not limy

- symbols:**
- Faults, observed, inferred
 - Jointing
 - Foliation
 - Sheet dip
 - Transposed bedding
 - Small scale folias S-shaped S arrow indicates plunge direction
 - 2-shaped 2-shaped
 - Syncline, defined, approx.
 - Anticline, defined approx.
 - Geological outcrop boundary
 - Geological contact, observed, inferred
 - Frost boils
 - Boulders
 - Sulfide mineralization
 - Quartz - carbonate veining
 - Quartz veining
 - Diamond Drill Hole
 - Pickup
 - Camp site
 - Helicopter pad
 - Rock Sample N°; Year, Project, Sampler Initial, Rock, Rock N°
 - 3-1-2 Sketch, Notes Numbers, Index Map, Field Map Sheet, Number

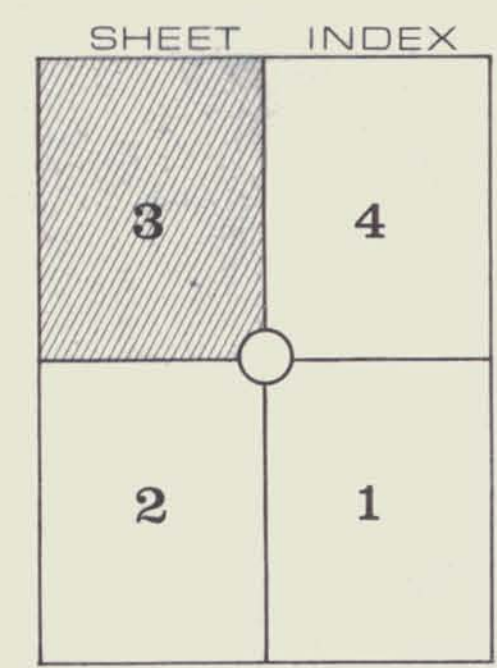


Plate 3

A. J. Schmidt
PROFESSIONAL
OF
A. J. SCHMIDT
BRITISH
COLUMBIA
ENGINEER

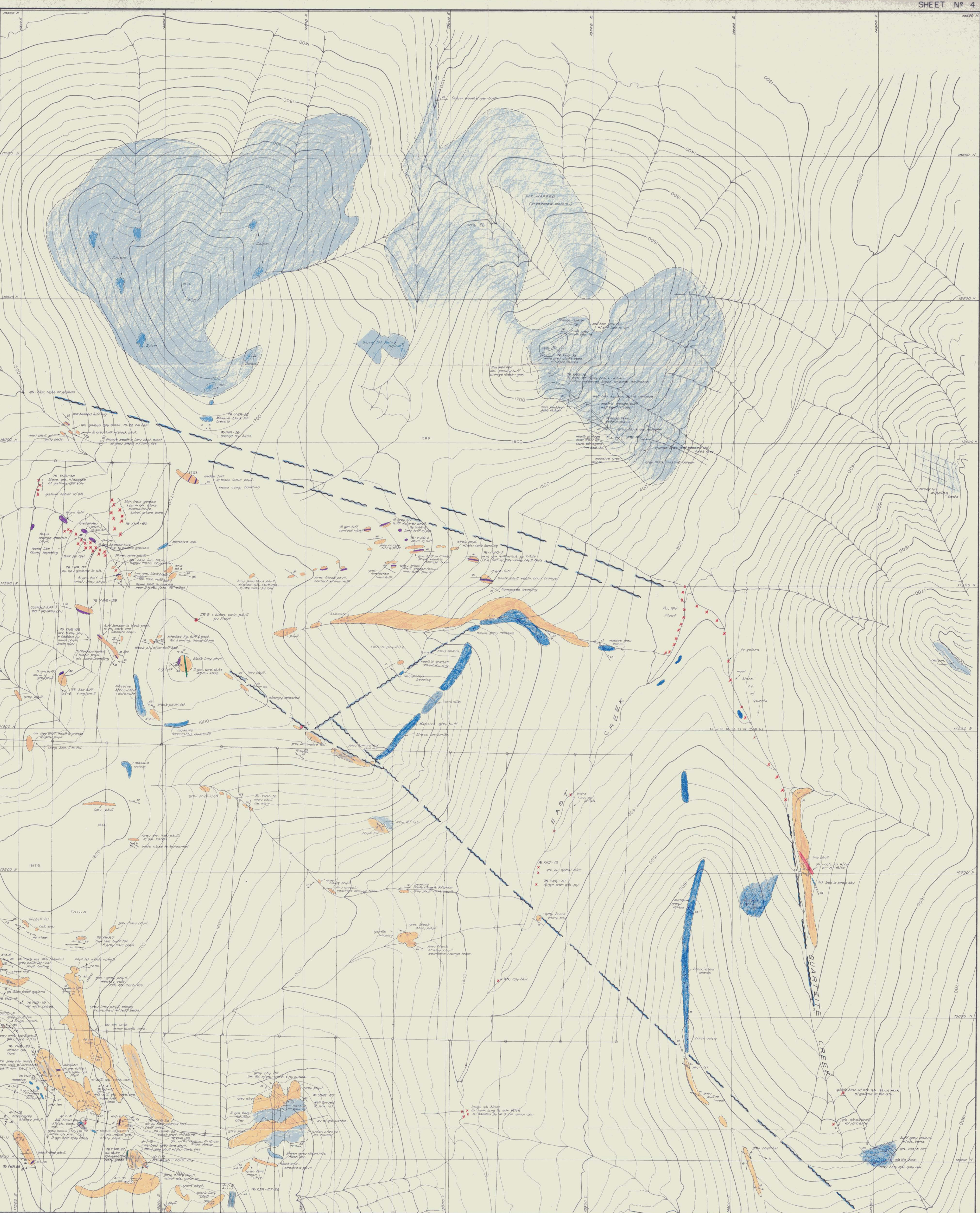
UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

FOX CREEK PROPERTY

GEOLOGY

Work by: G.N.C.M. J.W. I.R.W. Date: October 1976 NTS Ref: 105-F-14
Drawn by: Corneil Danovs Revised:

100 50 0 100 200
SCALE IN METERS



legend :

Dykes:

- Homblende Diorite
- Andesite 1/ dark fine grained andesite
- 2/ quartz-feldspar porphyritic andesite
- Silurian - well bedded dolomites, minor quartzite beds
- Age? - massive dolomites
- Upper Cambrian - Kechika Group
- Grey phyllite, orange weathering calcareous and non calcareous units with interbeds of phyllitic limestone and tuff
- Phyllitic limestone
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- Facies B - grey platy limestone
- Facies A - brown limy argillites and phyllites
- All above units are limy
- Hedrynian
- Green argillite with quartzite units, not limy

symbols:

- Faults, observed, inferred
- Jointing
- Foliation
- Sheet dip
- Transposed bedding
- Small scale folds S-shaped, S arrow indicates plunge direction
- 2-shaped 2 arrow indicates plunge direction
- Syncline, defined, approx.
- Anticline, defined approx.
- Geological outcrop boundary
- Geological contact, observed, inferred
- Frost boils
- Boulders
- Sulfide mineralization
- Quartz-carbonate veining
- Quartz veining
- Diamond Drill Hole
- Picket
- Camp site
- Helicopter pad
- Rock Sample No; Year, Project, Samplers Initial, Rock, Rock No
- Sketch & Notes Numbers, Index Map, Field Map Sheet, Number

76 YNR-12

3-1-2

SHIELD INDEX

3	4
2	1

Plate 4

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

FOX CREEK PROPERTY

GEOLOGY

Work by: G.N.C.W.J.W.F.R.W. Date: October 1976 NTS Ref: 105-F-14
Drawn by: Corneil Donkers Revised:

100 0 100 200
SCALE IN METERS



SCALE 1:50

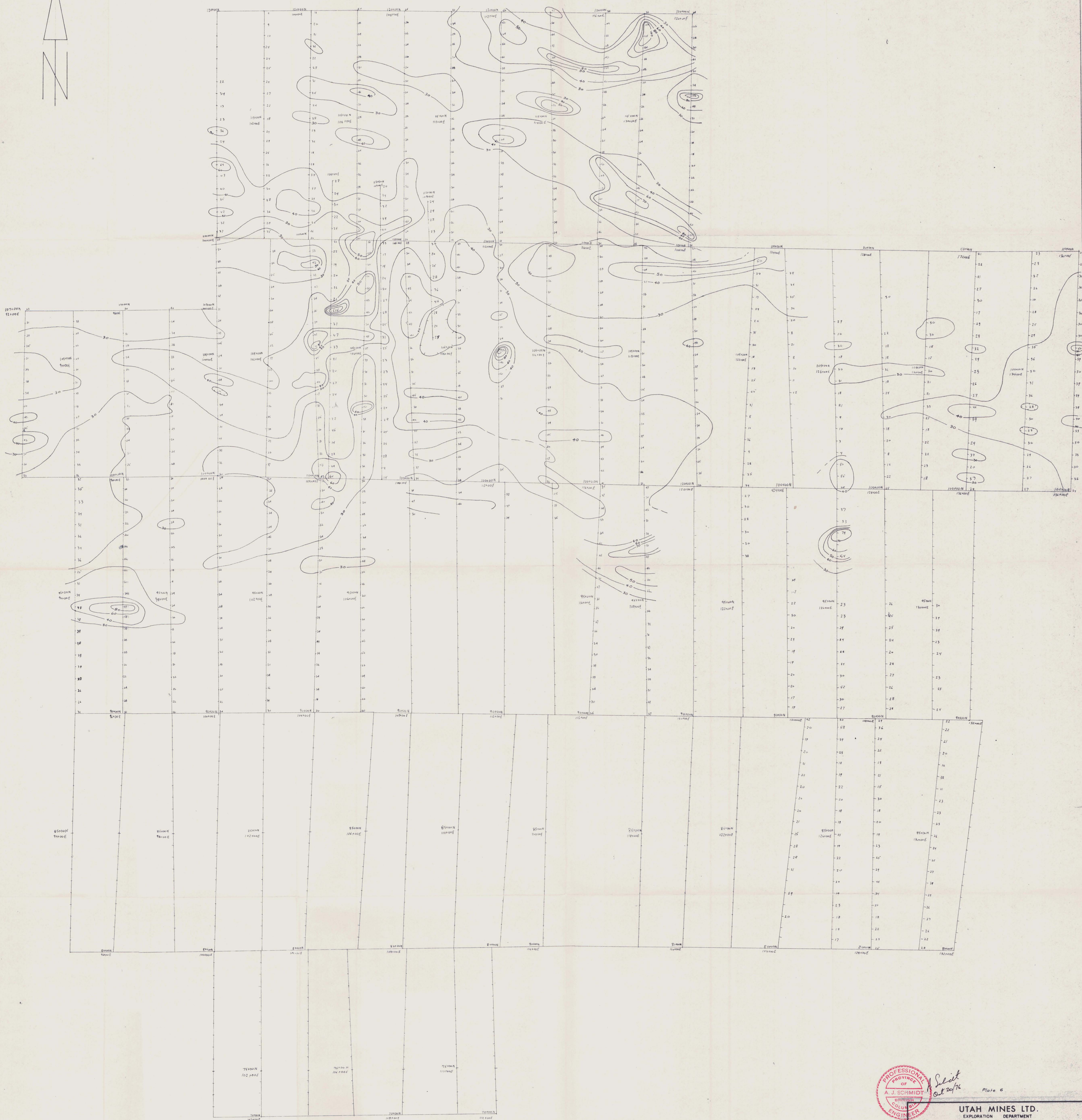
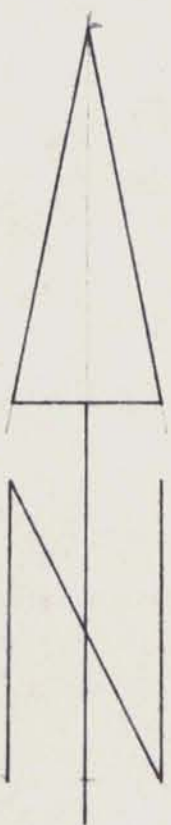


UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

FOX CREEK PROPERTY
SOIL GEOCHEMISTRY
Zn ZINC in ppm

Work by: G.A. C.W. J.F.W. Date: October 1976 NTS Ref: 105-F-14
Drawn by: G.A. Revised:

SCALE IN METERS



UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

FOX CREEK PROPERTY
SOIL GEOCHEMISTRY
Pb LEAD in ppm

Work by: G.M. C.W. J.W. Date: October 1976 NTS Ref: NTS-P-14
Drawn by: G.M. Revised:

SCALE IN METERS



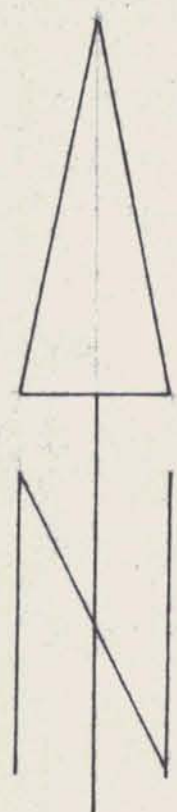
Plate 7

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER, BRITISH COLUMBIA

FOX CREEK PROPERTY
SOIL GEOCHEMISTRY
Cu COPPER in ppm

Work By: G.M. C.W. J.W. H.W. Date: October 1976 NTS Ref: 105-F-14
Drawn By: G.M. Revised:

SCALE IN METERS



PROFESSIONAL
OF
A. J. SCHMIDT
BRITISH
COLUMBIA
ENGINEER

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

FOX CREEK PROPERTY
SOIL GEOCHEMISTRY
Ag SILVER in ppm

Work by: G.N.C.W. J.W. H.W. Date: October 1976 NTS Ref: 105-F-14
Drawn by: G.N. Revised:

SCALE IN METERS



sheet index

11	12
10	9



A circular red ink seal for a professional engineer. The outer ring contains the text "PROFESSIONAL" at the top, "PROVINCE OF" in the middle, and "BRITISH COLUMBIA" at the bottom. The center of the seal contains the name "A. J. SCHMIDT" and the title "ENGINEER" below it. The seal is stamped over a document with horizontal lines.

A Schilt
Oct 20/76

Plate 9

UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

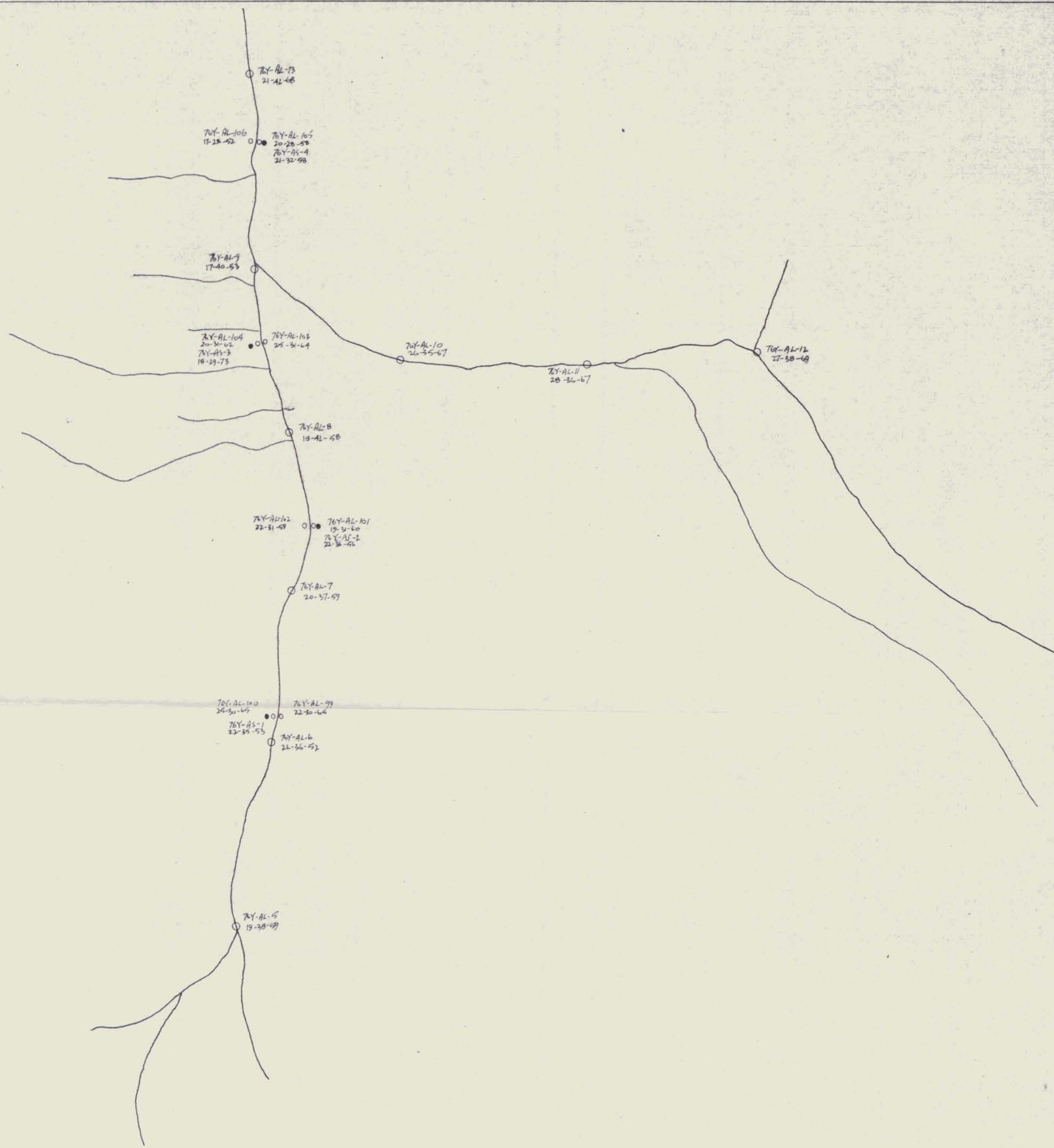
FOX CREEK PROJECT

SILT GEOCHEMISTRY

Work by: S.R., D.J.	Date: Aug. 1976	NTS Ref. 105-F-14
Drawn by: G.N. S.R.	Revised:	

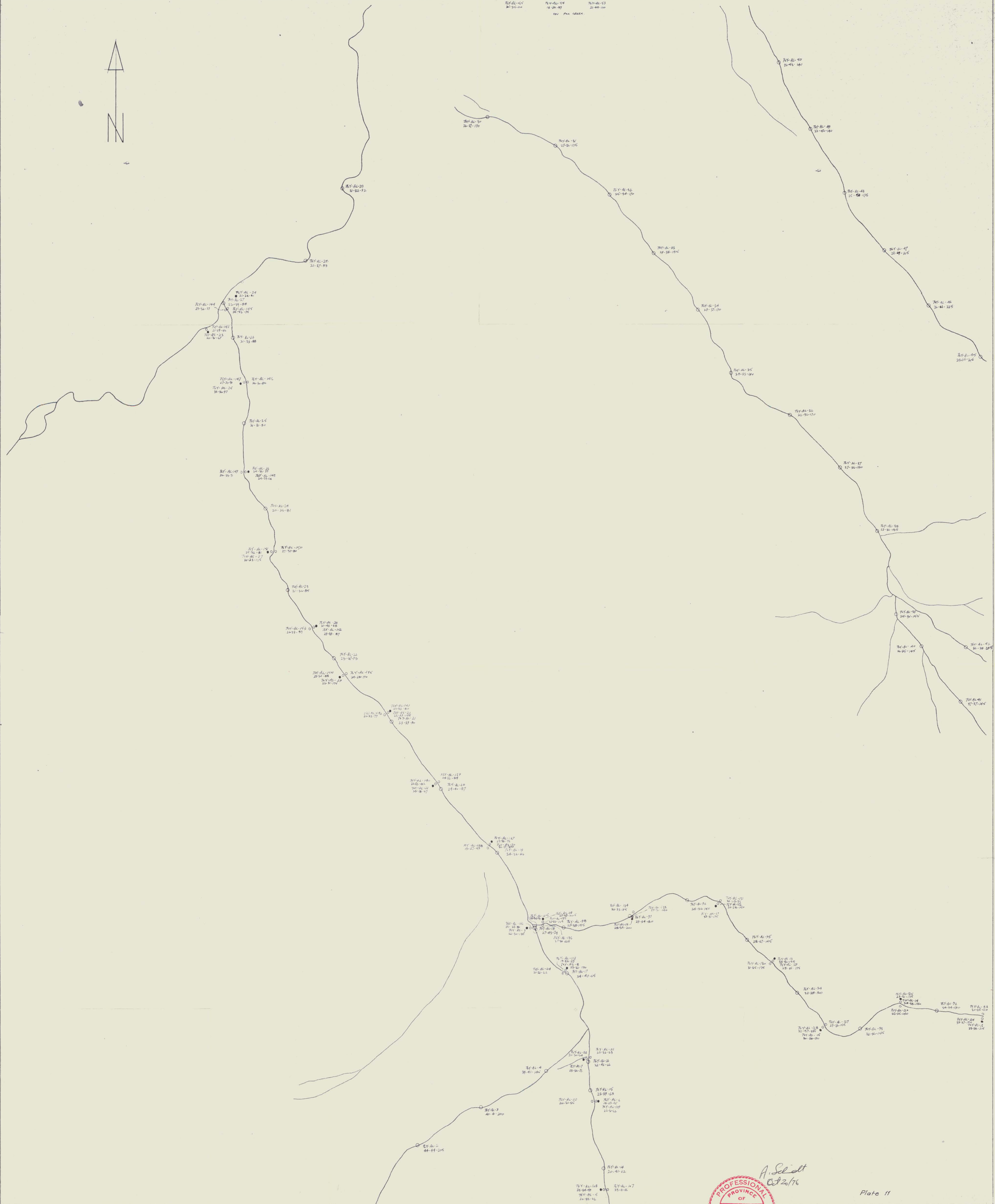
100 50 0 100 200

SCALE IN METERS



50 0 100 200

SCALE IN METERS



LEGEND:

Silts - 76 Y A L - 12 Silt number
Year Yukon Sampler's Initial

23, 42, 66 (ppm)
Cu Pb Zn

Stream center samples

Stream bank samples

Soils - 76 Y A S - 20 Soil number

Year Yukon Sampler's Initial

22, 33, 190 (ppm)
Cu Pb Zn

Soil near streams

sheet index

11	12
10	9



UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

FOX CREEK PROJECT

SILT GEOCHEMISTRY

Work by: S.R., D.T. Date: Aug. 1976 NTS Ref: 105-F-14

Drawn by: G.N. S.R. Revised:

SCALE IN METERS



LEGEND:

Silts - 76 Y A L - 12
Year Yukon Sampler's Initial

23, 42, 66 (ppm)
Cu Pb Zn

76 YAS - 13
76 YAS - 15
76 YAS - 14

Stream center samples
Stream bank samples

Soils - 76 Y A S - 20
Year Yukon Sampler's Initial

22, 35, 190 (ppm)
Cu Pb Zn

• Soil near streams

sheet index

11	12
10	9



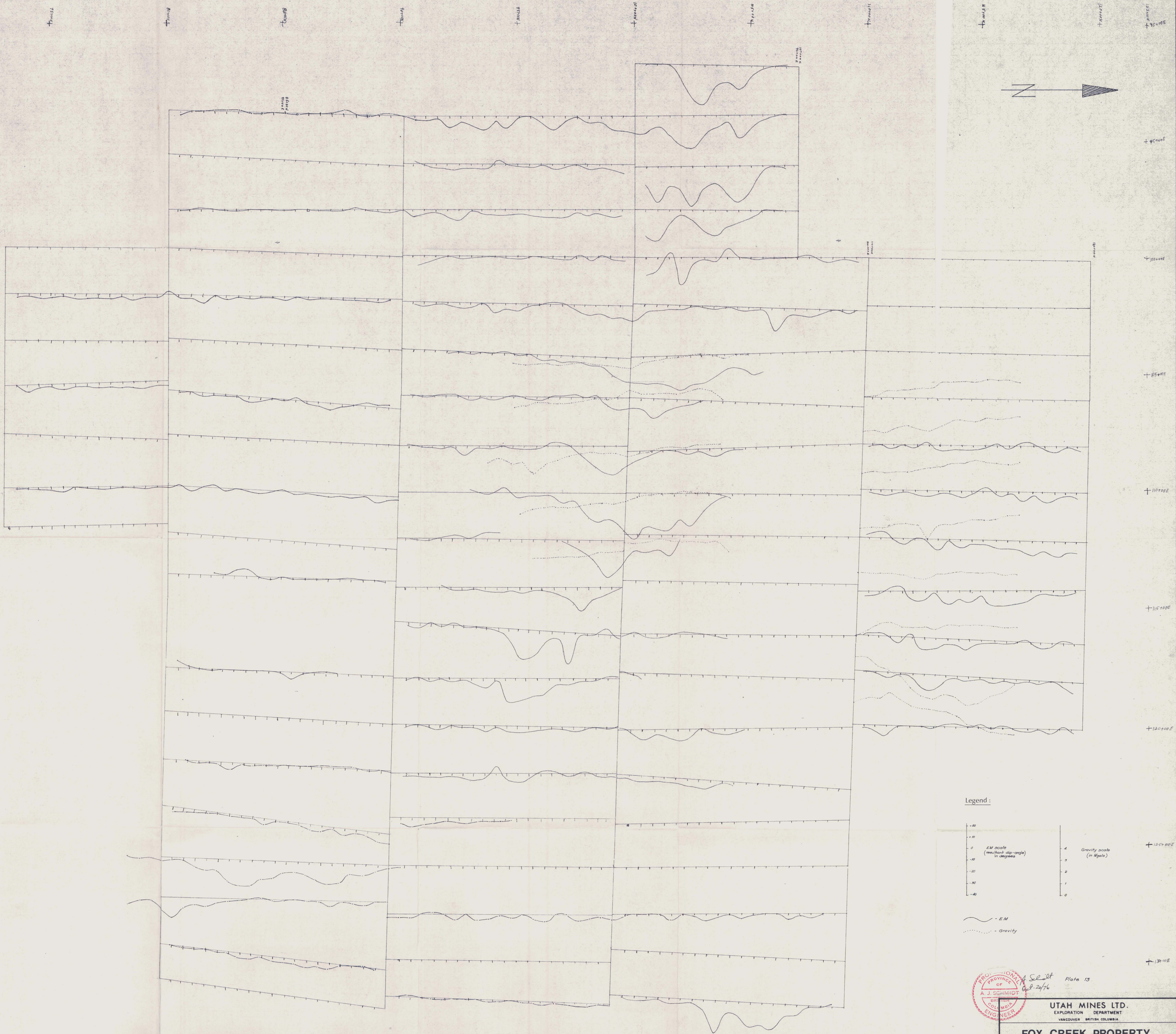
UTAH MINES LTD.
EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

FOX CREEK PROJECT
SILT GEOCHEMISTRY

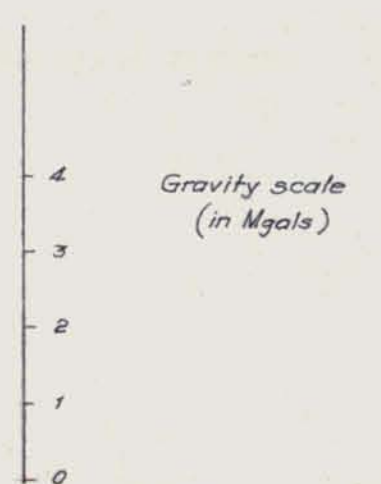
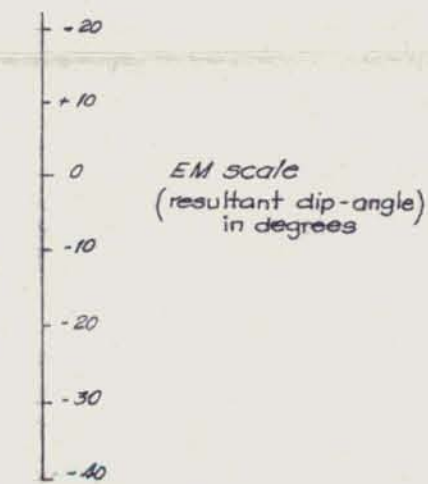
Work by: S.R.D.J. Date: Aug. 1976 NTS Ref: 105-F-44
Drawn by: G.M.S.R. Revised:

SCALE IN METERS
0 50 100 200

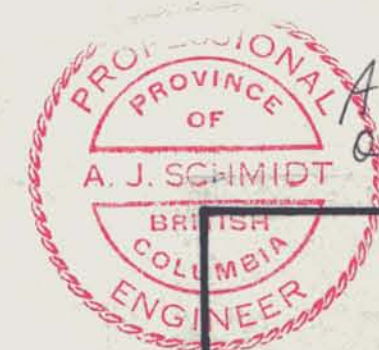
Plate 12



Legend :



— EM
..... Gravity



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EXPLORATION DEPARTMENT
VANCOUVER BRITISH COLUMBIA

FOX CREEK PROPERTY
ELECTROMAGNETIC
AND GRAVITY SURVEYS

Work by: J. K. Schmitt Date: October 1976 NTS Ref: 105-P-14
Drawn by: J. V. F. R. Revised:

SCALE IN METERS



Legend:

Total Field - 55,000 gammas + station reading
Contour Interval - 10 gammas



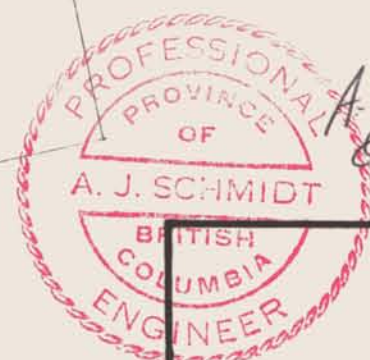
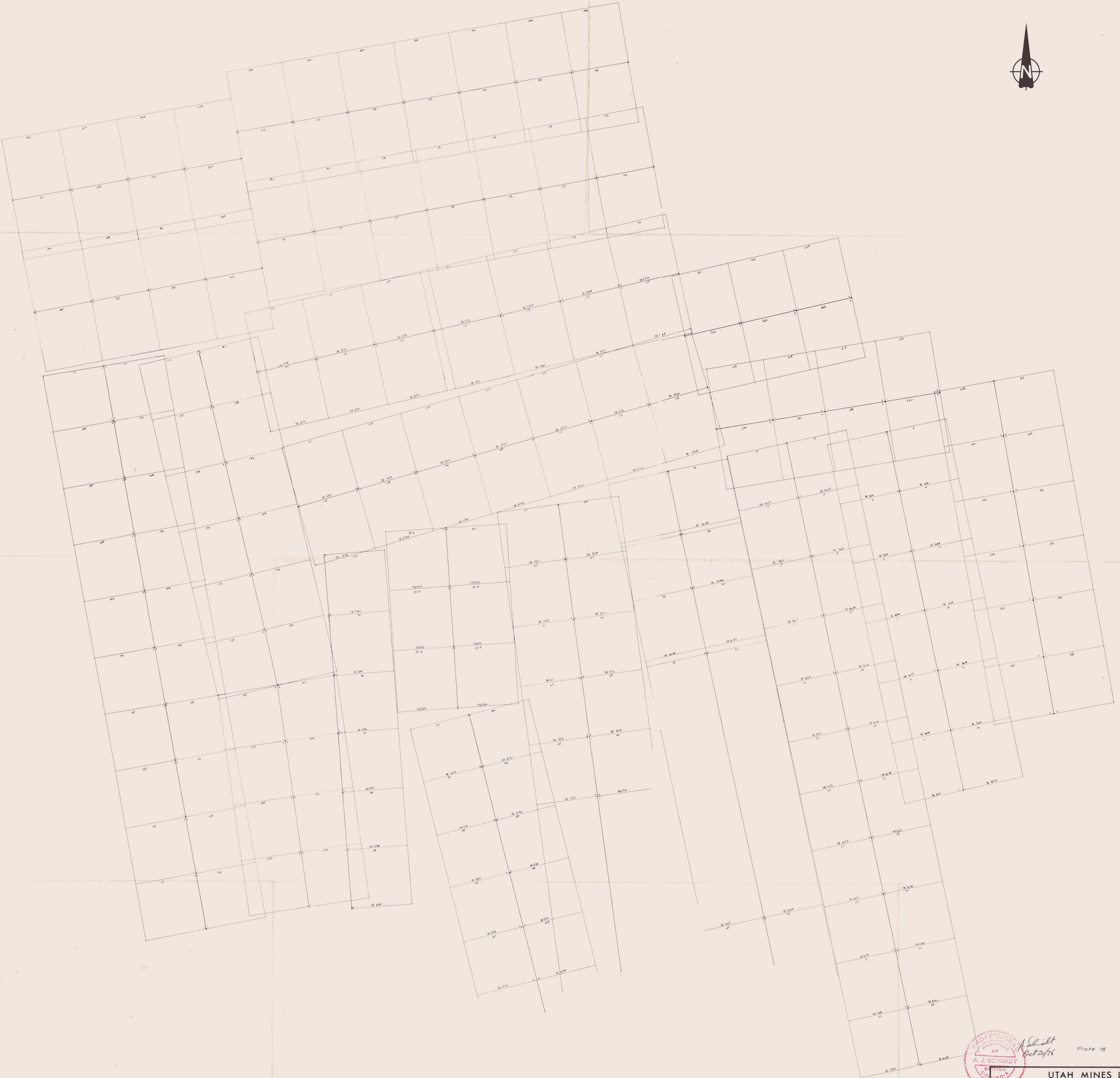
Plate 14

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VANCOUVER, BRITISH COLUMBIA

FOX CREEK PROPERTY
TOTAL MAGNETIC FIELD INTENSITY

Work by: J. Kynelcar Date: October 1976 NTS Ref: 105-F-14
Drawn by: J. Kynelcar Revised:

SCALE IN METERS



A. Schmidt
1976/76

Plate 15

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VANCOUVER BRITISH COLUMBIA

FOX CREEK PROPERTY

CLAIM MAP

Work by: S. Ramsey Date: August 1976 NTS Ref: 105-F-14
Drawn by: S. Ramsey Revised:

SCALE IN METERS

PROPERTY WORK MAP



LEGEND
 EM
 GRAVITY LEVELING
 MAG
 SOILS
 SILTS
 GEOLOGY LIMITS
 CLAIM BOUNDARY



Scale $\frac{1}{2}$ mile to 1 inch

PLATE 16

