116B/2
B/3

1150/14
1150/15

ASSESSMENT REPORTS

Dawson M.D.
090448

MAP No.

TYPE OF WORK: Geology, Geochemical, Radiometric

REPORT FILED UNDER	Ukon Joint Venture.
DATE PERFORMED	May-July, Aug + Sept 1978 **DATE FILED:** March 5'79
LOCATION— LAT.	64°01'N
LONG.	139°04'W
CLAIM Nos.	See reverse. SURPRIZE 1-219
$92,225.00	
WORK DONE BY	Alan R. Archer, B.A Sc. P.Eng. Archer, Cathro + Assoc. Ltd.,
WORK DONE FOR	Ukon Joint Venture.
REMARKS	Work on the SURPRISE claims in 1978 included geological mapping, water, stream sediment and soil geochemical surveys, ground radiometric and magnetometer surveys.

090448
STAR PRINTING WHITEHORSE

SURPRISE 1,3,5,7	YA9568,-YA9568
10,12,14,16,	YA9569-YA9572
2,4,6,8,	YA9573-9576
9,11,13,15,	YA9577-9580
17-32,	YA10204-YA10219
33-95,	YA10681-YA10743,
96-158	YA29544-YA29606,
159-205,	YA31420-YA31466
206-210	YA31468-YA31472
211,	YA31467
212-219	YA31473-YA31480

soil radon gas surveys, trenching, diamond drilling, and down-hole radiometric surveys. The claims are underlain by a Tertiary quartz-feldspar porphyry stock intruding chlorite schist, black carbonaceous phyllite, marble, and greenstone of the Klondike and Nasina Series. Eight anomalous radiometric and soil geochemical areas were identified. All but one were within the porphyry pluton or at its contact. Some relationship to faulting is apparent. Recovery from the diamond drilling was poor. A total of 9 holes of NQ size totalling 1349 feet were drilled, and downhole radiometric surveys were conducted. Core samples and sludge were analyzed for uranium and gold. Trenching and rock analyses were also carried out.

ASSESSMENT REPORT SURPRIZE CLAIMS

DAWSON MINING DISTRICT, NTS
116B/2, 116B/3, 1150/4, 1150/15

A.R. Archer, P.Eng. Feb. 15, 1979

ASSESSMENT REPORT

ON

GEOLOGY, GEOCHEMISTRY, RADIOMETRIC SURVEYS

CONDUCTED MAY 15 TO JULY 30 AND

AUGUST 24 TO SEPTEMBER 21, 1978

ON

SURPRIZE 1-219 CLAIMS

DAWSON MINING DISTRICT

CLAIM SHEETS 116B/2, 116B/3, 115O/14 AND 115O/15

Latitude 64°01'N; Longitude 139°04'W

FEBRUARY 15, 1979

090448

Alan R. Archer, B.A.Sc., P.Eng. Consulting Engineer

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of

$32,225.00

D.B. Craig

Resident Geologist ~~or~~

~~Resident Mining Engineer~~

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

[illegible]

B. R. BAXTER
Supervising Mining Recorder

per Commissioner of Yukon Territory

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INTRODUCTION

The Ukon Joint Venture (UJV) program on the Surprize 1-219 claims (Unexpected Property) in 1978 consisted of soil sampling, mapping and radiometric surveys during the period May 15 to July 30, by D. Eaton assisted by E. Lyndberg, R. Rayner, J. Cockell and B. Hemingway and bulldozer trenching and diamond drilling during the period August 24 to September 21, supervised by M.P. Phillips. Management was provided by Archer, Cathro and Associates Ltd. The principles of UJV are Chevron Canada Ltd. and Kerr Addison Mines Ltd.

PROPERTY, LOCATION AND ACCESS

The Unexpected property consists of 219 Surprize claims lying in a contiguous, irregular block that are recorded in the name of Archer, Cathro and Associates Ltd. at the Dawson Mining Records office as follows:

CLAIM NAME	GRANT NUMBERS	EXPIRY DATE
Surprize 1,3,5,7	YA9565-YA9568	12 April, 1982
Surprize 10,12,14,16	YA9569-YA9572	"
Surprize 2,4,6,8	YA9573-YA9576	"
Surprize 9,11,13,15	YA9577-YA9580	"
Surprize 17-32	YA10204-YA10219	14 April, 1979
Surprize 33-95	YA10681-YA10743	"
Surprize 96-158	YA29544-YA29606	29 Feb., 1983
Surprize 159-205	YA31420-YA31466	26 July, 1979
Surprize 206-210	YA31468-YA31472	"
Surprize 211	YA31467	"
Surprize 212-219	YA31473-YA31480	"

The property is located at 64°01'N and 139°04'W straddling claim sheets 115O/14 and 15, and 116B/2 and 3, 26.6 km by road east of Dawson. Access is via

the all-weather Hunker Creek road which crosses the south end of the claim block and the Klondike Highway which parallels the north side of the claims. During the 1978 Exploration Program, 5.8 km of four wheel drive road was built on the property.

GEOLOGY

General Setting

The topography is typical of unglaciated terrain throughout the Dawson Range. Rounded subdued hills rise to elevations of 1200 m with local relief of up to 500 m. Streams occupy V-shaped valleys which have been modified by late Tertiary rejuvenation. Outcrop is rare and most hillsides are modified by a thin cover of residual till, soil and humus. Vegetation is characterized by open pine and aspen on south facing slopes, and thick moss with black spruce on north facing slopes where permafrost extends to surface. Surface leaching in similar terrain at the Casino property and the Keno Hill district reaches depths of up to 150 m.

The claims cover a Tertiary quartz-feldspar porphyry stock (eTqfp) that intrudes a complex metamorphic assemblage called the Schist-Gneiss Unit (Psn) by Tempelman-Kluit of the GSC. The stock consists of rounded and sometimes smoky quartz eyes up to 4 mm wide and subhedral feldspar phenocrysts up to 1 mm long in a white to buff felsic groundmass. Purple fluorite, topaz and miarolitic zeolites are trace acessory minerals. The eastern side of the stock is more intermediate in composition and contains areas of strong brecciation as well as several zones of intense argillic alteration. This stock is thought to be contemporaneous with intrusives elsewhere in the district that have been dated as Eocene (about 50 m.y.).

The Schist-Gneiss Unit is an undivided mixture of Klondike Schist and Nasina

Quartzite. Most outcrops on the Surprize claims consist of dark to pale green chlorite schist with some black carbonaceous phyllites, minor marble and foliated greenstone. All rock types contain numerous discontinuous lenses and/or veinlets of milky white quartz. Drilling has shown that the schist also contains abundant (up to 10 per cent) pyrite below the level of oxidation which is approximately 50 m deep. These metasedimentary rocks are thought to correlate with less deformed Paleozoic rocks in the Finlayson Lake district, on the opposite (northeast) side of the Tintina Fault. The age of the metamorphism is believed to be early or middle Triassic.

The geology of the property is illustrated on Figure U-UN9 in pocket. Since outcrop is virtually absent, the contact between the quartz porphyry stock and the Schist-Gneiss Unit has been defined by mapping surface float and rock fragments found in soil sample pits. Trenching has shown that the contact should be shifted uphill in some localities and that strong faulting is probably common in both the schist and porphyry. Several test lines were run with a Scintrex MF-2 Fluxgate Magnetometer in an attempt to locate the contact but no magnetic contrast was obtained.

Mineralization

Uranium has only been found in geochemically anomalous quantities. The highest rock assay obtained to date is 90 ppm U from leached schists in the bottom of 1977 bulldozer Trench UNB1. The highest value obtained in 1978 was 400 ppm in organic soil from Anomaly F near the mouth of Bordeleau Gulch. A sample from a zone of strongly anomalous radioactivity (1300/400 cps) intersected in 1978 Trench UNA7 assayed only 58 ppm U. No uranium mineral has been identified and the only coloured

uranium oxides seen under either normal or ultraviolet light is a trace of green fluorescence on schist from a hand pit near Trench UNB1.

Cassiterite has been found by placer miners in both Germaine and Hunker Creeks and is presumed to have weathered from the porphyry stock. This is supported by an assay of 100 ppm Sn obtained by the GSC (Economic Geology Report #28, p. 70) from a sample of altered porphyry outcropping near Germaine Creek. However, limited sampling of altered and unaltered brecciated porphyry from the Germaine Creek area by UJV in 1978 failed to duplicate GSC results and returned values of only 12 ppm Sn or less. The highest tin assay obtained by UJV is 14 ppm from porphyry cut in 1978 drill hole S7.

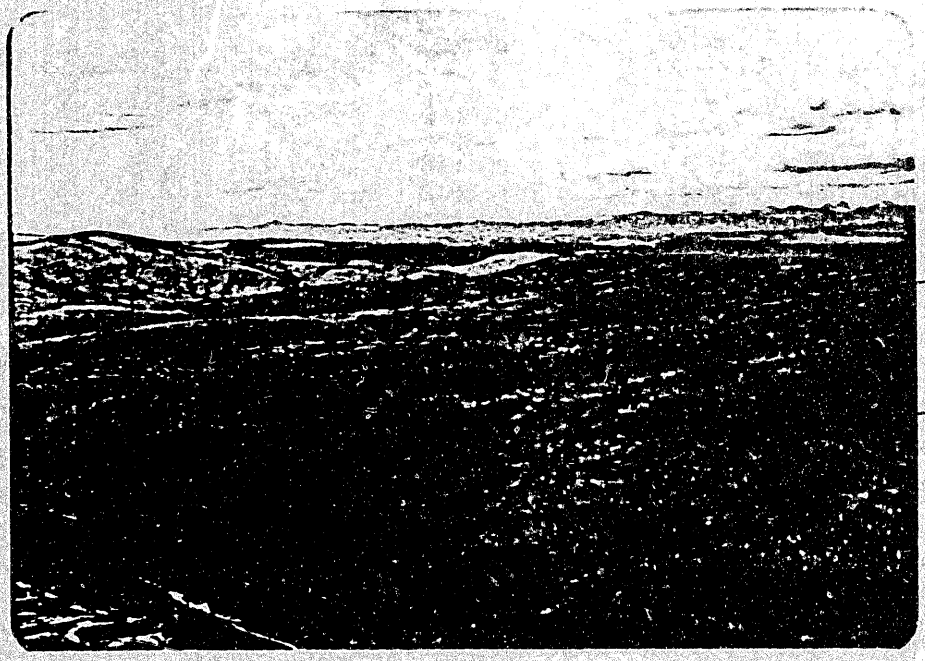
GEOCHEMICAL, RADIOMETRIC AND RADON SURVEY PROCEDURES

General

Grid geochemical and broadband scintillometer surveys started in 1977 were continued over most of the Surprize 1 to 158 claims in 1978. In addition, the Surprize 159 to 219 claims were explored in reconnaissance fashion and a detailed grid radon survey was conducted between Anomalies A, B and G (see Photograph 5 on the following page). Figure U-UN9 in pocket is a compilation of all geochemical and radiometric data (other than radon) obtained to date. The radon survey is illustrated separately as Figure U-UN10.

Survey Techniques

Flagged baselines were established by hip-chain and compass along the claim baselines (which are approximately 900 m apart) and crosslines were established every 100 m. Stations were marked with 0.5 m pickets at 100 m intervals on all lines. Total count gamma radiation was measured at waist height at 50 m intervals

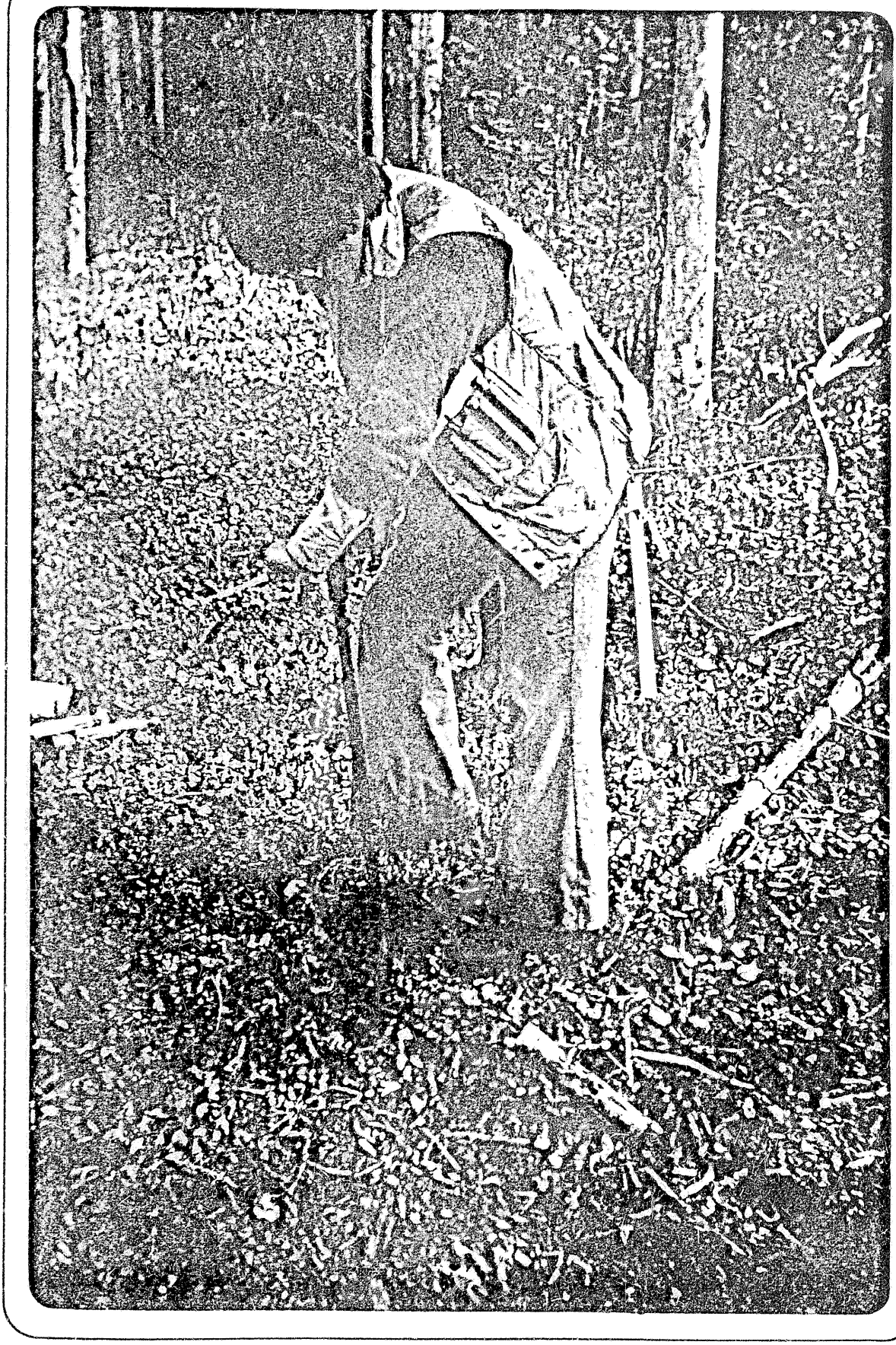


PHOTOGRAPH 5 - Anomalies A and B.

using Scintrex BGS-1SL (43 cc crystal) broadband scintillometers. The radiometric background ranges from 50 to 80 cps over Unit Psn schist to 90 to 170 cps over the porphyry stock. The highest waist height reading obtained was 400 cps at Anomaly E while the highest reponse on the property is 1300 cps from a narrow fault in bull-dozer Trench UNA7.

Soil samples were collected from a B + C soil horizon at 100 m intervals within a 500 m wide band spanning the favourable schist-porphyry contact and from hand pits in areas exhibiting anomalous radiometric response. The samples were shipped by air freight to Chemex Labs Ltd., North Vancouver where they were dried at 50°C, screened to minus 80 mesh, split and weighed, ashed at 550°C, digested twice in 4M nitric acid to dryness, picked up in acidified water, fused with a standard sodium fluoride-based flux and assayed in ppm uranium with a G.K. Turner fluorometer. Geochemical values are generally below the detection limit of 0.5 ppm U in areas underlain by Unit Psn and range from 0.5 ppm U to 5 ppm U over the porphyry stock.

The radon survey was conducted with alphaMeters, which are manufactured by alphaNuclear, Mississauga, Ontario and were rented to UJV from Chevron Canada Limited. The alphaMeter is a cylinder, 34.5 cm long and 5 cm in diameter that is inserted in an augered hole in the soil (see Photograph 6 on the following page). Alpha particles derived from radon gas in the soil are detected by a silicon-diffused junction with an active area of 400 square mm, referred to as a solid ionization chamber. The top of the alphaMeter has a 5 decade LED numeric display which sequentially displays elapsed time (to one hundredth of an hour) and alpha particle count on command. The alphaMeters are normally left in the ground for 48 hours but sufficient anomalous contrast was obtained at the Surprize claims to



PHOTOGRAPH 6 - Augering hole for alphaMeter.

provide satisfactory readings in 24 hour periods. A total of 30 alphaMeters were used and precautions were taken in the field to ensure comparability of readings between instruments. Readings at each station were converted to counts per hour (cph) for mapping purposes and plotted as a contoured plan.

An experimental test survey was also conducted with an EKCO Portable Radon Monitor (Type M8560), which is manufactured by Nuclear Enterprises Ltd., Reading, England. This instrument is designed to suck soil air out of a hole punched into the ground and reads the alpha count over a time span of less than two minutes. Although a malfunction of the instrument prevented completion of the tests, it was apparent that the high level of alpha response in anomalous areas at the Surprize claims would be sufficient to contaminate the Radon Monitor's sensitivity tube and make it inoperative for 24 hour periods between individual readings.

Although the radon surveys were not sufficiently extensive to determine an accurate figure, background is about 300 cph over Unit Psn and 600 cph over the porphyry stock. Anomalous areas exceed 1000 cph. The highest value obtained was 18,761 cph within a linear radon anomaly that extends between Anomalies A and G.

SURVEY RESULTS

General

Areas with anomalous radiometric and soil geochemical response are outlined as Anomalies A to H on Figure U-UN9 in pocket. Anomalies A to C were previously explored and are described in the 1977 UJV Final Report (see 1977 Figures U-UN7 and U-UN8). All except Anomaly H lie along the contact of the porphyry stock or within it and all occur on south facing slopes, except Anomaly A which faces a little west of south. Results of the 1978 surveys are discussed for each anomaly

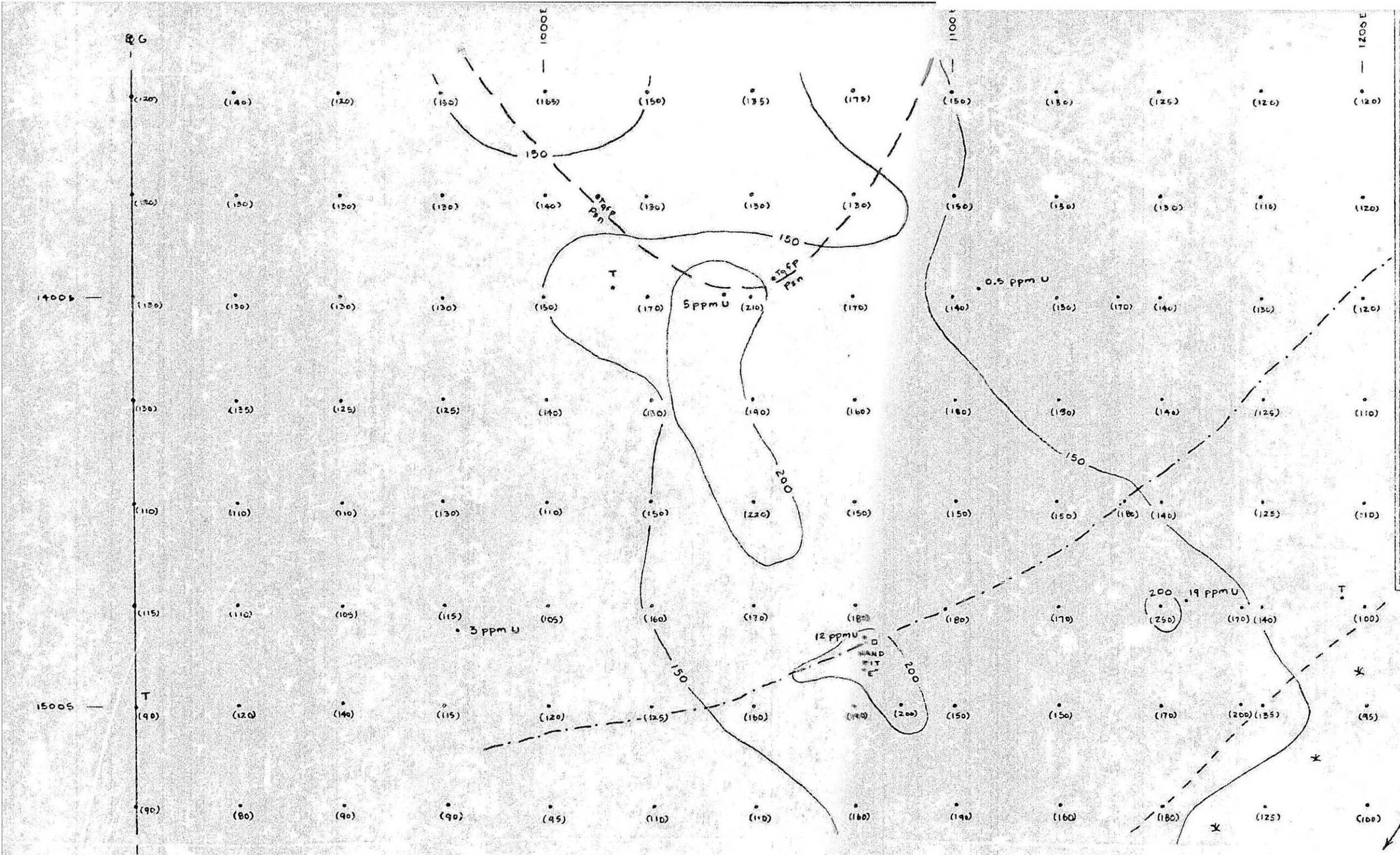
as follows:

Anomalies A, B and G

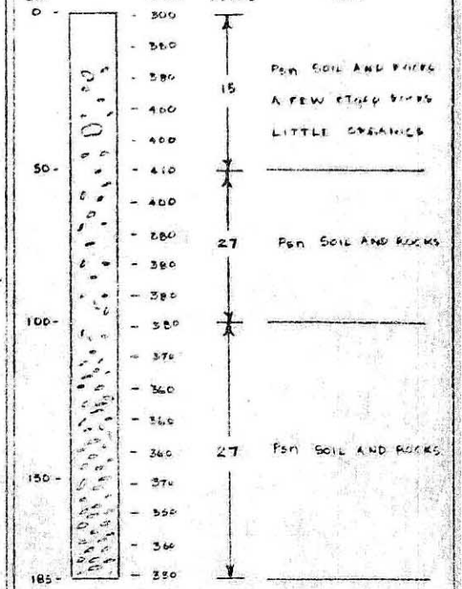
Anomalies A and B are primarily geochemical anomalies with soil values ranging between 8 ppm U and 192 ppm U at A and scattered values up to 184 ppm U at B. Surface radiometrics range up to 300 cps. Anomaly G was outlined in 1978 as a 100 m by 150 m area of weakly anomalous radioactivity (150 to 250 cps) and soil geochemistry (to 19 ppm U) at the contact of the porphyry stock as illustrated in Figure U-UN11 on the following page. A 1.8 m deep pit at a 12 ppm U soil sample location at Anomaly G exposed leached and broken Unit Psn which geochemically assayed 27 ppm U. Anomalies A, B and G occur near creeks that contain strongly anomalous water values ranging from 9.8 to 95 ppb U.

Most of the 1978 radon surveys were directed toward Anomalies A and B, as illustrated on Figure U-UN10 in the pocket. The survey was extended between A and B and then easterly to Anomaly G when a linear anomalous trend was followed in that direction. All these areas exhibit more or less coincident anomalous radon response in the range of 1,000 to 10,000 cph over a background between 300 and 600 cph.

A 200 m wide easterly linear trend in the anomalous radon response at Anomaly A was followed over 1000 m east to Anomaly G. This trend parallels a major fault cut in Trench UNA6. A second linear some 75 m wide and 400 m long extends southeast from Anomaly A. Both of these are in areas thought to be underlain by the porphyry stock.



PROFILE: HAND PIT "E"



PIT DIMENSIONS: 150cm x 160cm x 185cm

PROFILE OF NORTH TRENCH WALL WITH SCINTREX BGS-1SL (43cc crystal) broadband scintillometer - serial number 512179

LEGEND

- eTqfp / Psn — approximate geological contact
- 12 ppmU — soil sample analysis
- (95) — counts/second with Scintrex BGS-1SL (43cc crystal) broadband scintillometer
- ——— radiometric contour lines
- – – – break in slope, edge of swamp
- —.— old placer ditch

FIG U-UNSI

ARCHER CATHRO AND ASSOCIATES

DETAIL RADIOMETRICS: ANOMALY G

SURPRIZE 1-219 CLAIMS

UKON JOINT VENTURE

SCALE

1:1000

20 15 10 5 0 10 20 30 40 50

METRES

Anomaly C

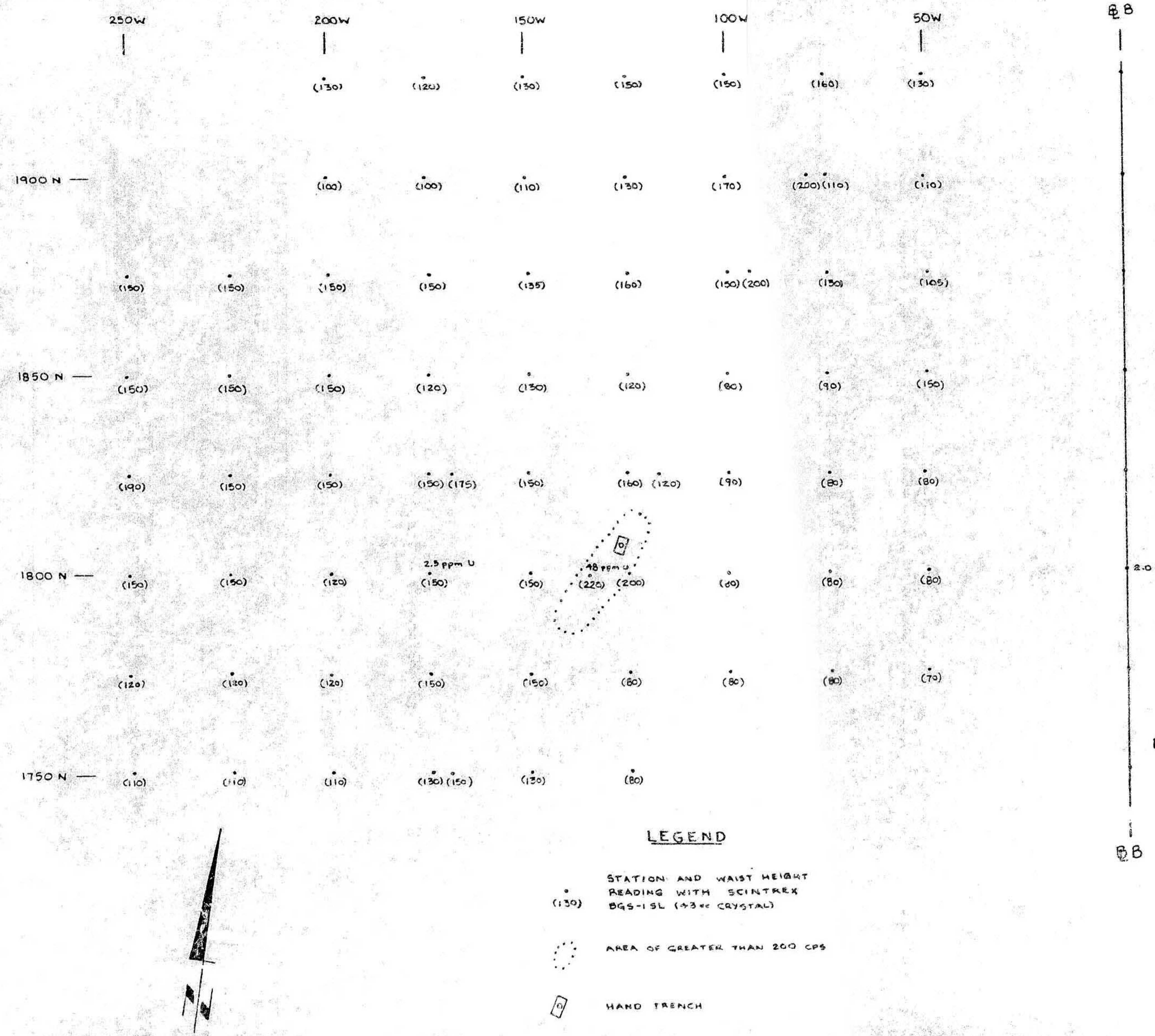
This is a 1977 anomaly (see 1977 Final Report Figure U-UN5) with anomalous soil values up to 59 ppm U and slightly anomalous radiometric response up to 190 cps. No work was done here in 1978.

Anomaly D

This is a small area (10 m by 40 m) of anomalous radiometric response up to 250 cps within the porphyry stock near the head of Unexpected Gulch. Details of the radiometrics and geochemical response from a 0.9 m deep hand pit are illustrated on Figure U-UN12 on the following page. A soil profile in the pit shows uranium content decreasing from 94 ppm U in organic material at surface to 8 ppm U in broken porphyry at the base. Water samples from Unexpected Creek contain less than 0.6 ppb U.

Anomaly E

This anomaly lies near the headwaters of Preido Gulch, which contain weakly anomalous water (1.7 ppb U). It is a radiometric anomaly about 50 m wide and 100 m long lying within the porphyry stock as illustrated on Figure U-UN13 (following Figure U-UN12). The radiometric response ranges from 200 cps to 400 cps and tends to form a west trending linear. Hand pits were dug at the ends of the linear. Pit B at the west end returned geochemical values ranging from 115 ppm U near surface to 52 ppm U at its final depth of 0.7 m. Pit C at the east end returned 65 ppm U from surface organic rich soil and less than 0.5 ppm U in broken porphyry bedrock 0.9 m below surface. The porphyry in Pit C exhibited dense, red hematite coatings up to 2 mm thick on joint surfaces as well as unusually black quartz phenocrysts.



SOIL PROFILE : HAND TRENCH D

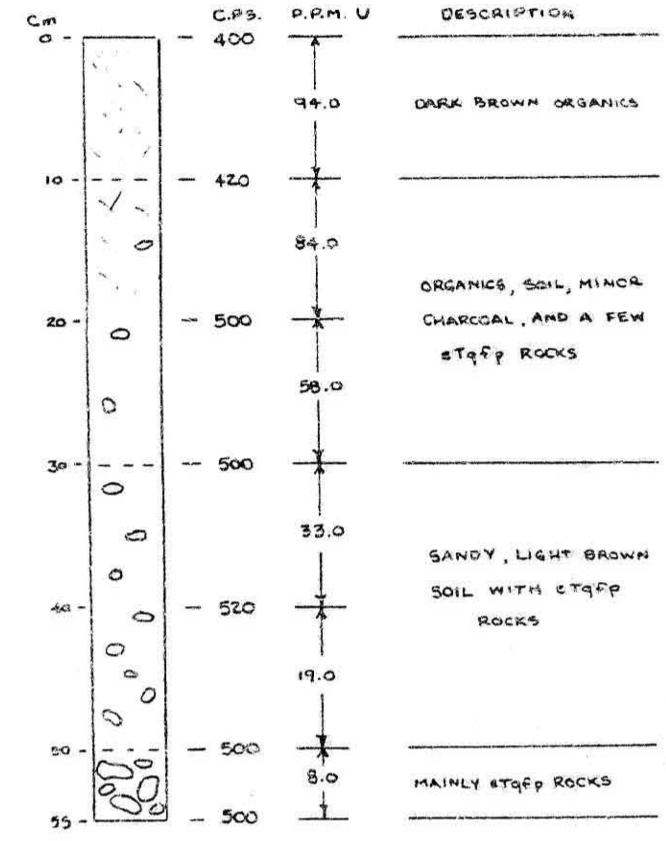


FIG. U-UN12

ARCHER CATHRO AND ASSOCIATES

DETAIL RADIOMETRICS: ANOMALY D

SURPRIZE 1-219 CLAIMS

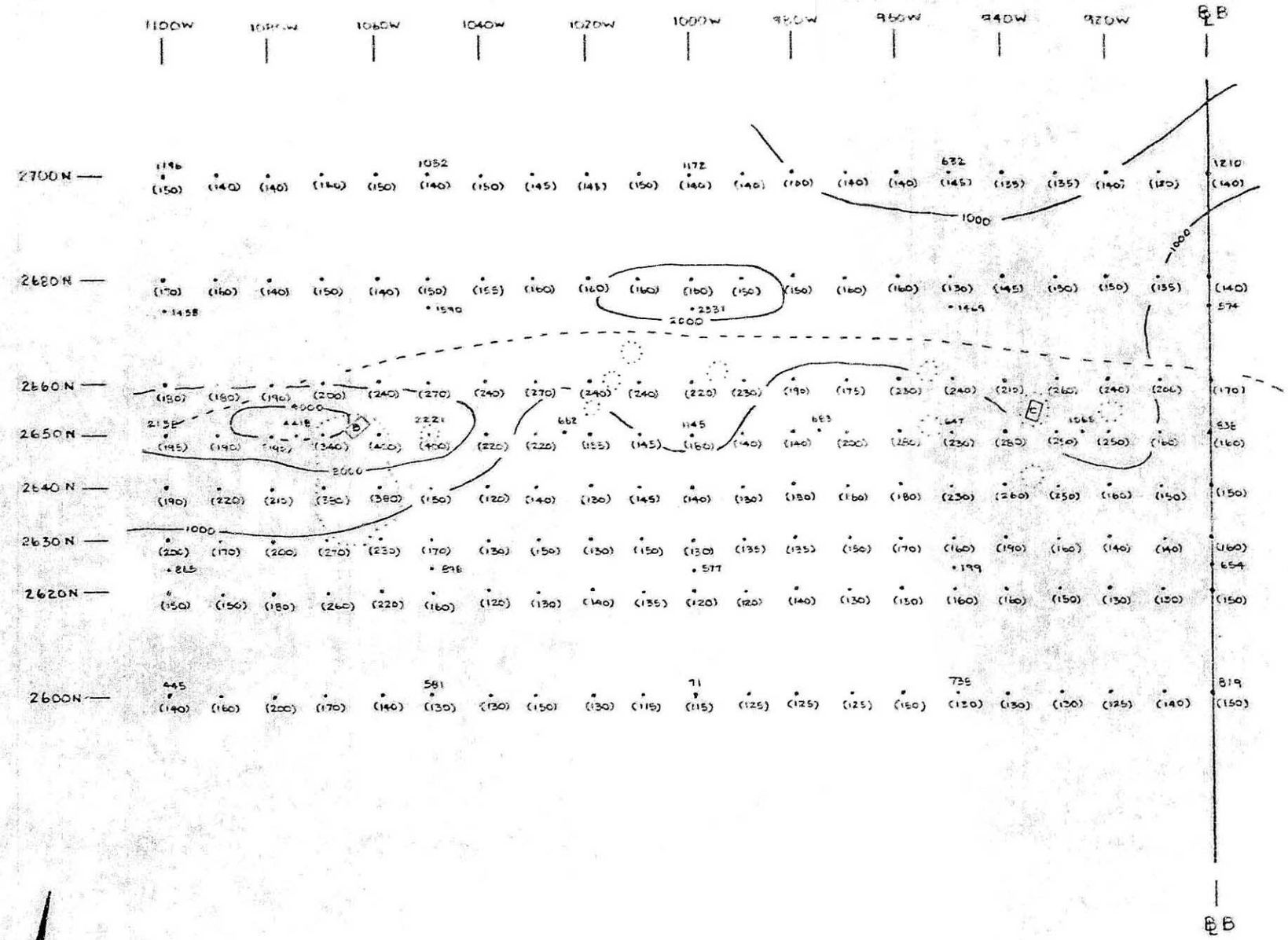
UKON JOINT VENTURE

SCALE

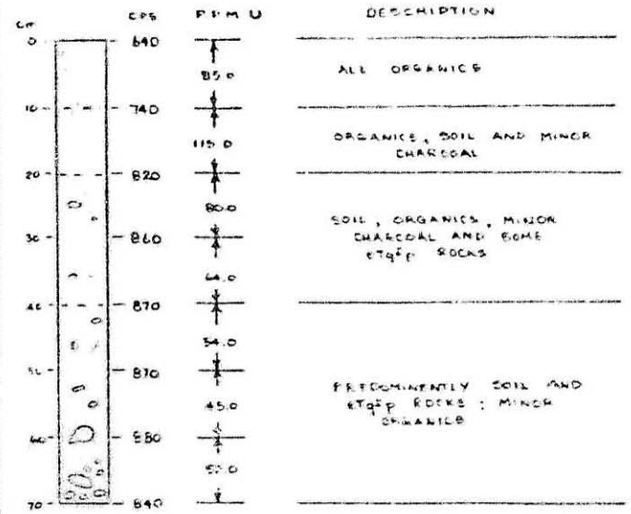
1:1000

20 15 10 5 0 10 20 30 40 50

METERS

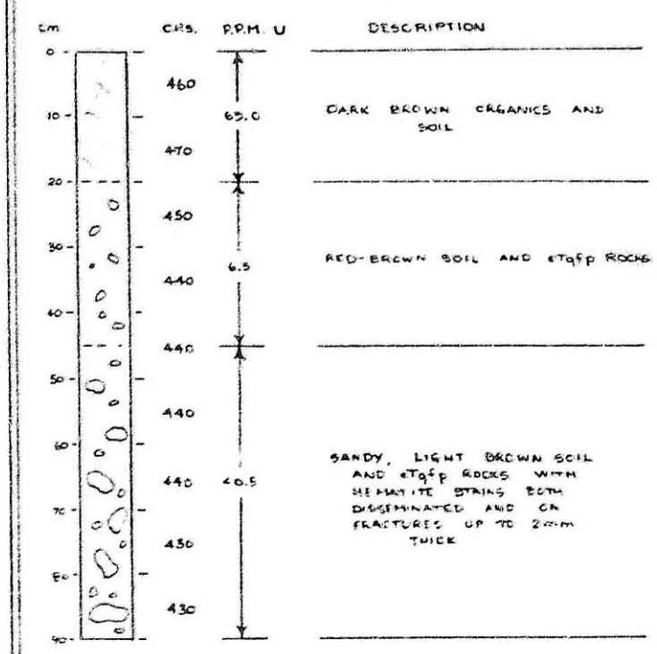


SOIL PROFILE - HAND TRENCH B



PROFILE DONE ON NORTH WALL OF HAND TRENCH WITH SCINTREX EGS-1SL

SOIL PROFILE: HAND TRENCH C



PROFILE DONE ON NORTH WALL OF HAND TRENCH WITH SCINTREX EGS-1SL

LEGEND

- BREAK IN SLOPE
- HAND TRENCH
- 1120 (130) — ALPHA METER READING COUNTS / HOUR; SCINTREX EGS-1SL (43cc CRYSTAL) SCINTILLOMETER READING COUNTS / SECOND
- GREATER THAN 300 CPS ON SCINTILLOMETER
- RADON READING CONTOURS

FIG. U-UN1S

ARCHER CATHRO AND ASSOCIATES

DETAIL RADIOMETRICS: ANOMALY E

SURPRIZE 1-219 CLAIMS

UKON JOINT VENTURE

SCALE

1:1000

20 15 10 5 0 10 20 30 40 50

METERS

A test radon survey produced more or less coincident anomalous response in excess of 1000 cph over a background of 500 cph. The highest radon value (4418 cph) was obtained near Pit B.

Anomaly F

This is an area in Bordeleau Gulch where a 1978 soil sample near the porphyry contact assayed 400 ppm U. Follow-up showed the soil anomaly was from a 5 m square area of organic accumulation near the base of a small outcrop of porphyry. Soil samples from the surrounding area returned only 1.5 ppm U or less and the porphyry outcrop produced a weakly anomalous radiometric response of 200 cps. This anomaly is of some interest however, because water samples from Bordeleau Gulch are strongly anomalous (2.4 ppb U to 21.6 ppb U) below it and only background above it.

Anomaly G

Described with Anomalies A and B earlier in the report.

Anomaly H

This anomaly is different from the others as it occurs within Unit Psn schist at least 1200 m away from the porphyry stock. It is a 100 m by 300 m area of scattered weakly anomalous radiometric readings from 100 to 180 cps over a background of 70 cps as illustrated by Figure U-UN4 on the following page. Although soil samples returned only background uranium values (0.5 ppm U or less) a soil profile from a 1.2 m deep pit returned values up to 12 ppm U. A test radon survey outlined a 50 m by 100 m area with readings in excess of 1000 cph (to a maximum of 2645 cph) over a background of 300 to 400 cph.

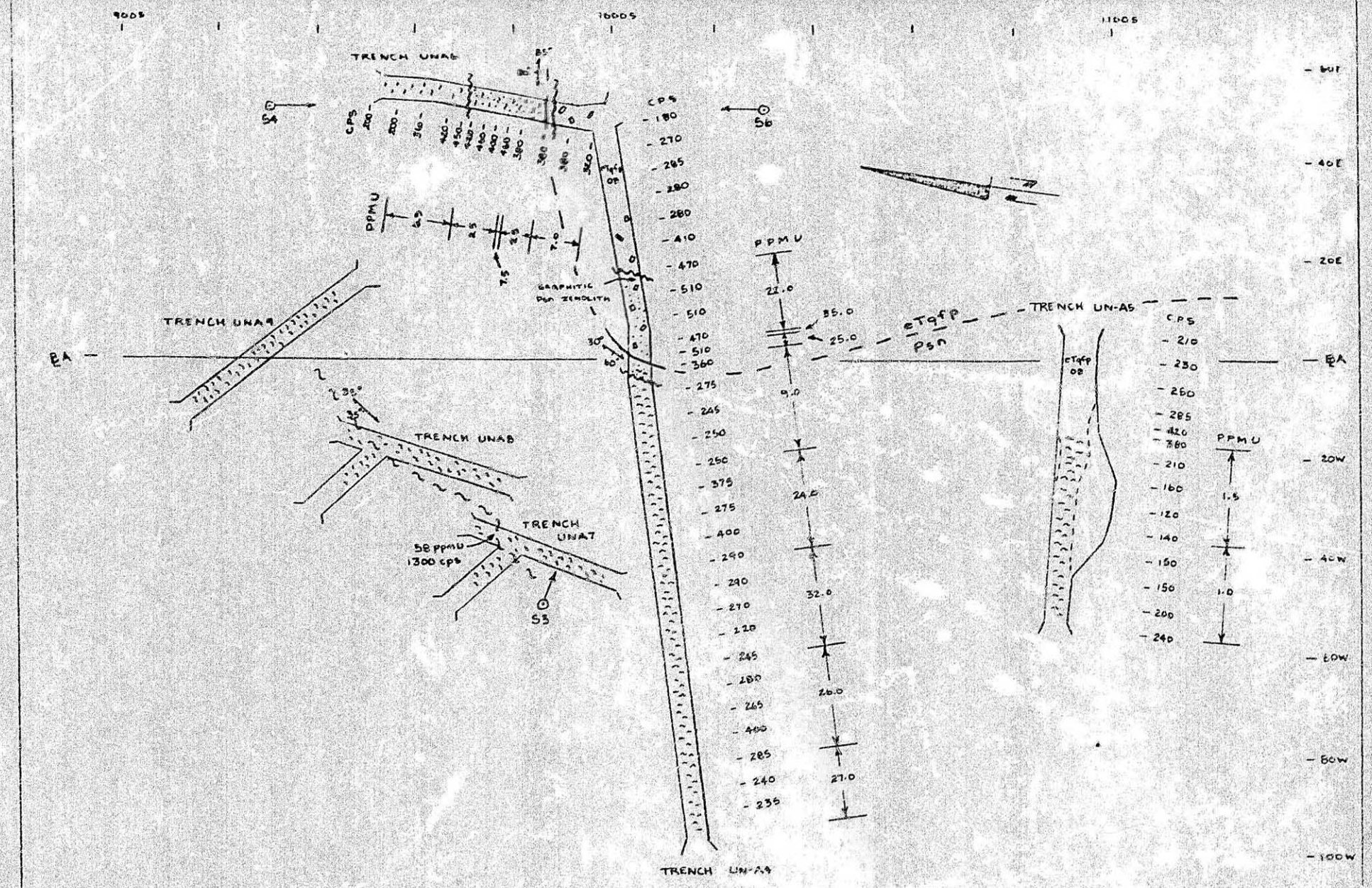
This anomaly appears to be the source of anomalous uranium values in water from nearby Trilby Gulch. Water upstream from Anomaly H exhibits only background values (0.8 ppb U) while water below it returns an anomalous 7.9 ppb U. Two small seeps draining the anomaly returned 43 ppb U and 7.1 ppb U when sampled in early spring. A second water sample from the latter seep taken during the summer returned a weakly anomalous value of 1.5 ppb U.

Other Areas

The most interesting anomaly elsewhere on the claims is a value of 69.0 ppb U obtained from water in Alki Creek just below its entry onto the south side of the Klondike River valley. This point is immediately downstream from the inferred porphyry contact. Water from above the contact returned only background values of 0.5 ppb U or less while water 1.2 km further downstream was still anomalous at 5.2 ppb U.

BULLDOZER TRENCHING

A total of six new trenches (Trenches UNA4 to UNA9) were cut at Anomaly A as illustrated on Figure U-UN15 on the following page. Trenches UNA4 to UNA6 were cut to locate the contact of the porphyry stock prior to drilling while Trenches UNA7 to UNA9 were cut late in the season to explore a zone of anomalous radioactive response intersected at shallow depth in drill hole S3. The contact of the stock was exposed in two trenches and was found to occur as steep dipping faults about 15 m wide composed of altered, highly decomposed country rock (see Photograph 7 following Figure U-UN15). The fault in Trench UNA4 strikes a little east of north while the fault in Trench UNA6, which is only 50 m away, strikes



TRENCH

DRILL HOLE

S3

GEOLOGY

eTqfp : LIGHT GREY TO BUFF, APHANITIC GROUNDMASS WITH GREY TO BLACK, SUBEUHEDRAL TO EUHEDRAL, 1mm TO 3mm QUARTZ PHENOCRYSTS, FELDSPARS TO 2mm AND MINOR BIOTITE TO 1mm; SOME WHOLLY APHANITIC ROCKS NEAR CONTACT, FELDSPARS FREQUENTLY ALTERED TO KAOLINITE.

Psn : PREDOMINENTLY CHLORITE SCHIST, MINOR GRAPHITIC SCHISTS, CARBONACEOUS PHYLLITES AND WOOLY, MILKY QUARTZ LENSES, LIMONITE COMMON ON FRACTURES AND IN PITS. SOME SILICEOUS HORIZONS IN SCHISTS.

FAULT GOUGE : CLAYS AND MICAS AROUND FRAGMENTS OF LESS ALTERED ROCK

FAULT AND SUSPECTED FAULT TRACE

45° 35° FAULT ATTITUDE

FIG. U-UN15

ARCHER, CATHRO AND ASSOCIATES

TRENCHING: ANOMALY A

SURPRIZE 1-219 CLAIMS

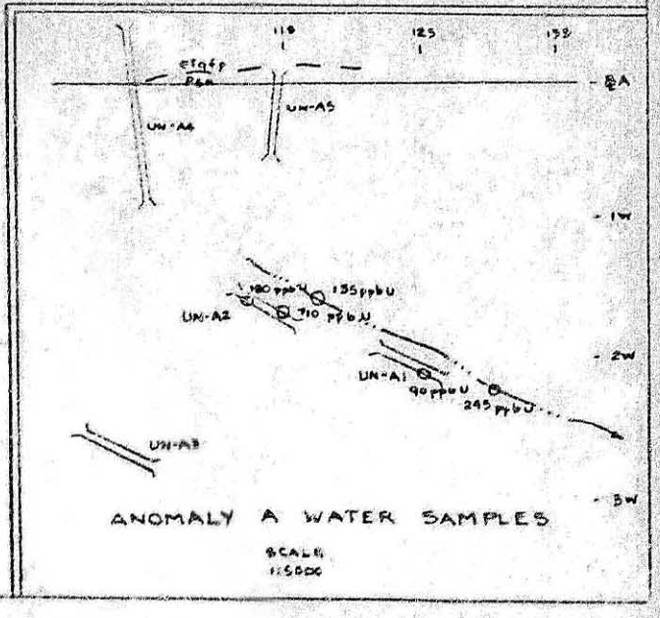
UKON JOINT VENTURE

SCALE

1:1000

50 15 10 5 0 10 20 30 40 50

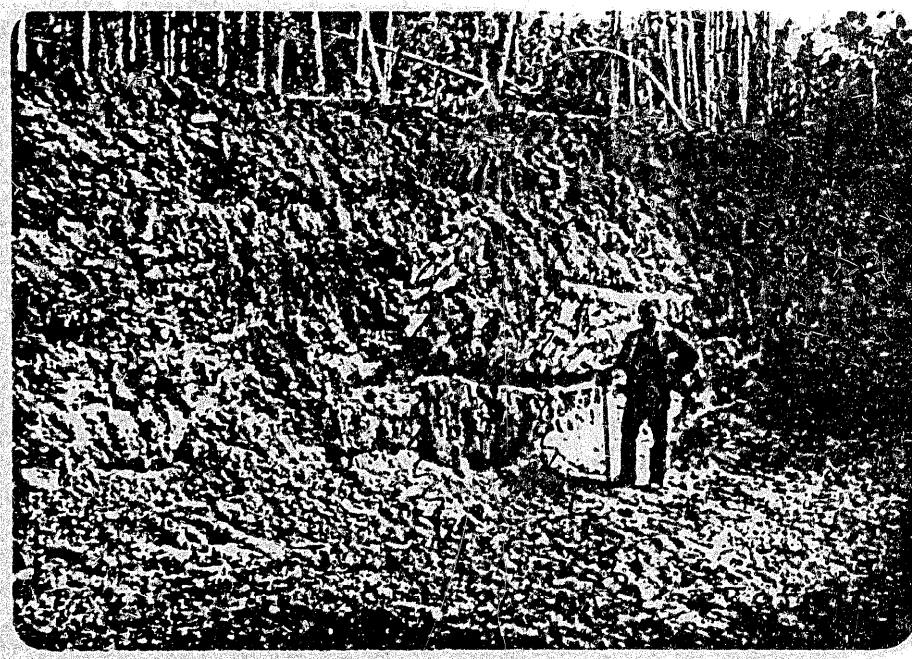
METRES



ANOMALY A WATER SAMPLES

SCALE

1:5000



PHOTOGRAPH 7 - Fault at schist-porphyry contact in Trench UNA4.

almost due east making a connection between the two uncertain. Samples of fault gouge returned 25 ppm U to 35 ppm U which is similar to values obtained from schist exposed in Trench UNA4. Trench UNA7 was cut to explore in the vicinity of a 2.5 times background gamma probe anomaly encountered at a depth of 7.4 m in drill hole S3. A 0.6 m wide northwest striking, shallow dipping (35°NW) quartz filled, limonitic shear exposed in the trench exhibited a radiometric response ranging from 600 to 1300 cps, the highest obtained on the property to date. A specimen from the shear returned a disappointingly low 58 ppm U. Trenches UNA8 and UNA9 were cut on strike but were obscured by snow before they or Trench UNA7 itself could be mapped and sampled in detail.

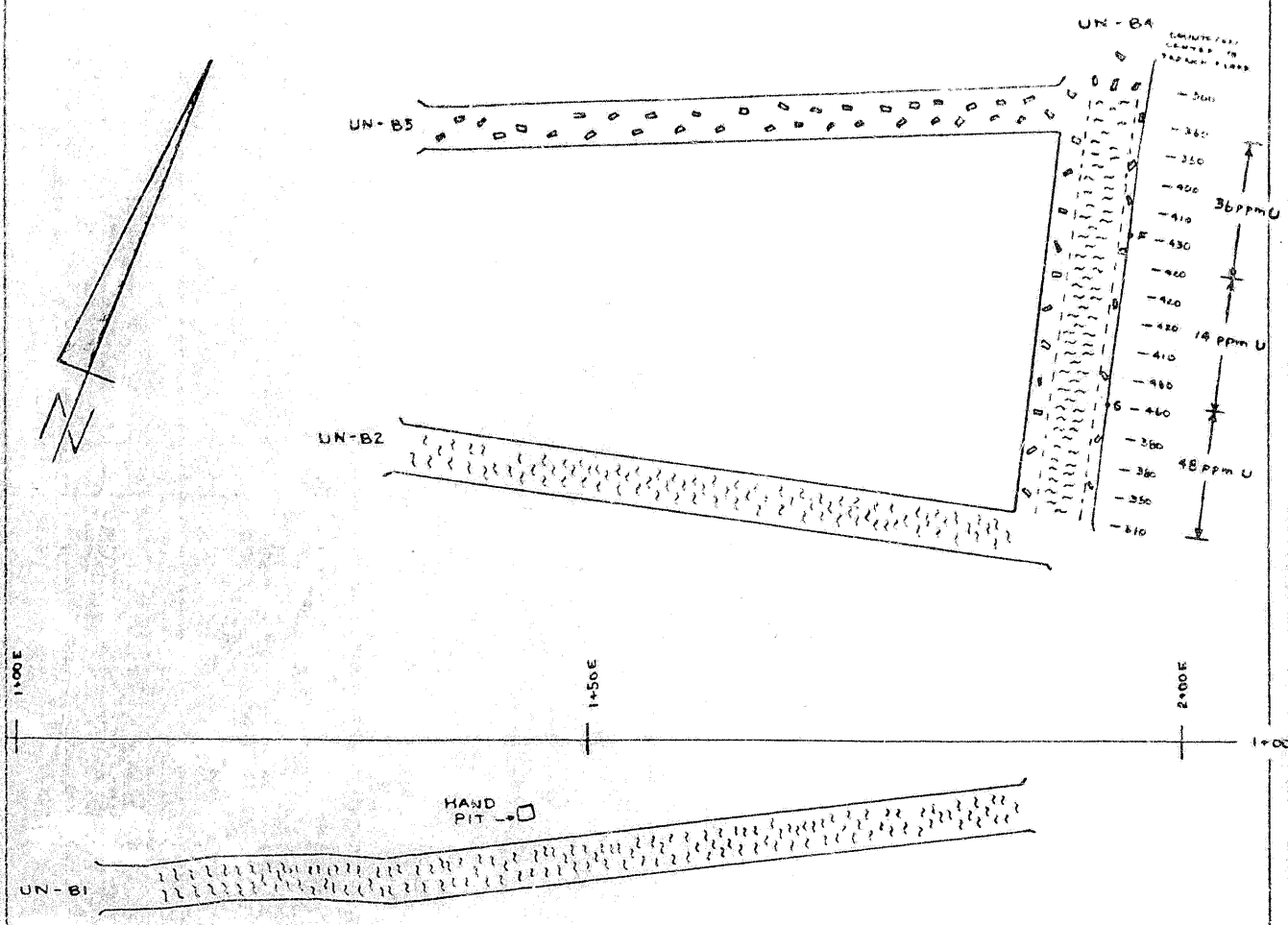
Trench UNB4 was cut at Anomaly B as outlined on Figure U-UN16 on the following page. The purpose of the trench was to locate and determine the attitude of the porphyry contact before drilling began. Unfortunately, the porphyry exposed in 1977 Trench UNB3 was found to be talus up to 3 m thick lying on top of Unit Psn schists and the contact could not be located. Samples of schist lying beneath the talus ranged from 14 ppm U to 48 ppm U.

DIAMOND DRILLING

General

The UJV drill program used Longyear 38 wireline equipment contracted from E. Caron Diamond Drilling Ltd., Whitehorse, Yukon. All holes were drilled using NQ rods and mud circulation. The drill was mobilized to the property on August 22 and was demobilized on September 20 after completing 9 holes for a total of 1349 feet (417 m).

Drilling proved to be unusually difficult and seven of the nine holes had to be abandoned before reaching their target depth. Most of the problems were

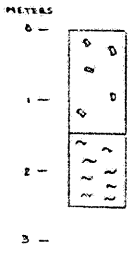


PROFILE "F"

Tqfp : over burden

Highly weathered Pbn : predominently chlorite schist ; minor graphitic schist and vuggy, limonite stained quartz lenses

PROFILE "G"



Tqfp : over burden

Highly weathered Pbn

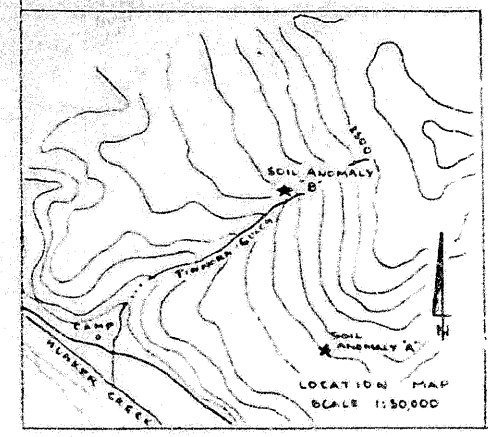


FIGURE U-UN16

ARCHER, CATHRO AND ASSOCIATES

TRENCHING : SOIL ANOMALY "B"

SURPRIZE 1-219 CLAIMS

UKON JOINT VENTURE

SCALE 1:600

caused by heavy flows (or cave) of fine sandy abrasive material from faults in the schist or by loss of circulation in the porphyry stock. Core recovery was only about 75 per cent from the porphyry and less than 20 per cent from the schist. Although faulting was a factor in the reduced recovery from the schist, the main loss is believed to have been caused by small slabs of the narrow (2 to 4 cm) quartz lenses in the schist jamming in front of the bit and then rotating with it. Sludge sampling was instituted when core recovery was found to be poor on the first hole and mechanical problems were being encountered with the Mount Sopris radiometric probe. Samples were collected in 19 litre metal pails, treated with a chemical flocculating agent and allowed to stand for 24 hours before being decanted. Most of the very fine sludge was probably lost in the collection procedure.

The core was logged in British rather than metric units to conform with the lengths of the drill rods used. Detailed drill logs with assays and radiometric logs are enclosed in pocket and the location of drill collars is shown on Figure U-UN10 in pocket. Drill core is stored at the H.S. Bostock core library in Whitehorse.

Assays and Radiometric Logging

Sludge and split core samples were assayed for uranium in parts-per-million (ppm) using a standard fluorometric technique following a total hydrofluoric acid digestion. In addition, core and sludge from Holes S2 to S4 and S9 were analyzed geochemically for gold in parts-per-billion (ppb) and core from Holes S2 and S8 were analyzed geochemically for tin. Radiometric measurements were taken of individual core and sludge samples with a Scintrex BGS-1SL broadband scintillometer and the weight of each sludge sample recorded in pounds.

Drill holes were radiometrically logged using a Model 1000-C Portable Borehole Logger, manufactured by Mount Sopris Instrument Company, Delta, Colorado. The Mount Sopris logger is equipped with a 4.82 cc thallium activated sodium iodide crystal housed in a 3.18 cm diameter probe 1.1 m long that is attached to 305 m of cable. It records total count gamma radiation in counts-per-second (cps) on metric chart paper moving at a speed of 1 cm per metre of hole probe. Available scales range from 0-50 cps to 0-50,000 cps and most of UJV logs were run at a 0-100 cps chart width. The holes were probed at a speed of approximately 1 m per minute. Radiometric charts are shown on the right hand margin of the UJV drill logs which have been given a scale that converts the metric chart directly to hole depth.

A surface calibration was made at the collar of Hole S3, where broken schist gives a ground level background reading of 400 cps with the Scintrex BGS-1SL (43 cc crystal) scintillometer and the rock fragments geochemically assay 25 ppm U. The buried Mount Sopris probe returned a count of 65 cps unshielded; 52 cps (or 20 per cent lower) inside either NQ drill rod or NW casing; and, 40 cps (an additional 20 per cent lower) inside NQ drill rod plus NW casing. All holes were probed either through drill rod or casing and drill rod combined.

Results

Figures U-UN17 to U-UN25 on the following pages graphically illustrate the geology and uranium assays in section for each hole. Copies are also attached to the front page of each drill log in pocket. A summary of the purpose and results for each hole follows.

Hole S1 - drilled beneath Trench UNB1 at Anomaly B to locate the schist-porphyry contact. The porphyry was intersected at 87 feet (26.5 m) and the hole was continued in porphyry to its final depth of 178 feet (54.3 m). The best core assays were 16 ppm U from 50 feet (15.2 m) to 60 feet (18.3 m), just above the first pyrite noted in the hole, and 14 ppm U from 90 feet (27.4 m) to 94 feet (28.7 m). No sludge was taken and the hole was only radiometrically logged to 47 feet (14.3 m) because of a malfunction in the probe header. The porphyry at the bottom of the hole still exhibited weak leaching.

Hole S2 - drilled vertically at the same site as Hole S1 to check the dip of the porphyry contact. Porphyry was intersected from 89 feet (27.1 m) to the final depth of 116 feet (34.5 m) indicating a flat dip. The first trace of pyrite was seen at 70 feet (21.3 m) and the core was still strongly leached at the bottom of the hole. The best uranium assays were 14.0 ppm U in sludge from the schist-porphyry contact and 9.0 ppm U from altered porphyry at 105 feet (32.0 m). The hole was not probed.

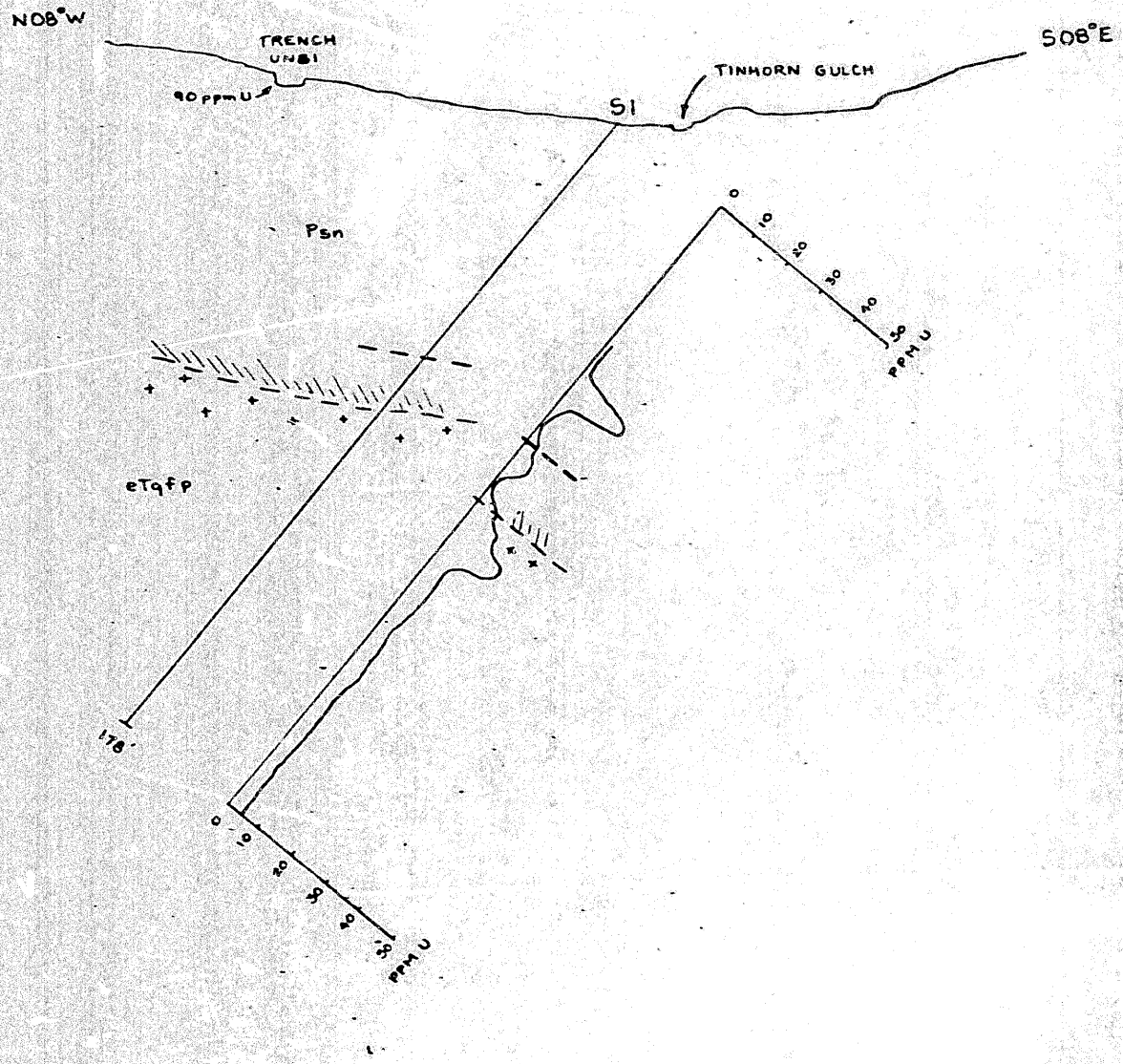
Gold and tin core assays from 0-75 feet (22.9 m) returned low values of 5 ppb Au or less and 1 to 4 ppm Sn. Sludge samples from the same interval were slightly more anomalous in gold with values up to 40 ppb near surface, 45 ppb at 50 feet (15.2 m) and 60 ppb at 85 feet (25.9 m).

Hole S3 - drilled at Anomaly A to examine the fault contact between schist and porphyry exposed in bulldozer Trench UNA4. The hole was abandoned due to caving at 160 feet (48.8 m) and several fragments of porphyry recovered at this footage suggest the target may have just been reached. The hole was totally leached to 106 feet (32.3 m) and strongly leached below. Core assays ranged from 3.0 ppm U to a high of 30 ppm at 106 feet where the first pyrite was seen. Sludge assays


KLONDIKE RIVER
KLONDIKE HIGHWAY
Dawson Airfield
AUSTRALIAN HILL
DAWSON ← 19.3 km.
DAGO HILL
PREIDO HILL
HUNKER CREEK
HUNKER CREEK ROAD
Henry Gulch
Last Chance Creek
Eighty Pup
Catchup Gulch
Unexpected
Preido Gulch
Bordeleau
Tinhorn Gulch
Hester Creek
Germaine Creek
Goring Creek
Alki Creek
Trilby G
Pup
CAMP (km 7.6)
glacial and fluvial till
glacial till
inferred extent of eTqfp
LINDSEY
GRACE
ANOMALY A
ANOMALY B
ANOMALY C
ANOMALY D
ANOMALY E
ANOMALY F
ANOMALY G
ANOMALY H
UNEXPECTED FLUORITE OCCURRENCE
FIG. U-UN 10
FIG. U-UN 11
FIG. U-UN 12
FIG. U-UN 13
SURPRIZE 1-219 CLAIMS
Powerline
64°00'
139°00'
LOCATION MAP
SCALE 1:2,000,000
DAWSON
FIG. U-UN 9
YUKON
ALASKA
Indian R
Mayo
LEGEND
EARLY TERTIARY
eTqfp
QUARTZ FELDSPAR PORPHYRY
PALEOZOIC (?)
Psn
SCHIST-GNEISS UNIT: predominantly chlorite-quartz schists locally grading into graphitic schists; minor quartzite and marble
geological contact; approximate and inferred
radiometric / geochemical anomaly
claim boundary
road
geochemical analysis in ppm U
geochemical sample site and/or radiometric survey station
radiometric reading with Scintrex BGS-1SL (43cc crystal) scintillometer at waist height
water sample site and geochemical analysis in ppb U
stream sediment sample location and geochemical analysis in ppm U
rock sample site and geochemical analyses in ppm U
3 oF
4 oF 4
FIG. U-UN 9
ARCHER, CATHRO & ASSOCIATES LTD
GEOLOGY, GEOCHEMISTRY AND RADIOMETRICS
SURPRIZE 1-219 CLAIMS
UKON JOINT VENTURE
SCALE 1:10,000
Metres 200 100 0 100 200 400 600 800 1000 Metres
A. R. ARCHER
GEOLOGICAL ENGINEER
Association of Professional Engineers of the Yukon Territory
To accompany report dated
Feb/79 by A.R. Archer

SECTION HOLE S1

Collared at 56N, 178E; Azimuth: 050°, Dip: -50°;
Depth: 178' (40.3m); Depth of casing: 40' (12.2m)



core assay in ppm U

sludge assay in ppm U

first visible pyrite

Fig. UN-17

ARCHER, CATHRO & ASSOCIATES LTD

SECTION DRILL HOLE S1

SURPRIZE 1-219 CLAIMS

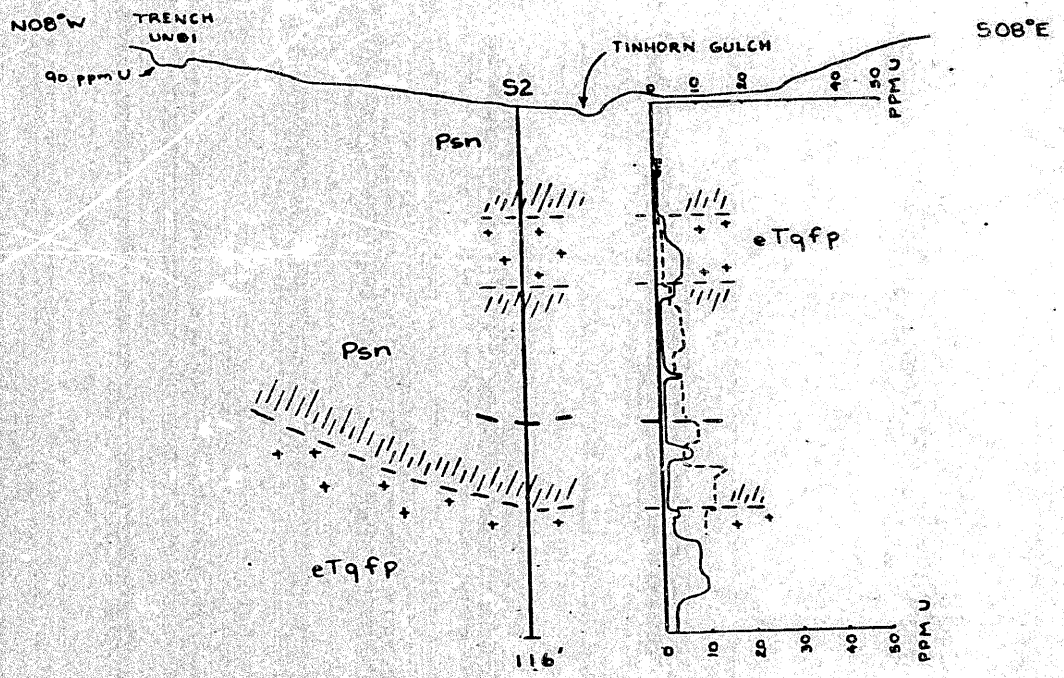
UKON JOINT VENTURE

SCALE 1:480 (1" = 40')

20 10 0 20 40 60 Feet

SECTION HOLE S2

Collared at 55N, 178E; Azimuth: vertical, Dip: -90°;
Depth: 116' (36.1m); Depth of casing 28' (8.5m).



core assay in ppm U

sludge assay in ppm U

first visible pyrite

Fig. UN-18

ARCHER, CATHRO & ASSOCIATES LTD

SECTION DRILL HOLE S2

SURPRIZE 1-219 CLAIMS

UKON JOINT VENTURE

SCALE 1:480 (1" = 40')

20 0 20 40 60 Feet

SECTION HOLE S3

Collared at 988S, 52W; Azimuth: 104°,Dip: -50°;
Depth: 160' (48.5m); Depth of casing: 40' (12.2m).

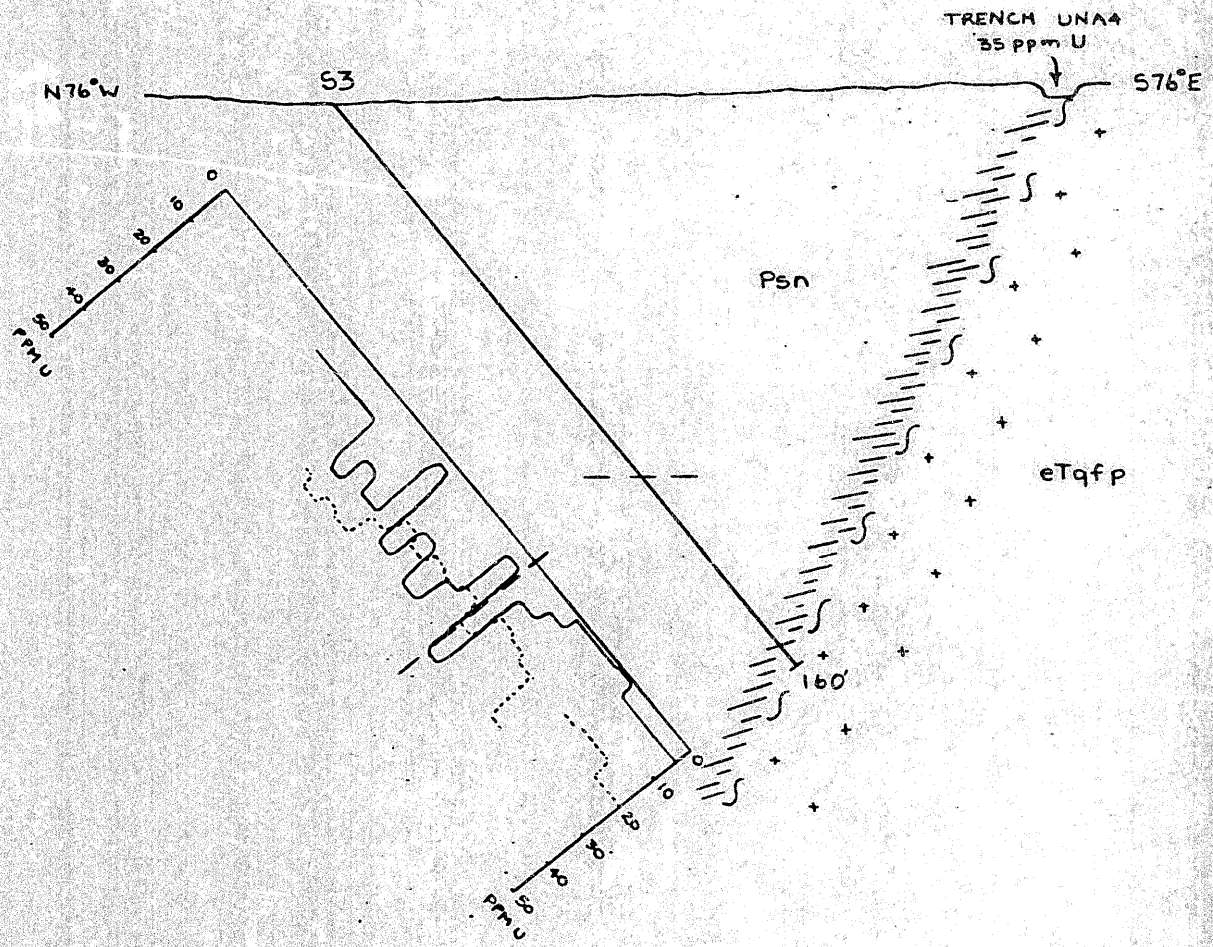


Fig. UN-19

ARCHER, CATHRO & ASSOCIATES LTD

SECTION DRILL HOLE S3

SURPRIZE 1-219 CLAIMS

UKON JOINT VENTURE

SCALE 1:480 (1" = 40')

20 40 0 20 40 60 Feet

core assay in ppm U

sludge assay in ppm U

first visible pyrite

were anomalous throughout the hole ranging from a low of 14 ppm U to a high of 29 ppm U. The hole could only be radiometrically logged to 140 feet (42.7 m) because of cave. A 137/60 cps anomaly was obtained at 24 feet (7.3 m) where no core or sludge was recovered and a weak 96/60 cps anomaly was found at 116 feet (35.4 m) which is about 10 feet (3.0 m) below the best core assay at the pyrite line.

Gold assays were 5 ppb Au or less in the sludge and core except for four core samples through the interval of 90 feet (27.4 m) to 110 feet (33.5 m) which returned between 5 ppb and 60 ppb Au.

Hole S4 - drilled to cut through a linear radon anomaly and to intersect the schist-porphyry fault contact below the level of surface oxidation. The hole was abandoned in heavy cave at 311 feet (94.8 m), close to the projected location of the contact. Core was totally oxidized to 97 feet (29.5 m) and partially oxidized to 250 feet (76.2 m) which is 175 feet (52.4 m) vertically below surface. The best assays were returned from 70 feet (21.3 m) to the pyrite line at 97 feet (29.5 m) where core samples ranged from 4.0 to 44 ppm U (averaging 33 ppm U) and sludge assays ranged from 56 ppm to 77 ppm U. Sludge assays are fairly high for the remainder of the hole, probably due to contamination from cave at 80 feet (24.4 m). Several erratic high core assays were obtained below 97 feet (29.6 m) including 23 ppm U at 135 feet (41.2 m), 50 ppm U at 181 feet (55.2 m), 20 ppm U at 185 feet (56.4 m), 31 ppm U at 245 feet (74.7 m) and 24 ppm U at 258 feet (78.6 m).

Radiometric logging could only be completed to 121 feet (36.9 m) because of cave filling the inside of the rod. A strong anomaly of 160/60 cps was obtained from 82 feet (25.0 m) to 102 feet (31.1 m) with a spike of 275 cps (equivalent to about 2100 cps on the Scintrex BGS-1SL scintillometer) at 84 feet (25.6 m) where core logging indicates a possible fault.

SECTION HOLE S4

Collared at 930S, 48E; Azimuth: 172°, Dip: -50°;
Depth: 311' (94.2m); Depth of casing: 38' (11.6m).

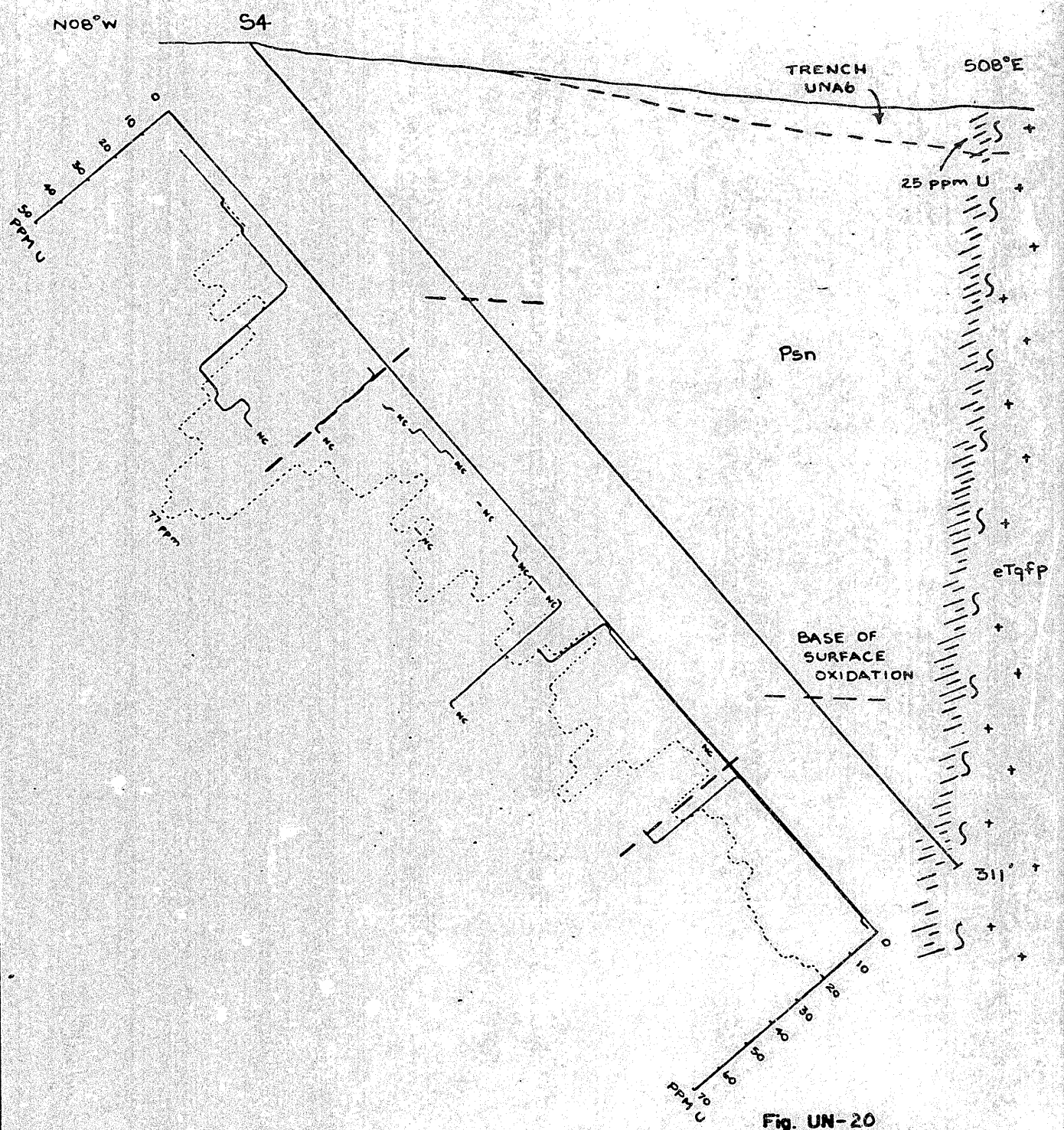


Fig. UN-20

ARCHER, CATHRO & ASSOCIATES LTD

SECTION DRILL HOLE S4

SURPRIZE 1-219 CLAIMS

UKON JOINT VENTURE

SCALE 1:480 (1" = 40')

20 0 20 40 60 Feet

NC — no core recovered

———— core assay in ppm U

. . . . . sludge assay in ppm U

— — — — first visible pyrite

Gold assays were obtained in core and sludge from surface to 180 feet (54.9 m). The best values in sludge were 15 ppb Au at 55 feet (16.8 m) and in core, 15 ppb U at 95 feet (29.0 m) and 35 ppb U at 173 feet (52.7 m).

Hole S5 - drilled on the same section as Hole S3 to cut the schist-porphyry contact well below the level of surface oxidation. The hole was abandoned due to heavy cave at 227 feet (69.2 m) far short of the target. Oxidation was complete to 105 feet (32.0 m) and was still weakly present at the bottom of the hole. Both core and sludge returned only background values of 1 ppm U or less below the pyrite line. Above, the core was weakly anomalous (1 ppm to 14 ppm U) except for a single strongly anomalous value of 48 ppm U at 61 feet (18.6 m) and the sludge was strongly anomalous at 36 ppm to 58 ppm U from 40 feet (12.2 m) to 70 feet (21.3 m).

The radiometric log returned erratic anomalous response in the 60/20 cps range from surface to the pyrite line at 105 feet (32.0 m) with a spike to 120 cps at 42 feet (12.8 m). Three weak spikes were obtained below the pyrite line, 50/20 cps at 142 feet (43.3 m) and 203 feet (61.9 m) and 86/20 cps at 220 feet (67.1 m).

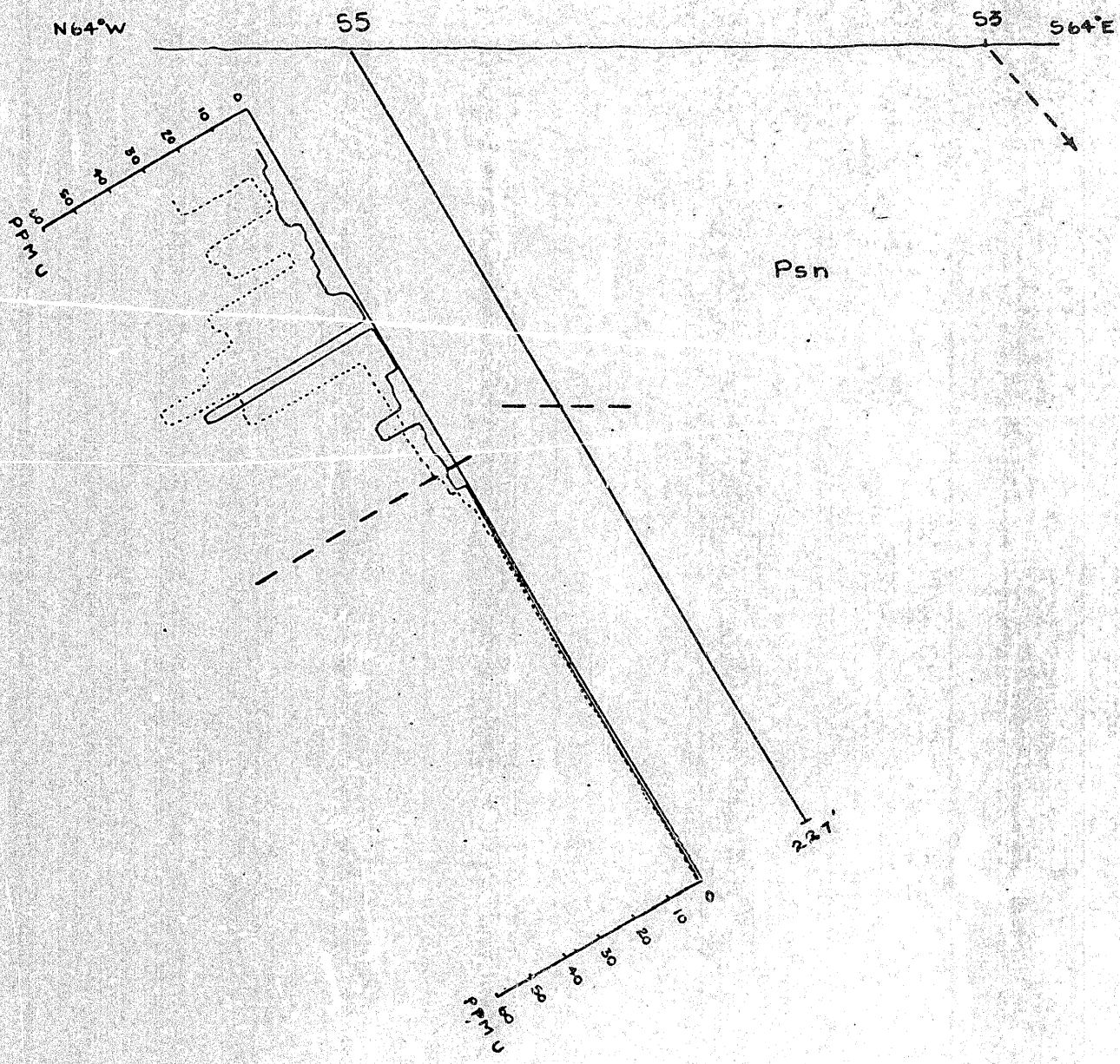
Minor purple fluorite was found in a quartz filled vug in core at the end of the hole.

Hole S6 - drilled north from the same set up as Hole S5 to explore below the highest radon value (12,531 cph) obtained at Anomaly A. The hole was abandoned because of cave at 120 feet (36.6 m) well before the target was reached. First pyrite was seen at 93 feet (28.3 m). Sludge and core assays are similar to Hole S5 being erratically anomalous above the pyrite line and background below it. The highest sludge value is 53 ppm U at 40 feet (12.2 m) and the highest core value 25 ppm U at 70 feet (21.3 m).

The Mount Sopris log shows an anomalous background of some 60/25 cps above

SECTION HOLE S5

Collared at 950S, 86W; Azimuth: 116°, Dip: -60°;
Depth: 227' (68.8m); Depth of casing: 78' (23.8m).

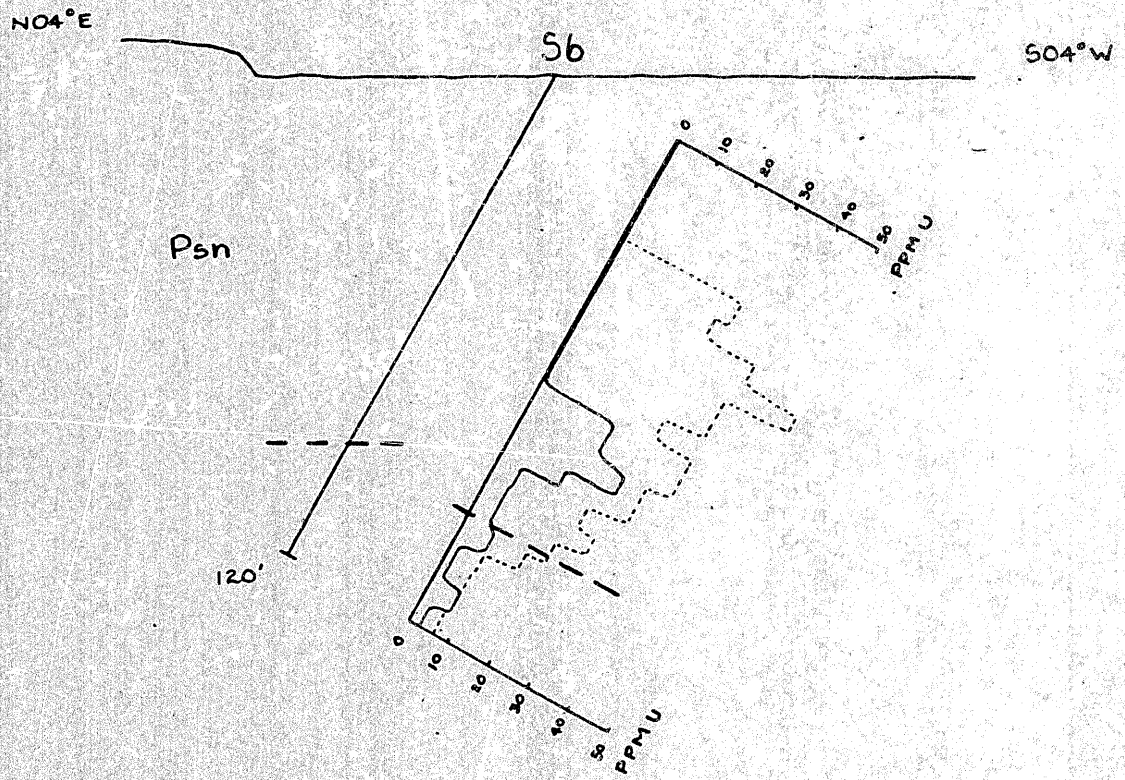


core assay in ppm U
sludge assay in ppm U
first visible pyrite

Fig. UN-21
ARCHER, CATHRO & ASSOCIATES LTD
SECTION DRILL HOLE S5
SURPRIZE 1-219 CLAIMS
UKON JOINT VENTURE
SCALE 1:480 (1" = 40')
20 0 20 40 60 Feet

SECTION HOLE S6

Collared at 948S, 86W; Azimuth: 004°, Dip: -60°;
Depth: 120' (36.4m); Depth of casing: 42' (12.8m).



core assay in ppm U

sludge assay in ppm U

first visible pyrite

Fig. UN-22

ARCHER, CATHRO & ASSOCIATES LTD

SECTION DRILL HOLE S6

SURPRIZE 1-219 CLAIMS

UKON JOINT VENTURE

SCALE (1480 ft = 40")

20 10 0 20 40 60 Feet

the pyrite line with spikes of 122/60 cps at 25 feet (7.6 m); 100/60 cps at 42 feet (12.8 m) and 58 feet (17.7 m); and 110/60 cps at 65 feet (19.8 m).

Hole S7 - was drilled to explore beneath the highest value (6262 cph) in a linear radon anomaly that extends south of Anomaly A. The hole cut porphyry for its entire length with first pyrite seen at 93 feet (28.3 m). The hole was abandoned at 133 feet (40.5 m) because of poor circulation. Core and sludge assays range from background values of 1.5 ppm U to 7 ppm U except for one weakly anomalous value of 14 ppm U from sludge at 45 feet (13.7 m).

The Mount Sopris log shows an even background of 80 to 90 cps except for the cased portion from 0 to 40 feet (12.2 m) which is some 30 per cent lower at 50 cps as expected.

Hole S8 - drilled toward the schist-porphyry fault contact (from the porphyry side) on the same section as Hole S4. The hole was abandoned at 95 feet (29.0 m) because of lost circulation. Sludge and core returned background values of 3.0 ppm U to 6.0 ppm U. Core assays for tin returned weakly anomalous values ranging from 3 ppm to 10 ppm Sn.

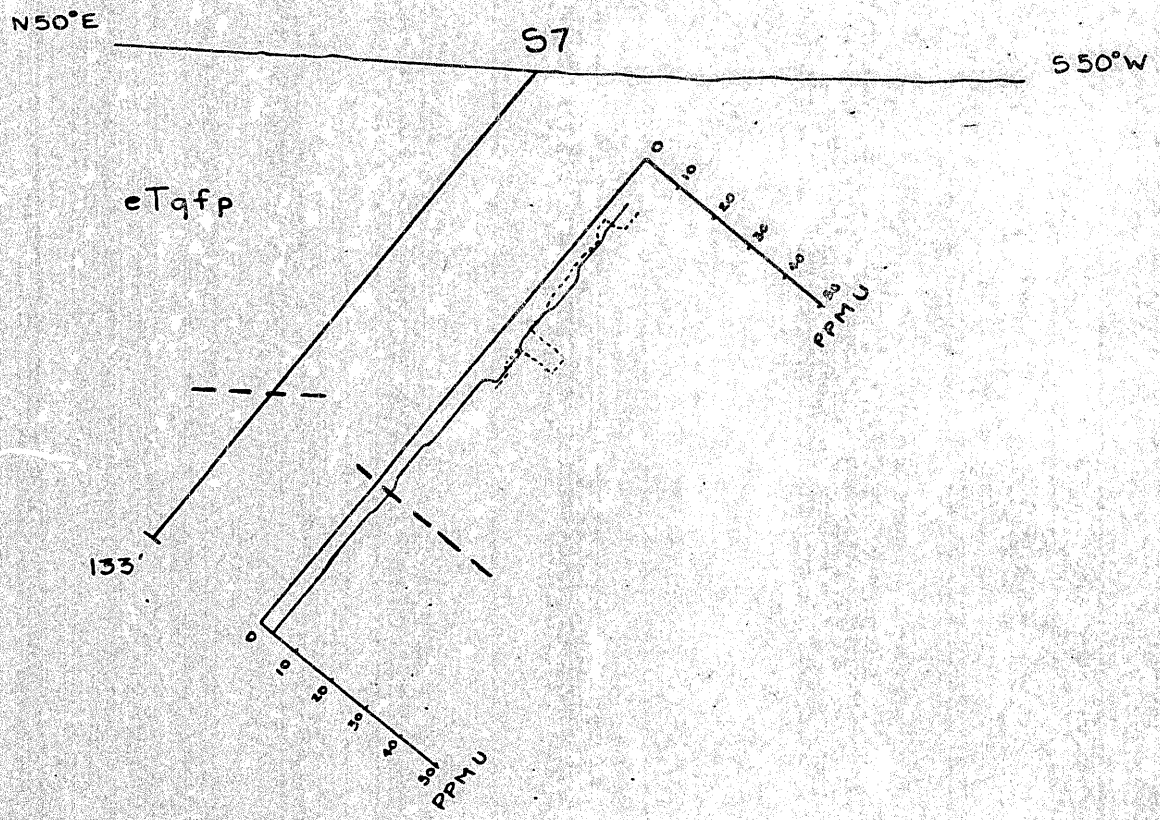
The Mount Sopris log shows an even background of 50 cps through the cased portion and 65 cps below.

Hole S9 - drilled vertically to explore to the base of the schist roof pendant downhill from Holes S1 and S2 at Anomaly B. The hole was abandoned in schist at 107 feet (32.6 m) when the core barrel stuck in the hole. Core and sludge assays returned weakly anomalous values up to 15 ppm U from surface to the pyrite line at 77 feet (23.5 m). Gold assays from core returned less than the detection limit of 5 ppb Au.

The Mount Sopris log shows a few spikes up to 80 cps over a background of around 50 cps.

SECTION HOLE S 7

Collared at 1425S, 5E; Azimuth: 050°, Dip: -55°;
Depth: 133' (40.3m); Depth of casing: 40' (12.2m).

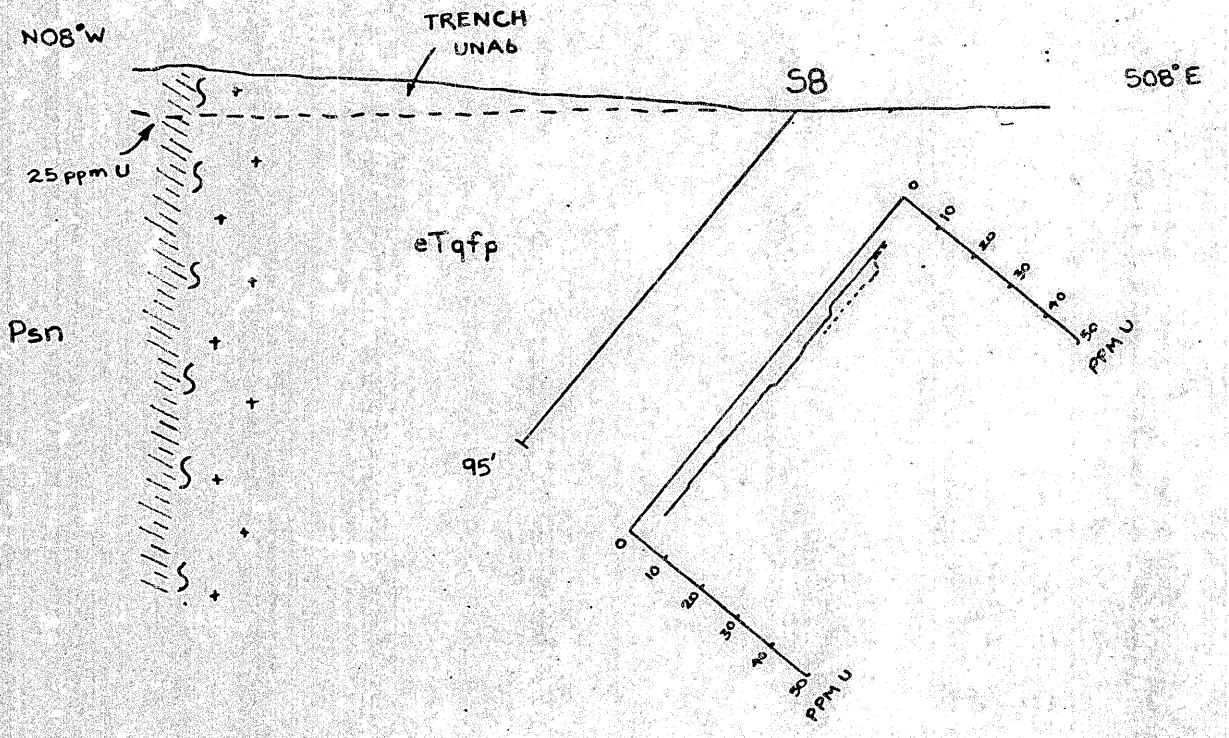


core assay in ppm U
sludge assay in ppm U
first visible pyrite

Fig. UN-23
ARCHER, CATHRO & ASSOCIATES LTD
SECTION DRILL HOLE S7
SURPRIZE 1-219 CLAIMS
UKON JOINT VENTURE
SCALE 1:480 (1" = 40')
20 10 0 20 40 60 Feet

SECTION HOLE S8

Collared at 1030S, 50E; Azimuth: 352°, Dip: -50°;
Depth: 95' (25.8m); Depth of casing: 50' (15.2m) NW, 90' (27.4m) BW



core assay in ppm U

sludge assay in ppm U

first visible pyrite

Fig. UN-24

ARCHER, CATHRO & ASSOCIATES LTD

SECTION DRILL HOLE S8

SURPRIZE I-219 CLAIMS

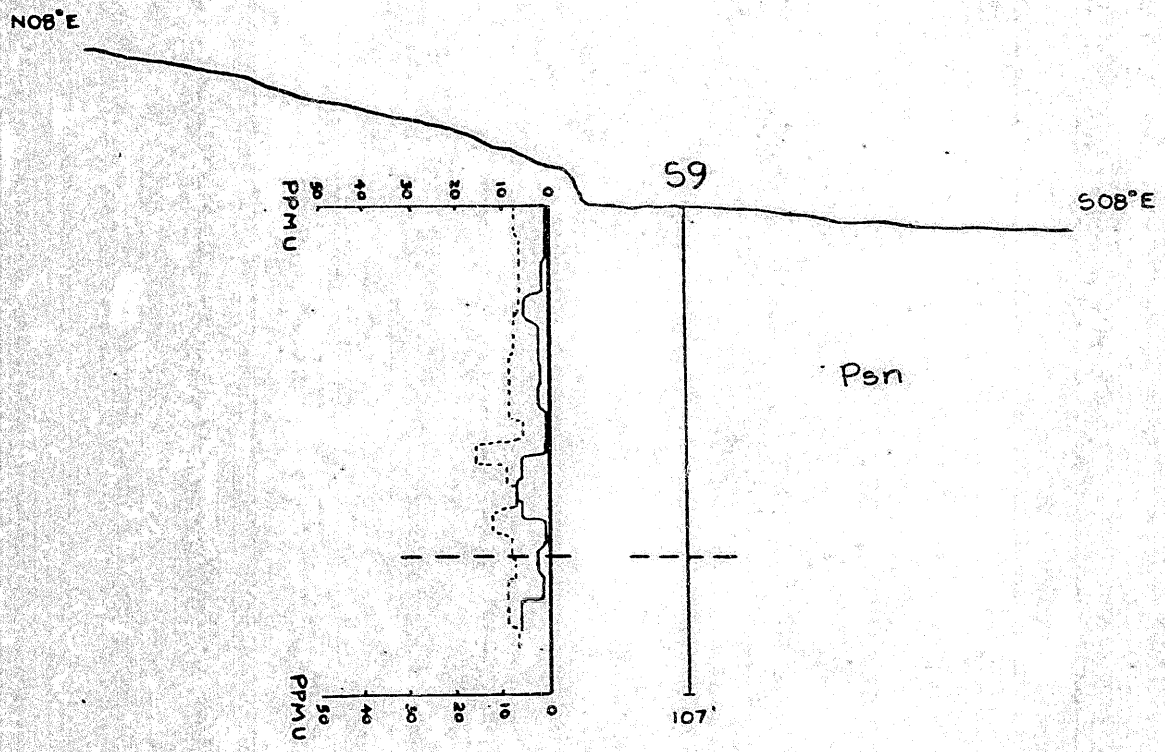
UKON JOINT VENTURE

SCALE 1:480 (1" = 40')

20 0 0 20 40 60 Feet

SECTION HOLE S9

Collared at 00S, 00E; Azimuth: vertical, Dip: -90°;
Depth: 107' (32.4m); Depth of casing: 14' (4.3m).



core assay in ppm U
sludge assay in ppm U
first visible pyrite

Fig. UN-25
ARCHER, CATHRO & ASSOCIATES LTD
SECTION DRILL HOLE S9
SURPRIZE I-219 CLAIMS
UKON JOINT VENTURE
SCALE 1:480 (1" = 40')
20 0 20 40 60 Feet

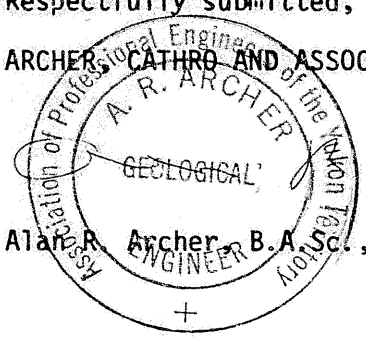
SUMMARY, CONCLUSION AND RECOMMENDATIONS

Surface exploration has outlined eight areas of anomalous radioactivity and geochemistry called Anomalies A to H. All eight anomalies occur on south or southwest facing slopes and all but one have been found either at the contact of quartz-feldspar porphyry with Unit Psn schists or within the porphyry itself. Radon surveys at Anomalies A, B and G have outlined coincident anomalies and suggest a relationship to faulting. Drilling has shown that uranium is accumulating in geochemically anomalous quantities at the interface between total and partial surface oxidation which lies approximately 80 feet (24 m) below surface and is defined as the point at which the first trace of pyrite is seen in core. Drilling has also shown that uranium values extend below the level of surface oxidation in the vicinity of a fault with accompanying anomalous radon response lying uphill from Anomaly A. Four holes attempted to intersect this fault at depth without success.

Further work should be directed toward determining if specific areas of interest exist in the stock or if uranium is accumulating in the ground water channelways leading from the stock. Radon surveys appear to be the best preliminary exploration method and should be continued over most of the southfacing portion of the stock. The best targets located should then be tested by drilling.

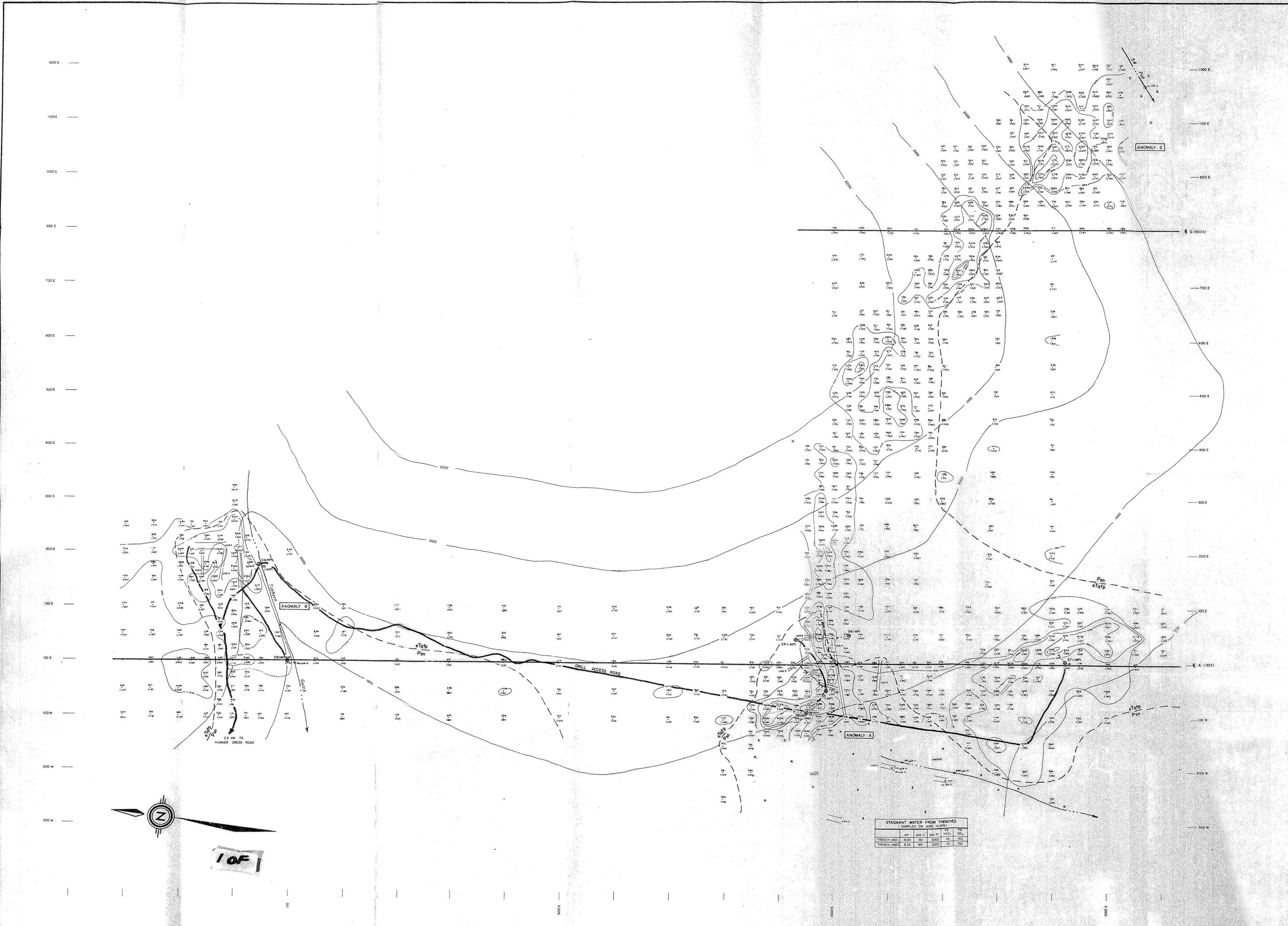
Respectfully submitted,

ARCHER, CATHRO AND ASSOCIATES LTD.

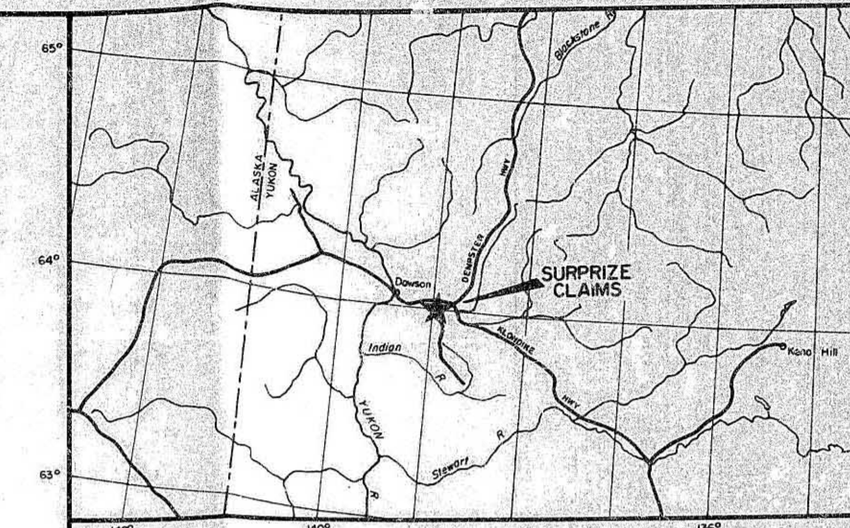


ARA/mc

Alan R. Archer, B.A.Sc., P.Eng.



STAGNANT WATER FROM TRENCHES (SAMPLED ON JUNE 15,1978)					
	pH	ppb U	ppb Fl	mg HCO_3	mg SO_4
TRENCH UNA1	8.00	90	2000	49	140
TRENCH UNA2	8.22	185	2000	76	150



LOCATION MAP
SCALE 1:2,000,000
20 0 20 40 60 80 100 Miles
20 10 0 20 40 60 80 100 Kilometres

LEGEND

EARLY TERTIARY

eTqfp — quartz-feldspar porphyry

PALEOZOIC (?)

Psn — schist-gneiss unit

fault

approximate geological contact

S1 (-50°) drill hole, number and orientation

UNA 5 trench

435 (100) — radon gas counts/hr with alphaMeter; alphaMeter station; radioactivity in counts/second with BGS-1SL (43 cc crystal) scintillometer at ground level

radon gas survey contour line

— 2000 — topographic contour line

swamp

46 ppb U water sample in ppb U

Association of Professional Engineers of the Yukon Territory
A. R. ARCHER
GEOLOGICAL
ENGINEER

FIG. U-UNIO

ARCHER, CATHRO & ASSOCIATES LTD

GEOLOGY, RADIOMETRICS, RADON, TRENCHES, DRILL HOLES

DETAIL ZONES A, B, G
SURPRIZE 1-219 CLAIMS
UKON JOINT VENTURE

SCALE 1:2000
50 40 30 20 10 0 50 100 150 200
METRES

To accompany report dated Feb/79
by A. R. Archer

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S1 PAGE 2 OF 3

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au	HOLE DEPTH ft	DESCRIPTION
						12521	20	72/72	4.0			0.8 FT QUARTZ & QUARTZ CHLORITE SCHIST
											78	
80						12522	11	72/72	0.5		80	0.2 FT WHITE QUARTZ 0.6 FT. WHITE QUAITZ-INCLUSIONS BLEACHED AND ALTERED
85						12523	20	78/72	4.5		85	0.1 FT. WHITE QUARTZ 0.9 FT. PORPHYRY
90											90	WEAK PERVASIVE AND FRACTURE ALTERATION
						12524	90	78/70	7.5		92	
											93	STRONG ALTERATION
95											95	WEAK PERVASIVE AND FRACTURE ALTERATION
						12539	100	80/70	14			FIRST CHLORITE OBSERVED
100											100	CHILLED CONTACT?
105						11435	100	80/80	4.5		105	
110											110	
115						11436	100	85/80	4.5		115	
120											120	
125						11437	100	85/80	3.5		123	INTENSITY OF LIMONITE ON FRACTURES AND ARCILLIC ALTERATION WEAKENS
130											125	
											130	
135						11438	100	80/80	4.0		134	KNIFELIKE FRACTURE WITH STRONG SPECULARITE, MODERATE PYRITE AND TRACE MALACHITE
											135	
140											140	
											141	TRANSITION FROM PALE TO DARK GREEN CHLORITIZED MAFICS
145						11439	100	90/80	4.0		145	DULL BROWN LIMONITE - GOETHITE - OXIDIZED SPECULARITE AND PYRITE?
150												

CHLORITE SCHIST

SEE PAGE 1 FOR DESCRIPTION

CONTACT LOST

QUARTZ FELDSPAR PORPHYRY

cTqfp

LIGHT GRAY COLORED SMOKY QUARTZ AND FELDSPAR, MEDIUM GRAINED PHENOCRYSTS IN AN APHANITIC - MICROCRYSTALLINE MATRIX. FRACTURES WITH DENSITY 1-3/FT COATED WITH MANGANESE

LIGHT GREENISH GRAY, SMOKY QUARTZ (10-15%) AND FELDSPAR (15-20%) AND CHLORITIZED BIOTITE-HORNBLENDE (3-5%) MEDIUM GRAINED PHENOCRYSTS IN A MICROCRYSTALLINE, FINE BLACK (MAFIC) SPECKLED MATRIX. FRACTURES WITH DENSITY 1-2 UP TO 4/FT EXHIBIT WEAK ARCILLIC ALTERATION WITH MODERATE COATING OF MANGANESE AND GOETHITE (OXIDIZED SPECULARITE AND PYRITE). TRACES OF PYRITE AND HEMATITE ASSOCIATED WITH CHLORITIZED MAFICS.

SLUDGES NOT COLLECTED

MOUNT SOPRIS GAMMA PROBE LOG

FOOTAGE: 80, 85, 90, 95, 100, 105, 110, 115, 120, 125, 130, 135, 140, 145

PROBE MALFUNCTION

* - CPS - 100/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 c. CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE COLLARED AT 55 N, 178 E

DESCRIPTION HOLE NO. S2 PAGE 1 OF 2

AZ: VERT. DIP: -90°

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au
15	12501		90/90	1.5	15	12525	50	75/75	0.5	
							0			
20	12502		90/90	<0.5	10	12526	80	70/70	0.5	
							0			
	12503		90/90	<0.5	40	12527	75	76/72	0.5	
							0			
25						12528	100	72/72	0.5	<5
	0					12529	14	72/72	2.0	5
30	12504		90/90	1.5	<5					
35	12505		90/90	1.5	<5	12530	14	72/72	6.0	<5
40	12506		90/90	3.0	<5		0			
45	12507		110/90	5.0	<5	12531	22	72/72	3.5	5
50	12508		110/90	5.5	45		0			
55	12509		100/90	3.5	<5	12532	22	72/72	<0.5	<5
60						12533	45	72/72	4.0	<5
	12510		100/90	5.0	5		0			
65	12511		100/85	5.0	5	12534	4	68/68	<0.5	<5
70	12512		100/85	8.0	<5					
75										

HOLE DEPTH ft.	DESCRIPTION
	SCHIST-GNEISS UNIT - Psn (KLONDIKE SCHIST) CHLORITE SCHIST-FAULT?
5	
10	
13	BLACK MUD - PLANT ROOTS AN WHITE QUARTZ FRAGMENTS
15	
17	DARK GREY MUD
19	
20	DARK GREY MUD, PORPHYRY FRAGMENTS AT TOP
22	
25	DARK GREY MUD WITH QUARTZ FRAGMENTS
	? FRESH QUARTZ FELDSPAR PORPHYR-eTqfp DIKE? FRESH TO WEAKLY ALTERED WITH AN OCCASIONAL BAND OF WHITE QUARTZ AND CHLORITE SCHIST.
28	
30	MINOR CHLORITE SCHIST FRAGMENTS
31	
34	
35	FRESH TO WEAKLY ALTERED
36	
38	FRESH TO WEAKLY ALTERED
40	?
42	
44	MINOR BLACK MUD
45	
50	CHLORITE AND QUARTZ CHLORITE SCHIST MOST OF RECOVERED CORE IS WHITE QUARTZ. WEAK TO FAIR FRACTURE JAROSITE, WEAK RARELY FAIR INDIGENOUS DISSEMINATED JAROSITE LINING RARELY MASSIVE FILLING CAVITIES. WHITE QUARTZ HAS OPEN FRACTURES AND CAVITIES COMMON, JAROSITE LINING NOT COMMON.
55	
58	BLACK MUD AN DECOMPOSED CHLORITE SCHIST
60	
65	
70	

SAMPLE NO.	PPM Sn
12525	1
12526	1
12527	1
12528	1
12529	4
12530	2
12531	1
12532	1
12533	1
12534	1

MOUNT SOPRIS GAMMA PROBE LOG

PROBE MALFUNCTION

5 10 15 20 25 30 35 40 45 50 55 60 65 70

*— CPS — 120/100 — COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S2 PAGE 2 OF 2

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au
80	12513		100/90	5.5	<5
	12514 (1)		120/90	14	<5
	(2)		110/90	11	20
85	12515		120/90	11	60
90	12516		110/90	9.0	<5
95					
100					
105					
110					
115					
120					
125					
130					
135					
140					
145					
150					

CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au
12535	100	84/76	7.0	
12536	9	72/68	0.5	
12537	32	74/70	3.0	
12538	83	80/76	2.5	
11432	100	80/80	7.5	
11433	100	80/80	9.0	
11434	100	90/80	2.5	

HOLE DEPTH ft	DESCRIPTION
79	BROWN SANDY MUD GRADING INTO FINE SAND THEN TO COARSE GRITTY SAND - SAND 40% QUARTZ & 60% SCHIST
80	PORPHYRY AND WHITE QUARTZ WITH SCHIST INCLUSIONS
82	
85	WHITE QUARTZ
	WHITE QUARTZ
89	?
90	PALE GREEN, BLEACHED MODERATE PERVASIVE ARGILLIC SUPERGENE ALTERATION.
95	
97	
100	
105	0.5 FT. PORPHYRY BRECCIA IN A DARK GREEN MONTMORILLONITE MATRIX
110	
115	
116	END OF HOLE - ABANDONED

CHLORITE AND QUARTZ CHLORITE SCHIST

SEE PAGE 1 FOR DESCRIPTION.

QUARTZ FELDSPAR PORPHYRY

GREENISH GRAY COLORED, MEDIUM GRAINED, SMOKY QUARTZ (10-15%) FELDSPAR (20-30%) AND CHLORITIZED BIOTITE-HORNBLENDE (<3%) PHENOCRYSTS IN A MICROCRYSTALLINE MATRIX. FRACTURES AVERAGE 20° TO CORE AXIS, DENSITY 1-4/FT. FAIR-MODERATE ARGILLIC ALTERATION. STRONG MANGANESE SPECKLING AND WEAK JAROSITE-GOETHITE ALONG FRACTURES. TRACES OF GYPSUM?

FOOTAGE	MOUNT SOPRIS GAMMA PROBE LOG
80	
85	
90	PROBE MALFUNCTION
95	
100	
105	
110	
115	
120	
125	
130	
135	
140	
145	

* – CPS – 120/100 – COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

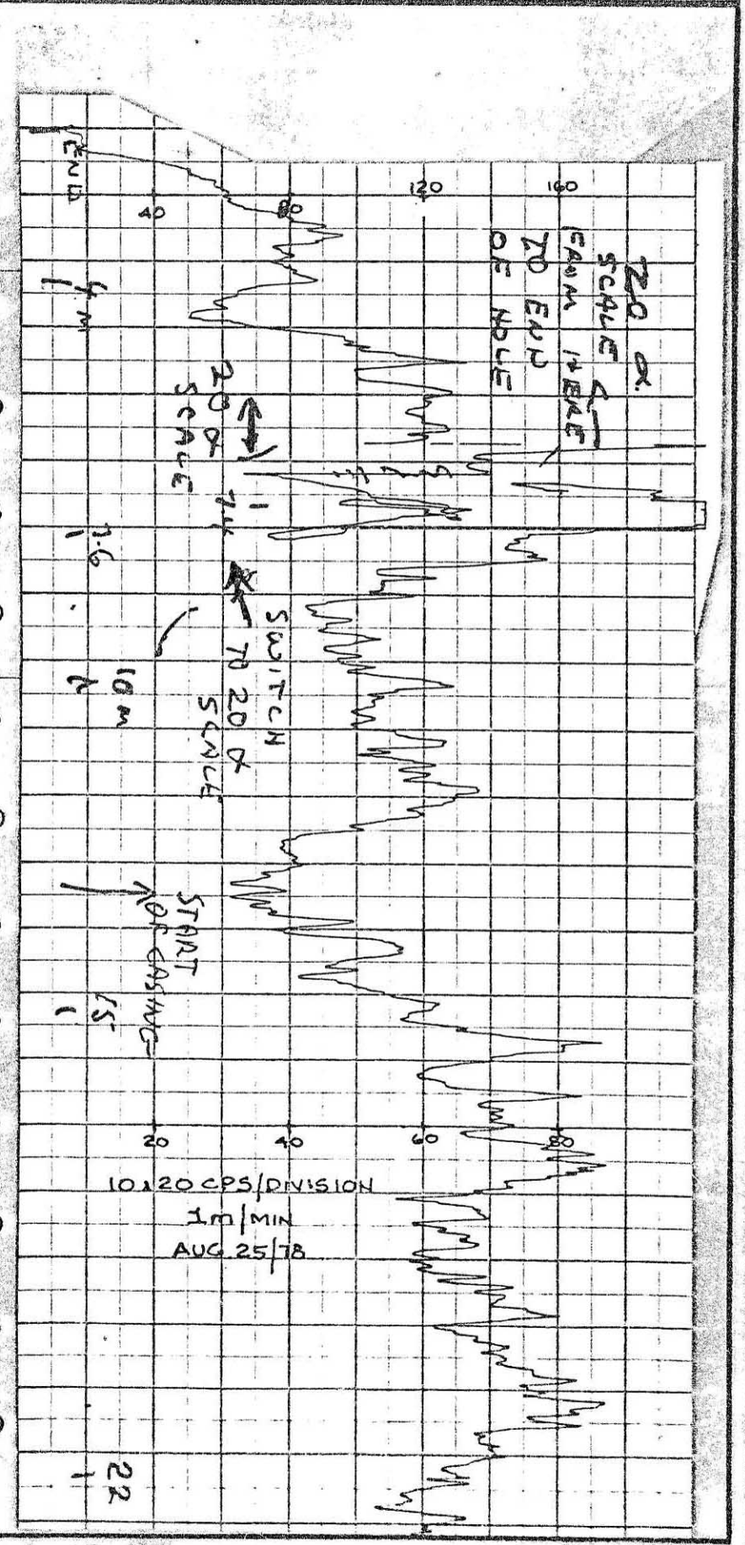
DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE COLLARED AT 988 S, 52 W
HOLE NO. 53 PAGE 1 OF 3
AZ: 104° DIP: -50° ANGLE FOLIATION TO CORE AXIS

FOOTAGE	SLUDGE SAMPLE NO.	SLUDGE WEIGHT LBS	SLUDGE CPS*	SLUDGE ppm U	SLUDGE ppb Au	CORE SAMPLE NO.	CORE % RECOV.	CORE CPS*	CORE ppm U	CORE ppb Au	HOLE DEPTH ft.	DESCRIPTION
5			LOST CIRCULATION - NO SLUDGES								5	SCHIST-GNEISS UNIT-Psn (KLONDIKE SCHIST)
10											10	CHLORITE SCHIST
15											15	MINOR QUARTZ CHLORITE SCHIST WITH OCCASIONAL UP TO 0.4 FT. WIDE LENSES OF WHITE QUARTZ OFTEN WITH OPEN FRACTURES SOMETIMES LINED WITH QUARTZ CRYSTALS. WEAK TO FAIR JAROSITE COATING FRACTURES
20											20	
25											25	NO CORE RECOVERED
30											30	
35											35	
40											40	
45											45	
50						12540	7	100/100	T.O	<5	50	
55											55	
60	11401		85/75	26	<5						60	
	11402		100/75	25	5	12541	38	110/110	22	<5	62	--- FAULT - 0.8 FT GREY MUD WITH GRIT SIZE QUARTZ FRAGMENTS
65											65	
	11403		100/80	27	10	12542	72	120/110	14	<5	69	
70											70	--- FAULT - HIGHLY BROKEN, IN PART MUD AND QUARTZ FRAGMENTS STRONG JAROSITE TOP CONTACT
	11404		95/80	28	<5	12543	35	110/110	20	<5	72	--- MODERATE FRACTURE AND FOLIATION JAROSITE
75												

* - CPS - 80/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

MOUNT SOPRIS GAMMA PROBE LOG



DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S3 PAGE 2 OF 3

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au	HOLE DEPTH ft
											76
80	11405		95/75	22	5	12544	12	110/110	3.0	<5	80
	11406		95/80	17	<5	12545	47	110/110	24	5	85
85	11407		95/75	19	<5	12546	33	100/100	15	<5	86
90	11408		90/75	17	<5	12547	47	120/110	25	5	90
95	11409		95/80	18	<5	12548	63	110/110	18	60	94 95 97
100	11410		100/80	16	10	12549	30	110/110	3.5	10	100 101
105	11411		95/75	21	<5	12550	25	120/110	30	15	105 106 108
110	11412		90/75	14	<5	11422	25	75/75	8.0	<5	110
115	11413		80/75	15	<5	11423	35	75/75	4.5	<5	114 115 116
120	11414		90/75	18	<5	11424	11	80/80	1.0	5	120
125	11415		95/80	29.	<5						125
130	11416		80/75	N.S.	N.S.		0				130
135	11417		80/75	17		11425	27	75/75	<0.5	<5	134 135 138
140	11418		95/80	16		11426	4	75/75	<4.0	<5	140
145	11419		80/80	16							145
150											

DESCRIPTION

FAULT - HIGHLY BROKEN AND MUDDED, GRAPHITIC

FAULT ZONE - MUDDED AND BROKEN SCHIST WEAK JAROSITE

FAULT ZONE - MUDDED AND BROKEN SCHIST

GRAPHITIC QUARTZITE

FAULT ZONE - MUDDED SCHIST WEAK - MODERATE JAROSITE

FIRST TRACE OF PYRITE

FAULT - BROKEN AND MUDDED

FAULT - WEAK WATER FLOW

FAULT - 0.3 FT MUD

FAULT - 0.2 FT MUD

CAVE AT 150 FT. 1.0 FT BROWN SAND
1.5 FT - BLACK GRIT - GRAPHITE & WHITE QUARTZ

CHLORITE AND QUARTZ CHLORITE SCHIST

PARTINGS AND NARROW BANDS OF GRAPHITE SCHIST BECOME COMMON TOWARDS BOTTOM CONTACT. NARROW QUARTZ LENSES COMMON, WEAK, LOCALLY FAIR FRACTURE JAROSITE

FAIR - MODERATE FRACTURE AND DISSEMINATED JAROSITE TO BOTTOM CONTACT.

MODERATE - ABOVE AVERAGE DISSEMINATED AND FRACTURE JAROSITE. TRACES OF PYRITE IN SCHIST ALONG FOLIATION.

20°

QUARTZ CHLORITE SCHIST

IN PART GRAPHITE SCHIST. NARROW QUARTZ LENSES. WEAK SUPERGENE ALTERATION ALONG FRACTURES. WEAK - FAIR PYRITE ALONG FOLIATION, USUALLY RIMMED BY JAROSITE. IN WEATHERED SECTIONS PYRITE COMPLETELY LEACHED WITH JAROSITE LINING CAVITY.

QUARTZ GRAPHITE SCHIST

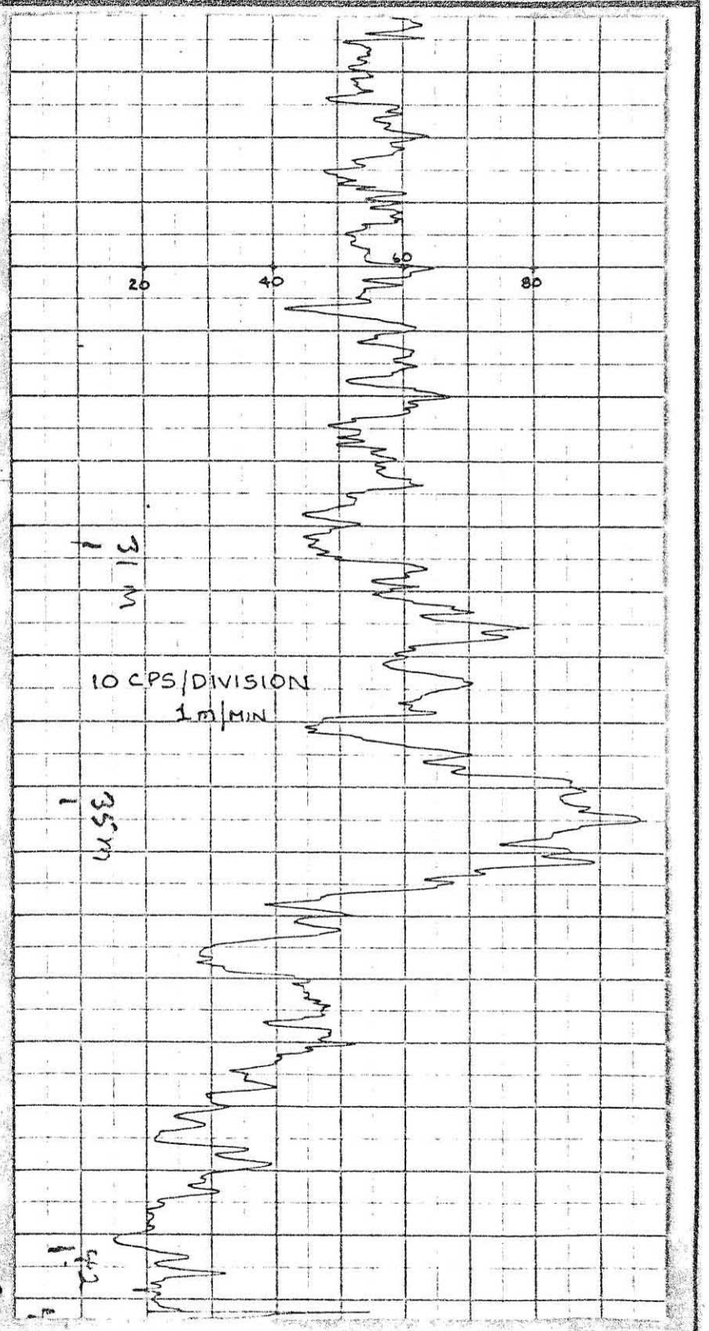
WEAK QUARTZ IN LENSES AND VEINING. WEAK - FAIR DISSEMINATED AND FOLIATION PYRITE. FAIR DISSEMINATED, FOLIATION AND FRACTURE JAROSITE

35°

QUARTZ GRAPHITE AND QUARTZ CHLORITE SCHIST

OCCASIONAL UP TO 0.3 FT LENSES OF WHITE QUARTZ AND SOME AS FRACTURE FILLING. WEAK TO FAIR DISSEMINATED AND QUARTZ FRACTURE FILLING PYRITE, WEAK JAROSITE COATING CAVITIES AND RIMMING PYRITE

MOUNT SOPRIS GAMMA PROBE LOG



* - CPS - 100/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS *	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS *	ppm U	ppb Au	HOLE DEPTH ft
	11420		95/75	20		11427 CORED CAVE AT 150 FT.	2.5FT.	80/75	3.5		
155	11421		90/75	20		11428	12	75/75	3.5		155
160											160
											70
						11429	4	75/75	5.5		
											120
						11430	7	75/75	2.0		
											130
						11431	0.2FT.	75/75	<0.5		150

DESCRIPTION — HOLE NO. S3 PAGE 3 OF 3

QUARTZ GRAPHITE AND QUARTZ CHLORITE SCHIST
SEE PAGE 2 FOR DESCRIPTION

? QUARTZ WITH GRAPHITE PARTINGS — QUARTZ FELDSPAR PORPHYRY eTqfp

END OF HOLE-ABANDONED DUE TO CAVING

HIGHLY BLEACHED AND ALTERED, MYLONITIZED

CORED CAVE

WHITE QUARTZ, GRAPHITE AND QUARTZ GRAPHITE SCHIST. FAIR JAROSITE LINING QUARTZ CAVITIES AND FRACTURES IN SCHIST

WHITE QUARTZ, QUARTZ GRAPHITE SCHIST - PARTLY MUDDED. ABOVE AVERAGE DISSEMINATED PYRITE, WEAK PYRITE AND FAIR JAROSITE ALONG FRACTURES

WHITE QUARTZ, CHLORITE QUARTZ SCHIST. ABOVE AVERAGE PYRITE AND TRACES OF MALACHITE

RODS PULLED AT 150', HOLE FILLED WITH SAND - REAMED TO 150' AND DRILLED TO 160', CORE BARREL WORE OUT, PULLED ROD AND HOLE FILLED WITH SAND - UNABLE TO REAM TO BOTTOM DUE TO SAND BACKING UP INTO RODS.

FOOTAGE — MOUNT SOPRIS GAMMA PROBE LOG

NOT PROBED AS RODS FILLED WITH SAND

* - CPS - 120/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS *	ppm ± U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS *	ppm ± U	ppb Au	HOLE DEPTH ft
5											5
10											10
15	11443	22½	170/170	<4.0	10	11270	8	160/160	<4.0	<5	15
20											20
	11444	6	170/170	<4.0	<5						21
25						11271	37	160/160	<4.0	5	25
	11445	8½	175/175	<4.0	10						
30											30
	11446	9½	170/170	4.5	<5						31
35						11272	26	160/160	6.0	<5	35
	11447	12	170/170	4.5	<5						37
40											40
	11448	6	170/170	25	<5						43
45						11273	18	160/160	7.0	5	45
	11449	9½	170/170	22	<5						47
50											50
	11450	17	170/170	29	<5						
55						11274	16	160/160	7.0	10	55
	11253	8½	170/170	16	15						
60											60
	11254	8	170/170	23	10						63
65						11275	30	160/150	42	5	65
	11255	17	170/170	44	<5						
70											70
	11256	26	180/170	59	<5	11276	67	190/160	44	5	
75											

HOLE COLLARED AT 930 S, 48 E

DESCRIPTION HOLE NO. S4 PAGE 1 OF 5

AZ: 172° DIP: -50° ANGLE FOLIATION TO CORE AXIS

SCHIST-GNEISS UNIT - PSN (KLONDIKE SCHIST)

CHLORITE SCHIST

MINOR QUARTZ CHLORITE SCHIST AND GRAPHITE PARTINGS. MINOR NARROW QUARTZ LENSES. ROCK HIGHLY WEATHERED. CAVITIES EMPTY.

FAULT? - PORPHYRY (DIKE?) CHLORITE SCHIST MUD WITH WHITE QUARTZ FRAGMENTS

FAULT? - MUDDED SCHIST WITH JAROSITE COATING

FAULT - SCHIST MUD

TRACE - FAIR DISSEMINATED AND FRACTURE JAROSITE 31-37 FT.

QUARTZ GRAPHITE SCHIST

IN PLACES HIGH QUARTZ CONTENT. MINOR CHLORITE AND QUARTZ CHLORITE SCHIST. ENDIGENOUS JAROSITE LINING CAVITIES, EXOTIC LIMONITE ON FRACTURES

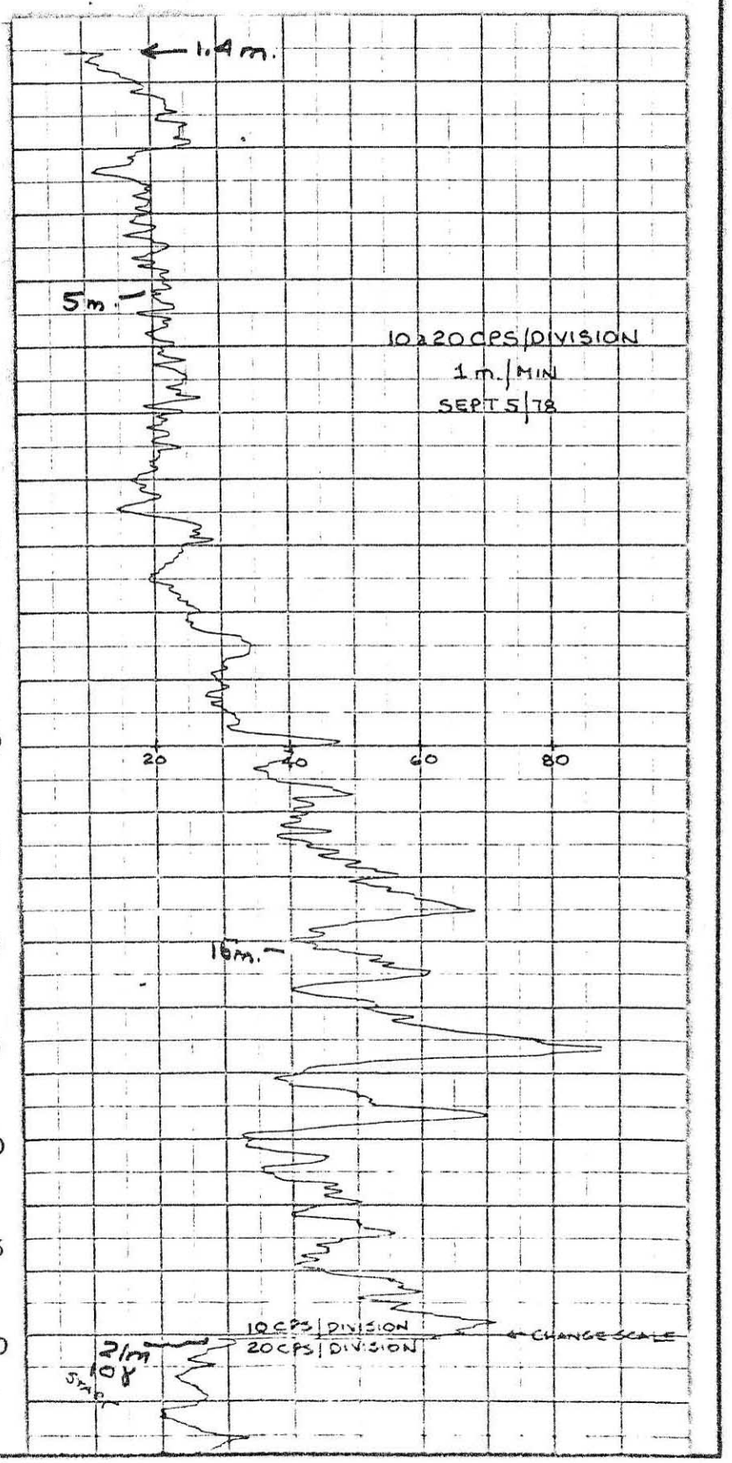
GRAPHITIC QUARTZITE, IN PLACES MUDDED AND BROKEN QUARTZ AN GRAPHITE SCHIST - FAULT. FAIR - ABOVE AVERAGE DISSEMINATED AND FRACTURE JAROSITE

FAIR FRACTURE AND TRACE DISSEMINATED JAROSITE

FAULT - 0.1 FT BLACK MUD

CAVE - 5 FT RECOVERY

MOUNT SOPRIS GAMMA PROBE LOG



* - CPS - 180/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (434 cc CRYSTAL) SCINTILLOMETER

± U LESS THAN 4 DETECTION LIMIT DUE TO FLUORESCENCE QUENCHING CAUSED BY HIGH CONCENTRATION OF INTERFERING METALS

DRILL HOLE LOG — UKON JOINT VENTURE — SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S4 PAGE 2 OF 5

ANGLE FOLIATION TO COREAX.

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au	HOLE DEPTH ft
80	11257	6	170/170	56	<5	11277	36	170/170	38	10	79
											80
	11258	14	170/165	72	5	11278	20	160/160	41	<5	81
											83
85	11259	12	180/170	77	5						85
							0				
90	11260	6	180/170	71	<5						90
						11351	25	160/160	4.0	15	93
95	11261	17	180/165	68	<5	11352	35	160/160	28	10	95
											97
							0				
100	11262	6	180/170	38	<5						100
						11353	25	160/160	8.5	<5	103
105	11263	8	165/165	31	<5	11354	15	160/160	7.0	<5	105
											107
							0				
110	11264	13	170/170	32	5						110
						11355	33	160/160	7.5	<5	111
115	11265	11	170/170	31	<5						115
											117
120						11356	4	160/160	4.0	<5	120
	11266	7	170/170	19	<5						123
125	11267	7	170/170	14	<5	11357	15	160/160	2.5	<5	125
130	11268	6½	175/160	29	<5						130
							0				
135	11269	4	160/160	20	5	11358	33	160/160	23	<5	135
140							0				140
	11279	4	155/150	32	<5	11359	25	160/160	5.0	<5	
145											145
	11280	5½	150/150	33	<5		0				
150											

DESCRIPTION

QUARTZ GRAPHITE SCHIST

SEE PAGE 1 FOR DESCRIPTION

79 — FAULT - 0.5 FT MUD
80 — FAULT - 0.2 FT MUD

ABOVE AVERAGE DISSEMINATED AND FRACTURE JAROSITE

83

85

90

93

ABOVE AVERAGE DISSEMINATED AND FRACTURE JAROSITE. TRACE PYRITE.

95

97

100

103

MODERATE - ABOVE AVERAGE DISSEMINATED AND FRACTURE INDICENOUS JAROSITE. CAVITIES MASSIVE

105 — 107 — MASSIVE

110

111

FAIR DISSEMINATED AND FRACTURE JAROSITE, CAVITIES MASSIVE JAROSITE TRACE PYRITE.

115

117

120

123

CHLORITIC QUARTZITE

IN PLACES GRAPHITIC, MINOR NARROW WHITE QUARTZ LENSES WITH OPEN UNUNED FRACTURES.

125

130

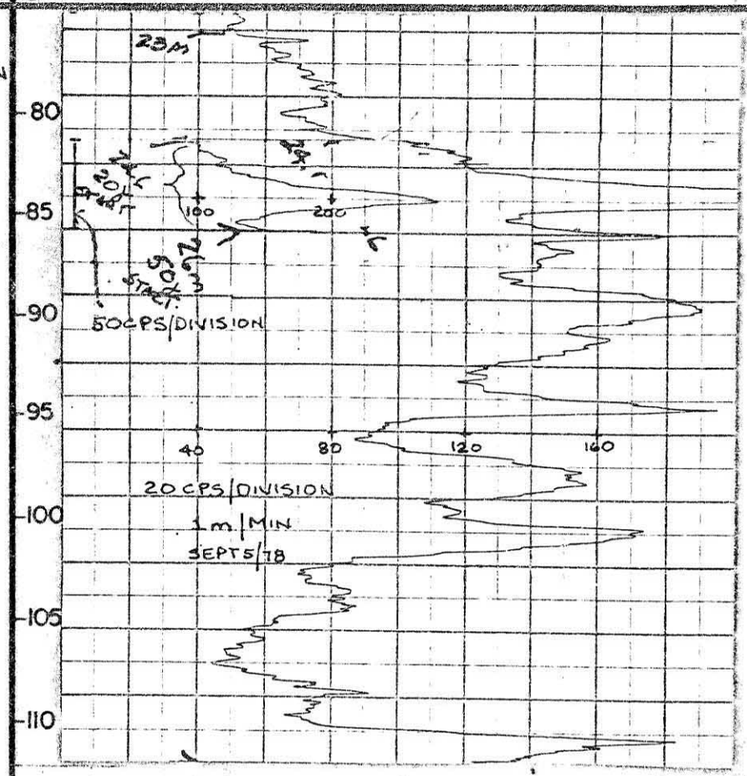
MODERATE - ABOVE AVERAGE DISSEMINATED AND FRACTURE JAROSITE, - IN PLACES MASSIVE LINING. PYRITE TRACE TO FAIR

135

140

145

MOUNT SOPRIS GAMMA PROBE LOG



NOT PROBED AS RODS FILLED WITH SAND

* — CPS — 120/100 — COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S4 PAGE 3 OF 5

ANGLE FOLIATION TO CORE AXIS

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au
	11281	7¾	150/150	37	5		0			
155										
	11282	14	150/150	20	<5	11360	13	160/160	5.0	<5
160										
	11283	5½	150/150	24	<5	11361	40	160/160	8.5	5
165							0			
	11284	7½	150/150	9.0	<5					
170						11362	30	150/150	8.5	10
	11285	5½	160/150	20	<5					
						11363	63	150/150	8.5	35
175										
	11286	6½	150/150	29	<5		0			
180						11364	15	150/150	6.5	<5
	11287	7	170/170	29	<5	11365	20	150/150	50	<5
185										
	11288	6	175/170	18		11366	30	150/150	20	
190										
	11289	11	170/170	6.5		11367	60	150/150	0.5	
195										
	11290	10½	170/165	26		11368	42	150/150	1.0	
200										
	11291	12	170/170	29		11369	45	160/160	1.0	
205										
	11292	8½	165/160	30		11370	35	160/160	<0.5	
210							0			
	11293	10½	180/170	24		11371	33	160/160	<0.5	
215										
	11294	15½	170/170	34			0			
220										
	11295	5½	175/170	43		11372	20	165/160	<0.5	
225							0			

HOLE DEPTH ft.	DESCRIPTION
	CHLORITIC QUARTZITE
155	
159	--TRACE MALACHITE — FAIR DISSEMINATED AN FRACTURE JAROSITE TRACE PYRITE
160	
163	
165	
167	
170	LOW DISSEMINATED AND FRACTURE JAROSITE, INTENSE IN GRAPHITE SCHIST BANDS
171	-- FAULT -0.1 FT MUD
173	
175	FAULT-MUD -- BOTTOM CONTACT OF WEATHERED ZONE----
180	
185	WEAK COARSE (UP TO 3MM) AND VERY FINE DISSEMINATED PYRITE. JAROSITE RARELY DISSEMINATED USUALLY MINOR AMOUNT ALONG WEATHERED FRACTURES
190	
195	
200	
205	CHLORITIC QUARTZITE FAIR - MODERATE COARSE (3 MM.) AND VERY FINE GRAINED PYRITE. RARE ALONG FRACTURE PURPLE METALLIC FILM - SPECULARITE? MINOR WHITE QUARTZ LENSES
210	WEAK FRACTURING WEAK WEATHERING
215	
220	CORE BROKEN AND FRACTURED FAIR DISSEMINATED AND FRACTURE JAROSITE, WEAK CLAY

FOOTAGE	MOUNT SOPRIS GAMMA PROBE LOG
155	
160	NOT PROBED AS RODS FILLED WITH SAND
165	
170	
175	
180	
185	
190	
195	
200	
205	
210	
215	
220	

30°
45°
40°
55°
25°
0°-40°
15°

* — CPS — 120/100 — COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. 84 PAGE 5 OF 5

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO	% RECOV.	CPS*	ppm U	ppb Au	HOLE DEPTH ft.	DESCRIPTION
	A1761	25	155/150	22		11387		220/220	<0.5			WHITE QUARTZ-PARTINGS OF GRAPHITE SCHIST
305											305	---
	A1762	11	150/150	20		11388		240/220	1.5			
						CAVE 11389		220/220	32			
310						11390		220/220	<0.5		310	--- CAVE-GRIT FRAGMENTS-SCHIST AND WHITE QUARTZITE
											311	END OF HOLE-ABANDONED DUE TO CAVE

QUARTZ GRAPHITE SCHIST
SEE PAGE 4 FOR DESCRIPTION

ANGLE FOLIATION TO CORE AXIS

CAVING REQUIRED REAMING FROM 69' TO 75', 70' TO 98', 135' TO 175', 179' TO 259'. CORE BARREL LOST IN HOLE AT 311', TRIED TO REAM AND RODS FILLED WITH SAND.

MOUNT SOPRIS GAMMA PROBE LOG

FOOTAGE

RODS FILLED WITH SAND

*—'CPS – 120/100 – COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S4 PAGE 4 OF 5

ANGLE FOLIATION TO CORE AXIS

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au	HOLE DEPTH ft
							0				
	11296	3½	170/170	23		11373	30	160/160	<0.5		228
230											230
	11297	2	150/150	7.5		11374	0				231
						11374	15	160/160	<0.5		
235						11375	15	160/160	<0.5		235
	11298	2	150/150	6.5							
240							0				240
	11299	2	150/150	6.5							
245											245
	11300	4	150/150	22		11376	48	160/160	31		247
250											250
	A1751	3	150/150	16		11377	33	155/155	<0.5		
255											255
	A1752	9½	165/160	13		11378	35	170/170	<0.5		
						CAVE 11379	9.3FT	170/170	24		
260											260
	A1753	12½	160/160	14		11380	64	170/170	<0.5		263
265											265
	A1754	8	160/160	18		11381	50	160/160	<0.5		
270											270
	A1755	8½	160/160	16		11382	20	160/160	<0.5		
275											275
	A1756	8½	160/160	21			0				
						11383	13	160/160	<0.5		
280	A1757	7½	160/160	23							280
							0				
285											285
	A1758	20½	160/160	24		11384	60	170/170	<0.5		287
											288
290											290
	A1759	18	170/160	25		11385	60	170/170	<0.5		
295											295
	A1760	22½	165/160	25		11386	76	220/220	<0.5		297.5
											299

DESCRIPTION

CHLORITIC QUARTZITE

SEE PAGE 3 FOR DESCRIPTION.

228 — TRACES OF MALACHITE ALONG FRACTURES AND CHALCOPYRITE IN QUARTZ VEIN

231 — FAULT-HIGHLY BROKEN, GRAPHITIC CORE BROKEN-FRACTURED FAIR DISSEMINATED AND FRACTURE JAROSITE, WEAK CLAY

247

CHLORITE QUARTZ SCHIST

RARELY GRAPHITIC, INCREASING QUARTZ TOWARDS BOTTOM CONTACT. FAIR COARSE AND VERY FINE GRAIN DISSEMINATED PYRITE. OCCASIONAL VEINLET OF PYRITE IN CLEAR QUARTZ.

263 — INCREASING QUARTZ

287 — FAULT - MUD

288

290 — FAULT - MUD, CORE BROKEN, HIGHLY GRAPHITIC

QUARTZ GRAPHITE SCHIST

HIGH IN QUARTZ. NUMEROUS STRONG GOUGY PLANES - FAULTS FAIR COARSE AND MINOR FINE DISSEMINATED PYRITE. RARE JAROSITE ALONG FRACTURES

295 — FAULT - MUD

297.5 — FAULT - 0.5 FT. BROKEN QUARTZ AND GOUGE

299 — FAULT - 0.1 FT GOUGE

MOUNT SOPRIS GAMMA PROBE LOG

FOOTAGE

230 235 240 245 250 255 260 265 270 275 280 285 290 295

RODS FILLED WITH SAND

15° 15° 10° 0°-10°-0°

* — CPS — 120/100 — COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG — UKON JOINT VENTURE — SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S5 PAGE 2 OF 4

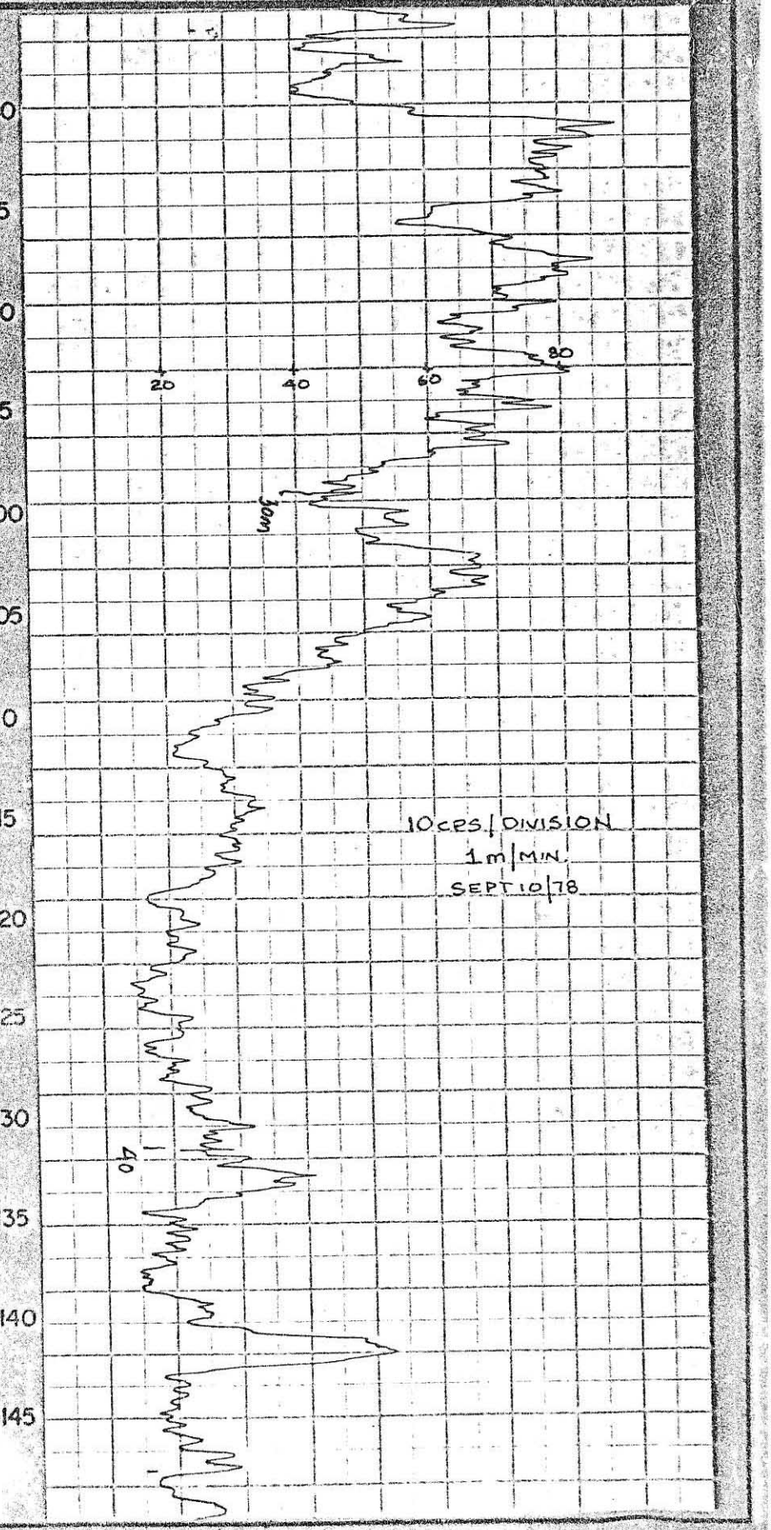
ANGLE FOLIATION TO CORE

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au
5		11	160/160	8.0		A1853	37	220/220	5.0	
			160/160	7.5		A1854	88	220/220	5.5	
10	A1767	17½	165/165	6.5		A1855	37	220/220	14	
15	A1768	22½	165/165	8		A1856	60	220/220	3.0	
20	A1769	15	160/160	7.5		A1857	83	220/220	3.5	
25	A1770	16	170/160	28		11394	43	220/220	2.5	
30	A1771	12	165/165	26		11395	28	230/220	3.5	
35	A1772	11	160/160	9.5		11396	22	220/220	<0.5	
40	A1773	19	160/160	36		11397	15	220/220	<0.5	
45	A1774	26	170/160	34		11398	10	220/220	7.0	
50	A1775	19	170/160	43			0			
55	A1776	36	190/160	58		11399	20	220/220	1.5	
60	A1777	30	175/160	38		11400	50	220/220	48	
65	A1778	14	170/160	40			0			
70	A1779	6	160/160	7.5		A1851	15	220/220	<0.5	
						A1852	15	230/220	<0.5	

HOLE DEPTH ft	DESCRIPTION
77	SEE DESCRIPTION 69-75 FT.
80	**QUARTZ CHLORITE SCHIST** — QUARTZ CONTENT HIGH. MINOR NARROW WHITE QUARTZ LENSES, OFTEN OPEN FRACTURES WITH WEAK JAROSITE CAVITIES LOW-FAIR, USUALLY MASSIVE FILLING OF JAROSITE. FRACTURE EXOTIC JAROSITE LOW BUT TOWARDS BOTTOM CONTACT GOETHITE MORE COMMON THAN JAROSITE. ROCK HIGHLY WEATHERED ALONG FOLIATION. 40°
85	10°
89	WHITE QUARTZ, CAVITIES LINED WITH JAROSITE
90	
91	GOETHITE ON FRACTURES
93	AFTER 93 FT CAVITIES NOT COMMON - EMPTY
95	RARELY INDIGENOUS SEMI MASSIVE FILLING OF JAROSITE. FRACTURE AND FOLIATION
96	JAROSITE AND GOETHITE LOW. 60°
100	SANDED UP TO ¼" SCHIST AND WHITE QUARTZ FRAGMENTS
103	INCREASING NUMBER OF GRAPHITE PARTINGS
105	START OF PYRITE
109	**QUARTZ GRAPHITE SCHIST** — QUARTZ CONTENT HIGH. CAVITIES LOW TO FAIR IN AMOUNT, USUALLY EMPTY RARELY INDIGENOUS MASSIVE FILLING OF JAROSITE. FRACTURE EXOTIC JAROSITE ABOVE AVERAGE TO 111 FT AND THEN LOW TO FAIR. DISSEMINATED PYRITE LOW, UP TO 3MM IN DIAMETER. 45°
110	QUARTZ CHLORITE SCHIST
111	
115	45°
120	**CHLORITE QUARTZ SCHIST** — CHLORITE HIGH, QUARTZ CONTENT LOW. CAVITIES LOW TO FAIR WITH INDIGENOUS JAROSITE AND LOW TO MODERATE FRACTURE JAROSITE FAIR. DISSEMINATED PYRITE.
125	TRANSITION FROM MODERATE TO LOW FRACTURE JAROSITE. 30°
55	
57	
60	FAIR DISSEMINATED AND FRACTURE JAROSITE. 45°
61	FAU
63	FAUL
65	FAULT - HIGH FR
69	MINATED UNG AND AROSITE
70	WHITE QUARTZ CRYSTAL LINED F CAVITIES, JAROSITE ONLY ON FRACTURE

GRAPHITIC QUARTZITE — HIGHLY GRAPHITIC, CORE HIGHLY BROKEN AND ONLY SMALL FRAGMENTS, NARROW <0.2 FT WHITE QUARTZ LENSES. MODERATE DISSEMINATED AND FAIR QUARTZ AND CRACK FILLING PYRITE. TRACES OF FRACTURE JAROSITE. POSSIBLE FAULT ZONE AS CORE HIGHLY BROKEN AND SLICKENSIDES COMMON ALONG FOLIATION

MOUNT SOPRIS GAMMA PROBE LOG



* — CPS - 120/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S5 PAGE 3 OF 4

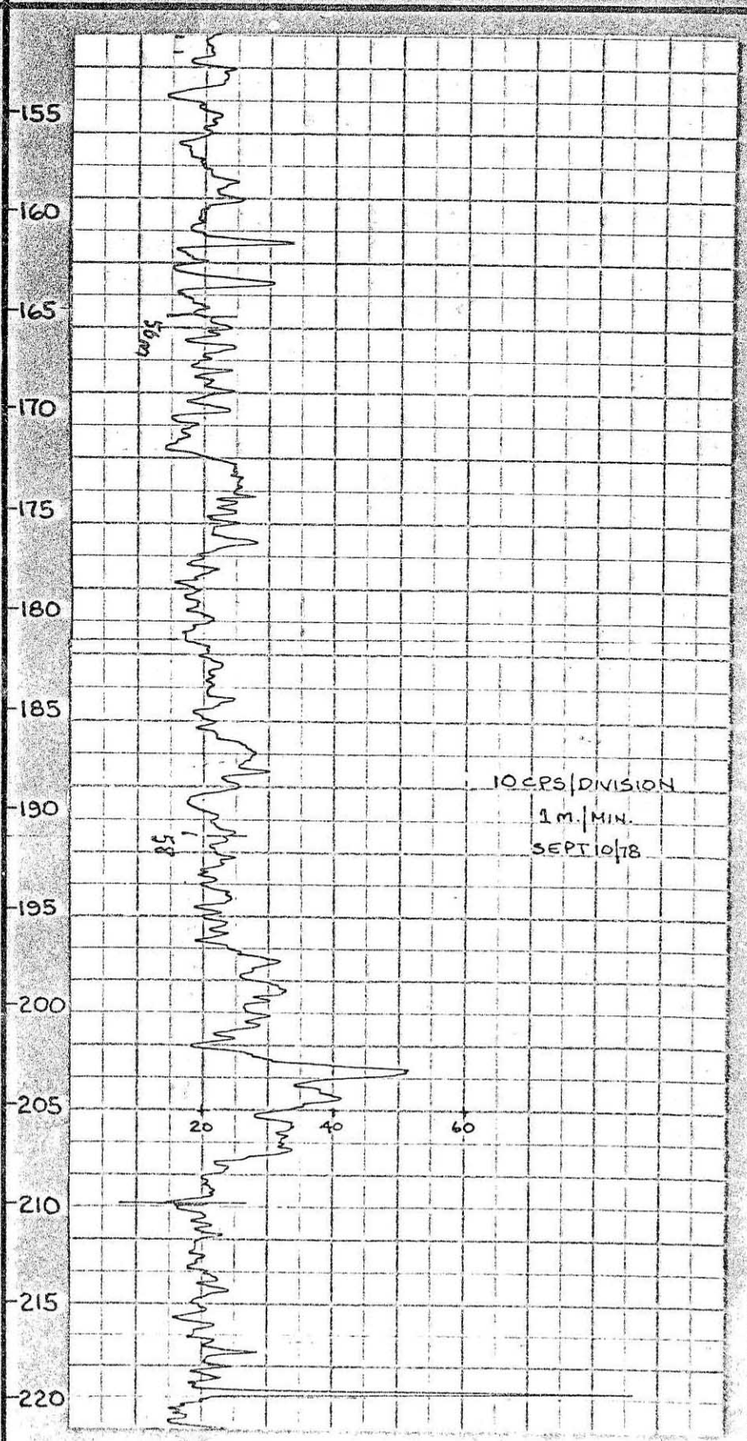
ANGLE FOLIATION TO CORE AXIS

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au
155	A1795	9	160/160	1.0		A1868	13	220/220	<0.5	
160	A1796	10	160/160	1.0		A1869	13	220/220	<0.5	
165	A1797	9	160/160	1.0		A1870	10	230/220	<0.5	
170	A1798	11½	160/160	<0.5						
175	A1799	13	160/160	1.0		A1871	8	220/220	<0.5	
180	A1800	11½	160/160	<0.5		A1872	15	230/220	<0.5	
185	A1801	18	165/165	<0.5		A1873	20	220/220	<0.5	
190	A1802	18	165/165	<0.5		A1874	10	220/220	<0.5	
195	A1803	8	160/160	<0.5		A1875	48	220/220	<0.5	
200	A1804	5½	160/160				0			
205	A1805	17	160/160	1.0		A1926	20	220/220	<0.5	
210	A1806	14	155/155	<0.5		A1927	12	220/220	<0.5	
215	A1807	23	170/160	<0.5		A1928	15	220/220	<0.5	
220	A1808	36	165/160	<0.5		A1929	18	220/220	<0.5	
225	A1809	26	160/160	<0.5		A1930	15	220/220	<0.5	

HOLE DEPTH ft	DESCRIPTION
	GRAPHITIC QUARTZITE
153	0.1 FT QUARTZ - CAVITY LINED WITH WHITE PRISMATIC CRYSTALS, HARDNESS = 4 HEULANDITE?
155	
157	MAINLY WHITE QUARTZ WITH CAVITIES LINED BY COARSE FELDSPAR CRYSTALS
160	
163	
165	
167	WHITE QUARTZ WITH COARSE FELDSPAR CRYSTALS, HIGHLY VUGGY WITH JAROSITE LINING
169	
170	
175	WHITE QUARTZ WITH COARSE FELDSPAR CRYSTALS
177	
180	
181	
185	HIGHLY BROKEN, QUARTZ FRAGMENTS COMMON BLACK MUD COMMON.
190	
195	WHITE QUARTZ WITH MUD
200	
205	WHITE QUARTZ WITH GRAPHITIC MUD BANDS AND PARTINGS
210	
215	STRONG FINE WHITE QUARTZ VEINING, OFTEN WITH SLICKENSIDED GRAPHITIC PARTINGS TO 227 FT.
220	

GRAPHITIC QUARTZITE
FAULT ZONE

WEAK TO FAIR GRAPHITE. STRONG QUARTZ LENSES AN VEINLETS. OFTEN WHITE QUARTZ HAS COARSE FELDSPAR CRYSTALS, DECREASING TOWARDS BOTTOM. DISSEMINATED PYRITE, FAIR UP TO 3MM OCCASIONALLY IN WHITE QUARTZ VEINLETS AND NARROW LAMINAE ALONG FOLIATION.



* – CPS – 120/100 – COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au	HOLE DEPTH ft.
5											5
10											10
	A1811	17	170/170	30		A1931	8	200/200	<0.5		11
15	A1812	19	190/170	<0.5		A1932	13	200/200	<0.5		15
20	A1813	18	205/170	<0.5		A1933	38	200/200	<0.5		20
25	A1814	17	190/170	30		A1934	10	200/200	<0.5		25
30	A1815	19	180/170	26		A1935	8	200/200	<0.5		30
35	A1816	27	210/170	38		A1936	17	200/200	<0.5		35
40	A1817	34	220/170	53		A1937	13	200/200	<0.5		37
45	A1818	23	200/180	36		A1938	3,	200/200	<0.5		45
50	A1819	32	175/170	36		A1939	30	200/200	<0.5		50 51
55	A1820	14	180/180	26		A1940	16	200/200	<0.5		55
60	A1821	6	180/180	36		A1941	24	200/200	18		59 60 63
65	A1822	10	185/180	36							65
70	A1823	8	180/180	31		A1942	15	200/200	25		70 71
75											

* – CPS – 120/100 – COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (434 cc CRYSTAL) SCINTILLOMETER

HOLE COLLARED AT 948 S, 86 W

DESCRIPTION

HOLE NO. S6 PAGE 1 OF 2

AZ: 004° DIP: -60° ANGLE FOLIATION TO CORE AXIS

SCHIST-GNEISS UNIT-Psn (KLONDIKE SCHIST)

OCCASIONAL UP TO 2 FT BANDS OF GRAPHITE SCHIST. NARROW LENSES OF QUARTZ COMMON. FAIR TO MODERATE NUMBER OF CAVITIES, OFTEN CONCENTRATED ALONG FOLIATION, USUALLY EMPTY SOME WEAK LINING OF JAROSITE, FAIR TO MODERATE EXOTIC JAROSITE ALONG AND INDIGENOUS JAROSITE ALONG FOLIATION.

– – WHITE QUARTZ FRAGMENTS COMMON, MODERATE CAVITIES SOME BOXWORK AND FAIR JAROSITE AND GOETHITE LINING CAVITIES

RARE NARROW WHITE QUARTZ LENSES AND VEINLETS. OCCASIONAL CAVITY LINED WITH JAROSITE

MODERATE WHITE QUARTZ LENSES WITH FAIR NUMBER OF OPEN FRACTURES AND CAVITIES USUALLY QUARTZ CRYSTAL LINED. CAVITIES EMPTY, AFTER 45 FT MASSIVE JAROSITE FILLING COMMON. FRACTURES LINED WITH INDIGENOUS AND EXOTIC JAROSITE.

– – FAULT - 0.2 FT BLACK MUD

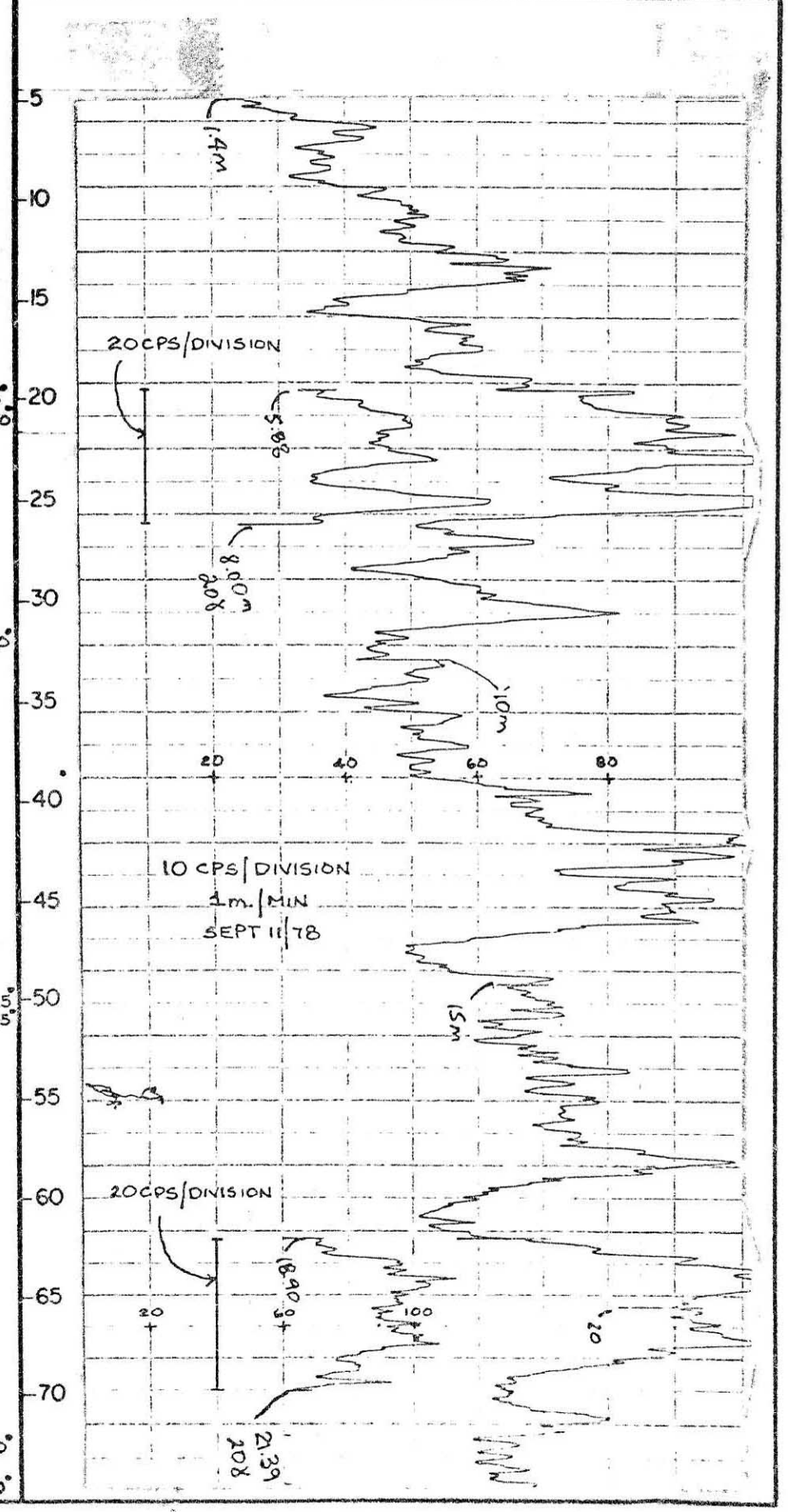
QUARTZ SERICITE CHLORITE SCHIST

PERMAFROST - GOOD CORE RECOVERY

QUARTZ CHLORITE SCHIST

HIGH IN QUARTZ, OCCASIONAL GRAPHITE PARTINGS AND BANDS UP TO 20mm, TOWARDS BOTTOM CONTACT. FAIR TO ABOVE AVERAGE FINE CAVITIES, USUALLY MORE NUMEROUS IN QUARTZ RICH SECTIONS. CAVITIES EMPTY - MODERATE FILLING OF GOETHITE, JAROSITE AND GOETHITE ABOVE AVERAGE ALONG FRACTURES AND ALONG FOLIATION

MOUNT SOPRIS GAMMA PROBE LOG



DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S6 PAGE 2 OF 2

ANGLE FOLIATION TO CORE AXIS

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS *	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV	CPS *	ppm U	ppb Au
80	A1824	6	180/180	31		A1943	80	200/200	14	
	A1825	5	180/180	22		A1944	78	200/200	6.5	
85	A1726	6	180/180	26						
90	A1727	7	180/180	20		A1945	22	200/200	5.0	
95	A1728	30	180/180	15		A1946	25	200/200	7.5	
100	A1729	17	170/170	7.5		A1947	65	200/200	1.5	
105	A1730	19	170/170	7.0		A1948	28	200/200	1.5	
110	A1731	17	170/170	7.0		A1949	18	200/200	7.5	
115	A1732	17	170/170	6.0		A1950	32	200/200	2.0	
120	A1733	5	170/170	1.5						

HOLE DEPTH ft.

80 85 87 90 95 97 100 105 107 110 111 113 115 120 125 130 135 140 145

DESCRIPTION

QUARTZ CHLORITE SCHIST

SEE PAGE 1 FOR DESCRIPTION

PERMAFROST - GOOD CORE RECOVERY

FIRST FRESH PYRITE

FAULT ? - QUARTZ AND GRAPHITE

CHLORITE TALC SCHIST

SOFT, LIGHT GRAY IN COLOR, OCCASIONAL GRAPHITE PARTING, FAIR NARROW WHITE QUARTZ LENSES WITH CAVITIES AND FRACTURES OFTEN QUARTZ CRYSTAL LINED AND LIGHT LINING OF JAROSITE AND GOETHITE. FAIR-MODERATE (1-3%) DISSEMINATED PYRITE. FAIR-MODERATE CAVITIES WITH MASSIVE FILLING OF GOETHITE. JAROSITE ON FRACTURES ONLY WHERE FRACTURING WELL DEVELOPED.

WHITE QUARTZ

FAULT - SOFT SCHIST, QUARTZ LENSE WITH STRONG JAROSITE.

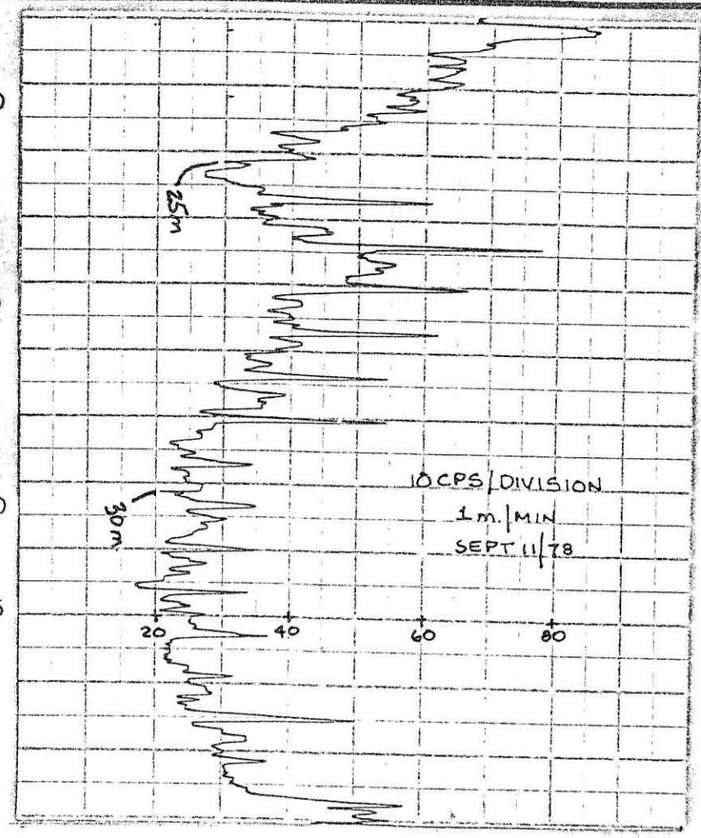
END OF HOLE - ABANDONED DUE TO CAVE

HOLE REAMED FROM 60' TO 80' AND ABANDONED AT 120' WHEN RODS SANDED IN TOO TIGHT TO TURN.

0° 0° 0° 0°

FOOTAGE

MOUNT SOPRIS GAMMA PROBE LOG



80 85 90 95 100 105 110 115 120 125 130 135 140 145

* - CPS - 120/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS*	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS*	ppm U	ppb Au	HOLE DEPTH ft.
5											5
10											10
	A1811	17	170/170	30		A1931	8	200/200	<0.5		11
15	A1812	19	190/170	<0.5		A1932	13	200/200	<0.5		15
20	A1813	18	205/170	<0.5		A1933	38	200/200	<0.5		20
25	A1814	17	190/170	30		A1934	10	200/200	<0.5		25
30	A1815	19	180/170	26		A1935	8	200/200	<0.5		30
35	A1816	27	210/170	38		A1936	17	200/200	<0.5		35
40	A1817	34	220/170	53		A1937	13	200/200	<0.5		37
45	A1818	23	200/180	36		A1938	3,	200/200	<0.5		45
50	A1819	32	175/170	36		A1939	30	200/200	<0.5		50 51
55	A1820	14	180/180	26		A1940	16	200/200	<0.5		55
60	A1821	6	180/180	36		A1941	24	200/200	18		59 60 63
65	A1822	10	185/180	36							65
70	A1823	8	180/180	31		A1942	15	200/200	25		70 71
75											

* – CPS – 120/100 – COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (434 cc CRYSTAL) SCINTILLOMETER

HOLE COLLARED AT 948 S, 86 W

DESCRIPTION

HOLE NO. S6 PAGE 1 OF 2

AZ: 004° DIP: -60° ANGLE FOLIATION TO CORE AXIS

SCHIST-GNEISS UNIT-Psn (KLONDIKE SCHIST)

OCCASIONAL UP TO 2 FT BANDS OF GRAPHITE SCHIST. NARROW LENSES OF QUARTZ COMMON. FAIR TO MODERATE NUMBER OF CAVITIES, OFTEN CONCENTRATED ALONG FOLIATION, USUALLY EMPTY SOME WEAK LINING OF JAROSITE, FAIR TO MODERATE EXOTIC JAROSITE ALONG AND INDIGENOUS JAROSITE ALONG FOLIATION.

– – WHITE QUARTZ FRAGMENTS COMMON, MODERATE CAVITIES SOME BOXWORK AND FAIR JAROSITE AND GOETHITE LINING CAVITIES

RARE NARROW WHITE QUARTZ LENSES AND VEINLETS. OCCASIONAL CAVITY LINED WITH JAROSITE

MODERATE WHITE QUARTZ LENSES WITH FAIR NUMBER OF OPEN FRACTURES AND CAVITIES USUALLY QUARTZ CRYSTAL LINED. CAVITIES EMPTY, AFTER 45 FT MASSIVE JAROSITE FILLING COMMON. FRACTURES LINED WITH INDIGENOUS AND EXOTIC JAROSITE.

– – FAULT - 0.2 FT BLACK MUD

QUARTZ SERICITE CHLORITE SCHIST

PERMAFROST - GOOD CORE RECOVERY

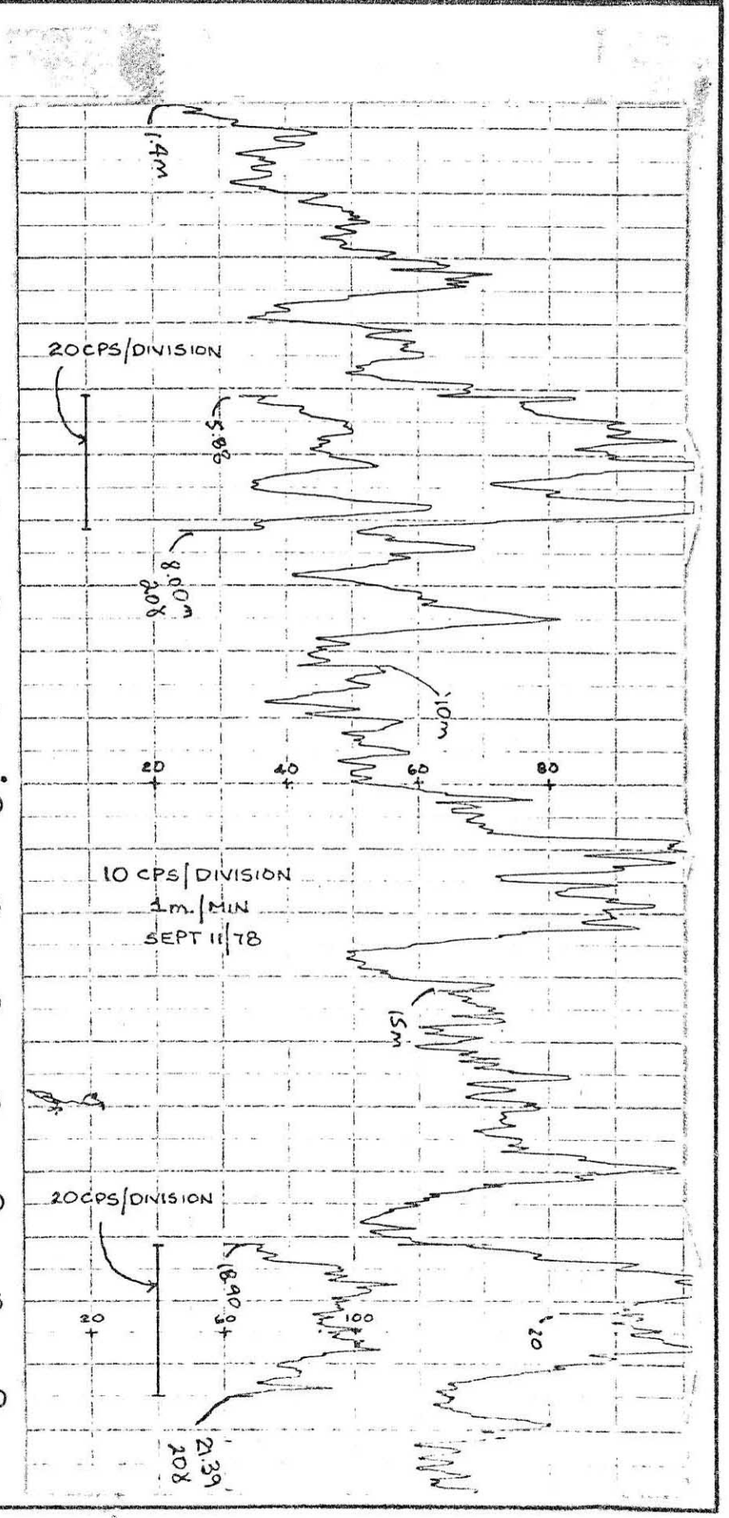
QUARTZ CHLORITE SCHIST

HIGH IN QUARTZ, OCCASIONAL GRAPHITE PARTINGS AND BANDS UP TO 20mm, TOWARDS BOTTOM CONTACT. FAIR TO ABOVE AVERAGE FINE CAVITIES, USUALLY MORE NUMEROUS IN QUARTZ RICH SECTIONS. CAVITIES EMPTY - MODERATE FILLING OF GOETHITE, JAROSITE AND GOETHITE ABOVE AVERAGE ALONG FRACTURES AND ALONG FOLIATION

FOOTAGE

0° 90° 90° 25° 45° 0° 0°

MOUNT SOPRIS GAMMA PROBE LOG



DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. 55 PAGE 4 OF 4

FOOTAGE	SLUDGE SAMPLE NO.	SLUDGE WEIGHT LBS	SLUDGE CPS*	SLUDGE ppm U	SLUDGE ppb Au	CORE SAMPLE NO.	CORE % RECOV.	CORE CPS*	CORE ppm U	CORE ppb Au	HOLE DEPTH ft	DESCRIPTION
	A1810	20	160/160	1.0		A1930	15	220/220	<0.5		227	GRAPHITIC QUARTZITE FAULT ZONE -0.2 FT WHITE QUARTZ-FLUORITE LINED CAVITIES END OF HOLE-ABANDONED DUE TO CAVE

HOLE REAMED 41' TO 61', 112' TO 187'. BIT AND CORE BARREL WEARING OUT ON CAVE, HOLE ABANDONED WHEN SECOND CORE BARREL COMPLETELY WORN AWAY

FOOTAGE — MOUNT SOPRIS GAMMA PROBE LOG

* – CPS – 120/100 – COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS *	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS *	ppm U	ppb Au	HOLE DEPTH ft
5											5
10	A1734	1	170/170	6.5							10
15	A1735	1½	170/170	1.5		12401	21	95/90	3.0		15
20	A1736	6	170/170	3.0							20
25	A1737	6	175/170	2.5		12402	34	100/90	3.5		25
30	A1738	5½	165/165	3.0							30
35		0				12403	30	100/90	5.0		31 35
40	A1739	6	170/165	4.0							40
45	A1740	10	170/165	14.0		12405	37	100/90	4.0		43 45
50	A1741	8	175/170	5.0							50
55	A1742	4½	165/165	7.0		12406	75	100/90	5.5		55
60	NO SLUDGE RECOVERY TO END OF HOLE										60
65						12407	93	105/85	3.0		63 65 66
70						12408	85	115/90	3.0		70
75											

HOLE COLLARED AT 1425 S, 5E
DESCRIPTION HOLE NO. S7 PAGE 1 OF 2
AZ: 050° DIP: -55°

QUARTZ FELDSPAR PORPHYRY

eTqfp

SMOKY QUARTZ (10-15%) AND FELDSPAR (15-20%) MEDIUM GRAINED PHENOCRYSTS IN A LIGHT COLORED, APHANITIC MATRIX OFTEN WITH FINE BLACK SPECKLING. MINOR (<3%) HIGHLY ALTERED MAFICS. FRACTURE DENSITY 1-4/FT-USUALLY WITH STRONG SUPERGENE ARGILLIC ALTERATION. GOETHITE AND MANGANESE ALONG FRACTURES VARIES FROM WEAK TO STRONG.

CORE HIGHLY BROKEN

STRONG ARGILLIC ALTERATION

STRONG ARGILLIC ALTERATION

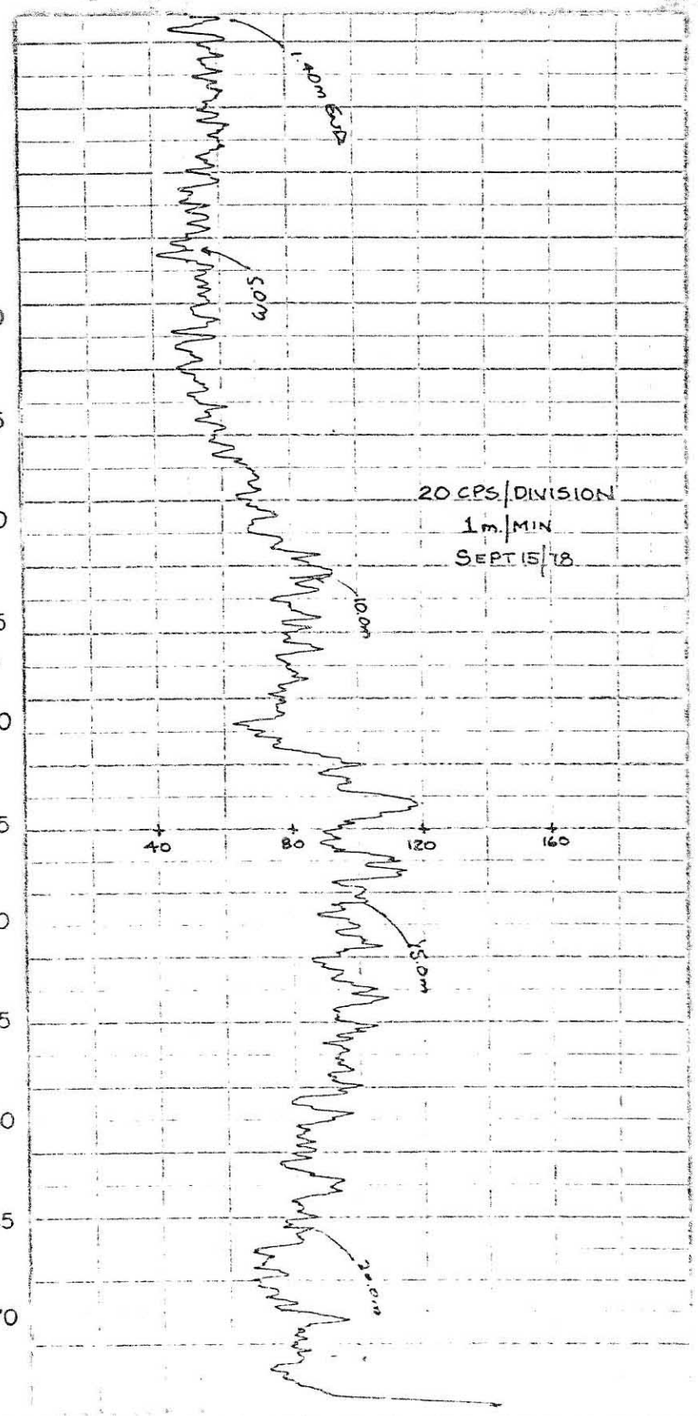
CORE RECOVERY IMPROVES

FRACTURE DENSITY WEAKENS TO 1/1-3 FT.

FIRST APPEARANCE OF CHLORITIZED HORNBLENDE AND BIOTITE (<3%)

RARE-MINOR GOETHITE AND MANGANESE ON FRACTURES. SUPERGENE ARGILLIC ALTERATION ON FRACTURES NOT COMMON

MOUNT SOPRIS GAMMA PROBE LOG



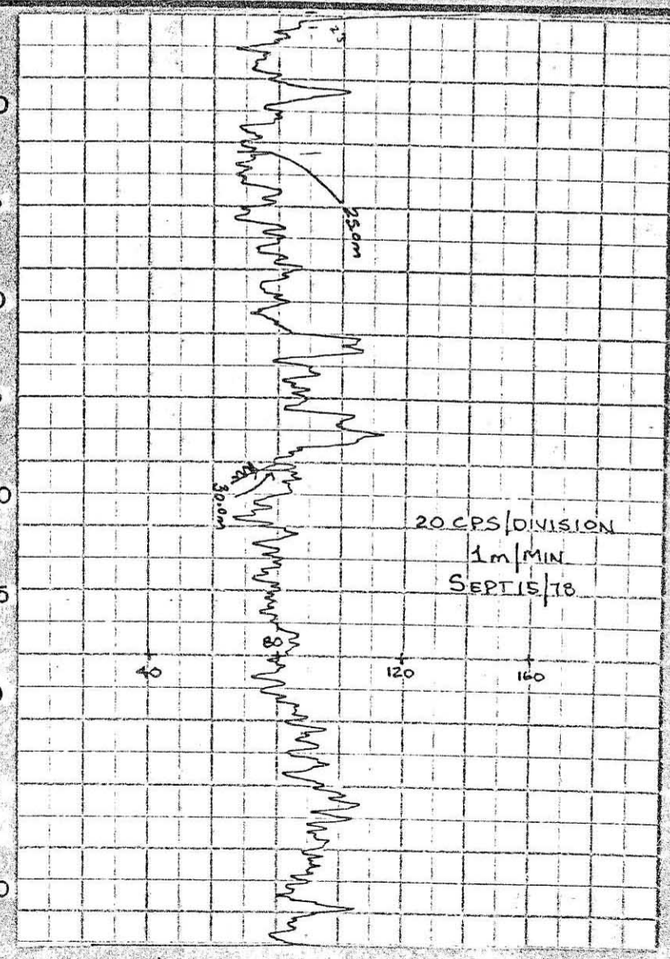
* - CPS - 120/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. 57 PAGE 2 OF 2

FOOTAGE	SLUDGE SAMPLE NO.	SLUDGE WEIGHT LBS	SLUDGE CPS*	SLUDGE ppm U	SLUDGE ppb Au	CORE SAMPLE NO.	CORE % RECOV.	CORE CPS*	CORE ppm U	CORE ppb Au	HOLE DEPTH ft.	DESCRIPTION
80											80	QUARTZ FELDSPAR PORPHYRY eTqfp SEE PAGE 1 FOR DESCRIPTION.
85						12409	100	110/90	2.0		85	
90											90 91	STRONG GOETHITE ON VERTICAL FRACTURE
95						12410	82	110/90	3.0		93 95	TRACES PYRITE AND SPECULARITE
100											100	
105						12411	95	110/85	2.5		105	
110											110	
115						12412	78	105/90	3.0		115	STRONG GOETHITE ON FRACTURE - MINOR PYRITE
120											119 120 121	STRONG INDIGENOUS GOETHITE ON FRACTURES.
125						12413	68	110/85	3.0		125	CORE FRACTURING IMPROVES, DENSITY 1/1-2 FT. WITH ARGILLIC ALTERATION BETTER DEVELOPED WEAK GOETHITE ON FRACTURES
130											130	
135											133 135	END OF HOLE - ABANDONED DUE TO LOST CIRCULATION
140											140	HOLE LOST CIRCULATION AT 58', STRONG VIBRATIONS IN RODS. HOLE ABANDONED WHEN BIT BURNED IN.
145											145	
150												

MOUNT SOPRIS GAMMA PROBE LOG



* - CPS - 120/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX RGS 1S1 (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT-VENTURE SURPRIZE CLAIMS, YUKON 1978

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS *	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS *	ppm U	ppb Au	HOLE DEPTH ft
5											5
10	A1744	3		3.0							10
15	A1745	8		6.0		12414	14	100/90	2.5		15
20	A1746	3		5.0							20
25	NO SLUDGE RECOVERY					12415	32	100/90	2.5		25
30	A1747	6		5.0							30
35	NO SLUDGE RECOVERY					12416	62	100/85	3.5		35
40											39
45						12417	63	100/90	4.0		45
50											50
55						12418	62	100/90	3.0		55
60	A1749	3		5.0							60
65	NO SLUDGE RECOVERY TO END OF HOLE					12419	47	100/90	3.0		65
70											71.5
75						SEE PAGE 2					

HOLE COLLARED AT 1030 S, 50 E
HOLE NO. S8 PAGE 1 OF 2

DESCRIPTION

AZ: 352° DIP: -50°

QUARTZ FELDSPAR PORPHYRY

eTqfp

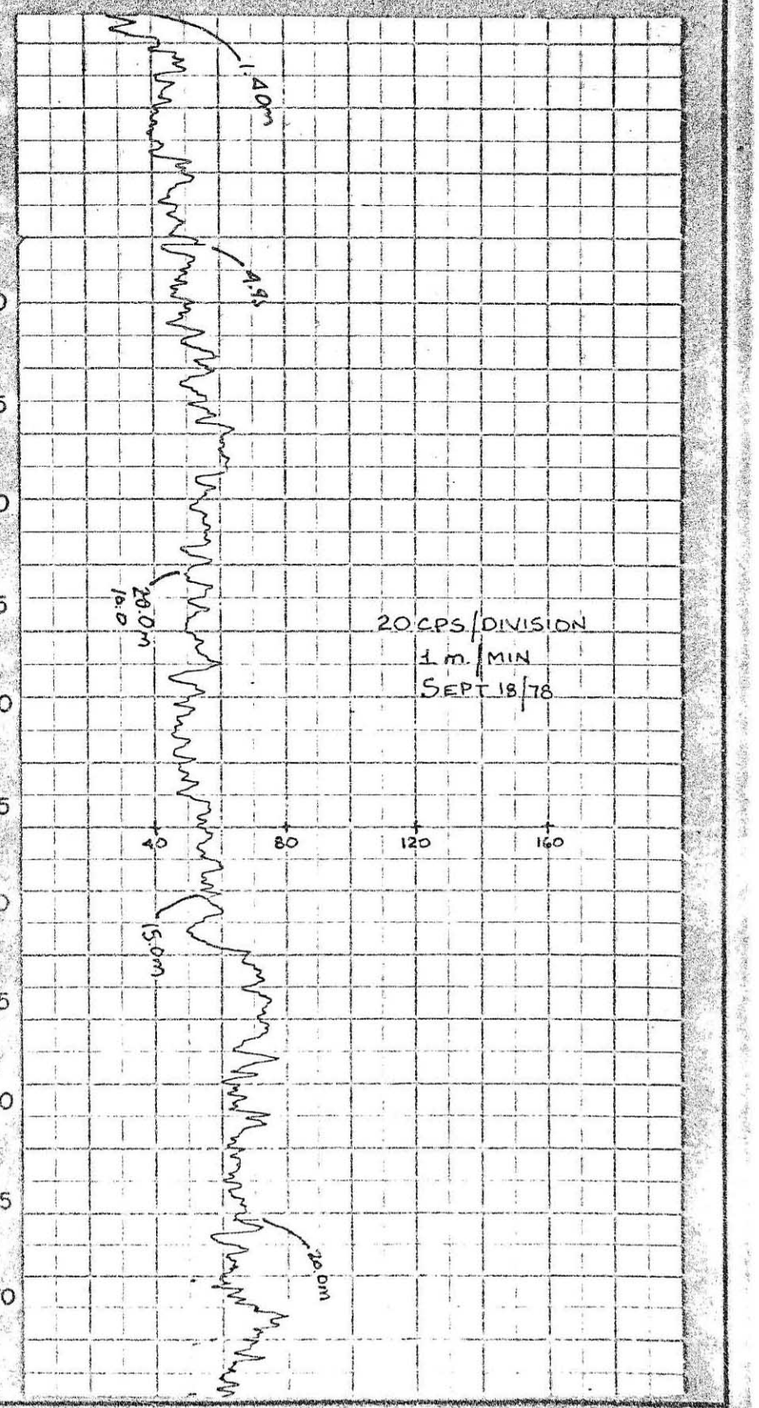
LIGHT COLORED SMOKY QUARTZ (10-15%) AND FELDSPAR (15-20%) FINE-MEDIUM GRAINED PHENOCRYSTS IN AN APHANITIC-MICROCRYSTALLINE MATRIX WITH FINE BLACK SPECKLING. CHLORITIZED HORNBLENDE AND BIOTITE PHENOCRYSTS MAINLY ALTERED TO CLAY. HIGHLY FRACTURED - DENSITY 6-12/FT. FRACTURES AT LOW ANGLE TO CORE AXIS. MINOR INDIGENOUS AND FAIR EXOTIC GOETHITE ALONG FRACTURES. FAIR SUPERGENE ALTERATION ALONG FRACTURES

39 — FRACTURING WEAKENS DENSITY 4/FT.

SAMPLE NO.	PPM Sn
12414	7
12415	4
12416	5
12417	10
12418	3
12419	3

71.5 — CONTACT 50° - SHEARED AND CHILLED DIKE - INTENSE ARGILLIC ALTERATION

MOUNT SOPRIS GAMMA PROBE LOG



* — CPS — 120/100 — COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S9 PAGE 2 OF 2

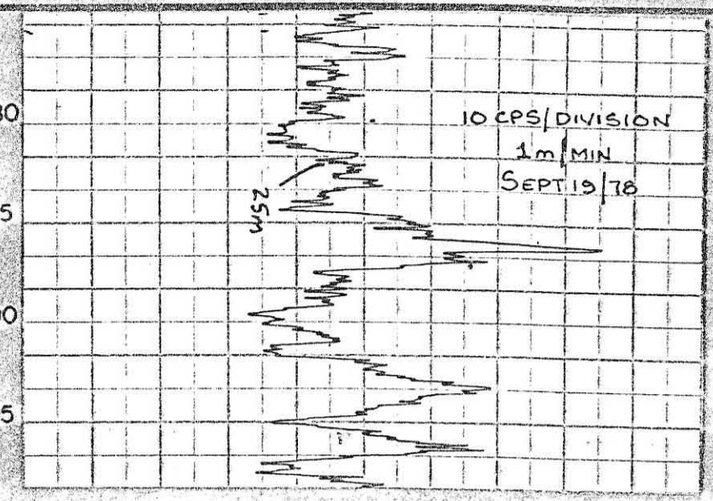
ANGLE FOLIATION TO CORE AXIS

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS *	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS *	ppm U	ppb Au	HOLE DEPTH ft	DESCRIPTION
											77	TRACE DISSEMINATED PYRITE
80	A1989	3	220/220	7.0		12435	20	95/90	2.0	<5	80	
	A1990	2½	230/220	7.0							82	STRONG 0.1FT FRACTURE JAROSITE
85						12436	30	90/90	4.5	<5	85	
	A1991	19	116/110	6.0								
90						12437	20	90/90	1.5	<5	90	
	A1992	6	110/100	6.5							92	PYRITE IN QUARTZ VEIN
95											95	
	A1993	35	110/100	6.5		12438	8	85/85	0.5	<5		
100											100	
	A1994	4½	110/110	7.0		12439	19	90/90	0.5	<5		
105	A1995	6	110/110	4.5							105	
											107	END OF HOLE - ABANDONED WHEN CORE BARREL STUCK IN HOLE
110											110	
115											115	
120											120	
125											125	
130											130	
135											135	
140											140	
145											145	
150												

CHLORITE SCHIST

SEE PAGE 1 FOR DESCRIPTION

MOUNT SOPRIS GAMMA PROBE LOG



* - CPS - 120/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE — SURPRIZE CLAIMS, YUKON 1978

HOLE COLLARED AT 00 S, 00 E

AZ: VERT. DIP: -90° DIP: -90° ANGLE FOLIATION TO CORE AXIS.

HOLE NO. S9 PAGE 1 OF 2

FOOTAGE	SLUDGE SAMPLE NO.	WEIGHT LBS	CPS *	ppm U	ppb Au	CORE SAMPLE NO.	% RECOV.	CPS *	ppm U	ppb Au	HOLE DEPTH ft
5											5
10	A1976	5	220/220	7.0							10
15	A1977	4	220/210	9.0		12423	10	90/90	5.5	<5	15
20	A1978	8	210/210	9.0		12424	8	85/85	1.0	<5	20
25	A1979	11	230/220	7.5		12425	12	90/90	2.0	<5	25
30	A1980	5½	230/210	8.0		12426	12	90/90	<0.5	<5	30
35	A1981	7½	220/220	12		12427	10	90/90	5.0	<5	35
40	A1982	2	215/215	7.0		12428	24	85/85	6.0	<5	40
45	A1983	6	230/220	9.0		12429	20	85/85	5.0	<5	45
50	A1984	8	220/220	15		12430	16	90/90	0.5	<5	50
55	A1985	7	220/220	6		12431	18	90/90	0.5	<5	55
60	A1986	5	220/220	8.5		12432	5	90/90	2.5	<5	60
65	A1987	5½	230/220	8.5		12433	30	85/85	1.5	<5	65
70	A1988	3½	220/220	8.5		12434	20	90/90	2.5	<5	70
75											

DESCRIPTION

SCHIST-GNEISS UNIT-Psn
(KLONDIKE SCHIST)

CHLORITE SCHIST

85% OF RECOVERED CORE IS WHITE QUARTZ WITH OPEN FRACTURES AND CAVITIES WITH FAIR LINING OF GOETHITE. SCHIST WEAK TO TRACE JAROSITE ALONG FRACTURES.

CHLORITE SCHIST

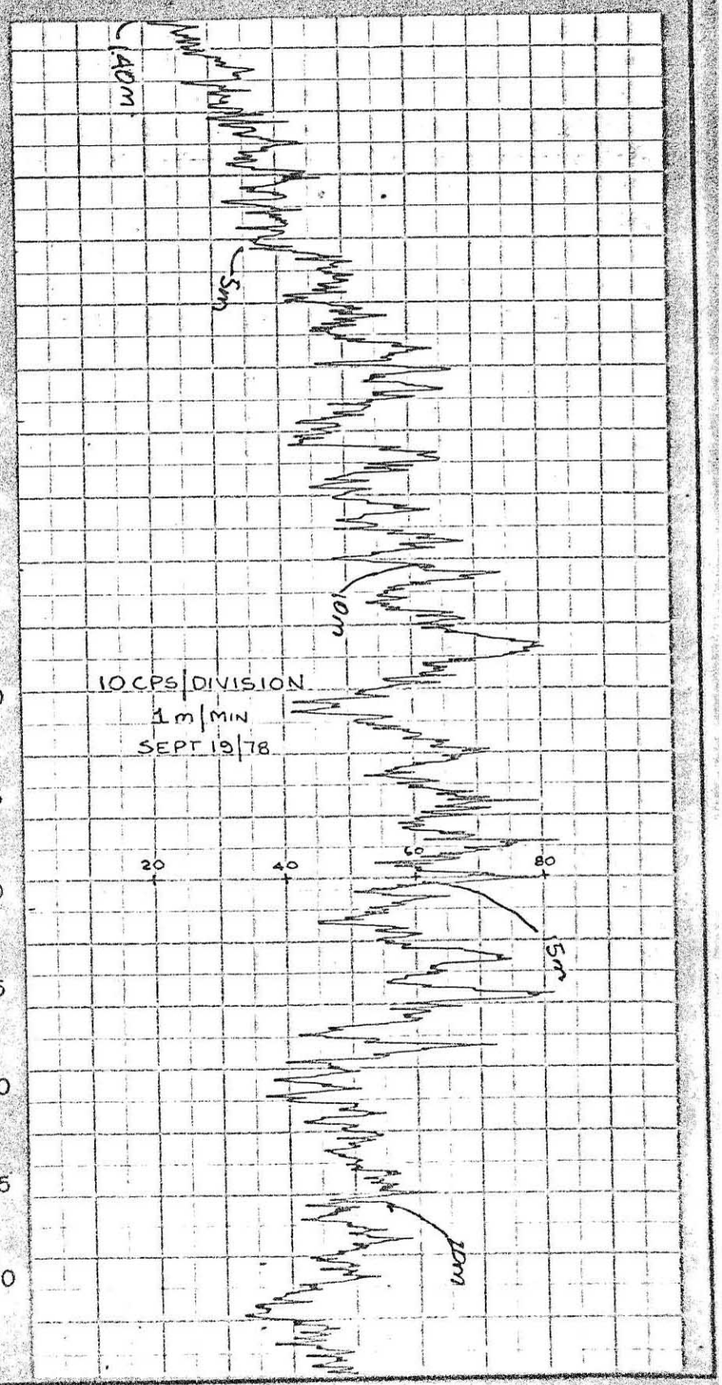
OCCASIONAL NARROW (<5mm) QUARTZ RICH SECTIONS. FAIR - OCCASIONAL UP TO 0.7 FT LENSES OF WHITE QUARTZ. WEAK EXOTIC JAROSITE ALONG FOLIATION AND FRACTURES. RARE UNLINED CAVITIES.

WHITE QUARTZ - 0.7 FT HOST FT HIGHLY FRACTURED FAIR CAVITIES WITH LIGHTH LIGHT LINING OF BRIGHT YELLOW JAROSITE JAROSITE

OCCASIONAL GRAPHITIC BANDS, INCREASING JAROSITE

FAIR - MODERATE EXOTIC FRACTURE JAROSITE AND WEAK - FAIR INDIGENOUS DISSEMINATED JAROSITE LINING - MASSIVE FILLING CAVITIES

MOUNT SOPRIS GAMMA PROBE LOG



* — CPS — 100/100 — COUNTS PER SECOND OVER BACKGROUND USING 'SCINTREX BGS ISL (43.4 cc CRYSTAL CRYSTAL) SCINTILLOMETER

DRILL HOLE LOG UKON JOINT VENTURE SURPRIZE CLAIMS, YUKON 1978

HOLE NO. S8 PAGE 2 OF 2

FOOTAGE	SLUDGE SAMPLE NO.	SLUDGE WEIGHT LBS	SLUDGE CPS*	SLUDGE ppm U	SLUDGE ppb Au	CORE SAMPLE NO.	CORE % RECOV.	CORE CPS*	CORE ppm U	CORE ppb Au	HOLE DEPTH ft
80						12420	74	100/90	3.0		80
85						12421	85	95/85	3.5		85
90						12422	71	100/90	N.S.		90
95											95
100											100
105											105
110											110
115											115
120											120
125											125
130											130
135											135
140											140
145											145
150											

DESCRIPTION

DIKE - INTENSE ARGILLIC ALTERATION

CONTACT 30-60° SHEARED AND CHILLED

CONTACT LOST

DIKE - INTENSE ARGILLIC ALTERATION

CONTACT LOST

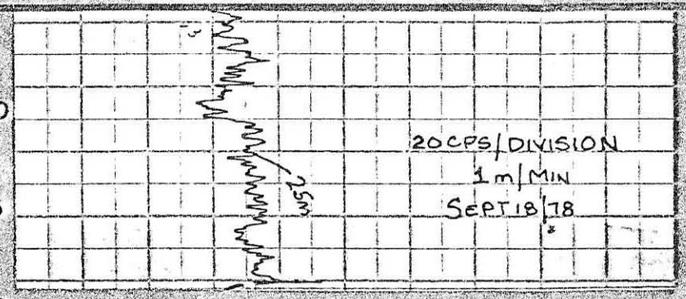
FRACTURE DENSITY INCREASES TO 6-12/FT

SAMPLE NO.	ppm 3N
12420	14
12421	3
12422	2

END OF HOLE - ABANDONED DUE TO LOST CIRCULATION

LOST CIRCULATION AT 35'. REAMED AND DROVE CASING TO 94'. HOLE ABANDONED DUE TO DIFFICULTY IN TURNING RODS AND LACK OF CIRCULATION

MOUNT SOPRIS GAMMA PROBE LOG



* - CPS - 120/100 - COUNTS PER SECOND OVER BACKGROUND USING SCINTREX BGS ISL (43.4 cc CRYSTAL) SCINTILLOMETER