MAP NO.

95 D 5, 12
95 E 4, 105A 8,9

ASSESSMENT REPORT
PROSPECTUS
CONFIDENTIAL
OPEN FILE

DOCUMENT NO.: 092014
MINING DISTRICT: WATSON LAKE
TYPE OF WORK: Geology, Geochemistry
I.S.N. 134663

REPORT FILED UNDER: Noranda Exploration Co. Ltd.

DATE PERFORMED: 1975 June 10 to June 19, DATE FILED: December 1975

LOCATION: LAT.: 60°30'W AREA: Quartz Lake

LONG.: 127°58'W VALUE $:

CLAIM NAME & NO.: SOUTH NAHANNI 1-50;
QUARTZ 1-8;
STRAT 1-96

WORK DONE BY: J.E. Stockwell

WORK DONE FOR: Noranda Exploration Co. Ltd.

DATE TO GOOD STANDING	REMARKS: #3 MCMILLAN

Project 914 092014

95D/5, 12; 95E/4; 105A/8,9.

QUARTZ LAKE AREA

Geological/Geochemical

Reconnaissance

J.E. Stockwell December, 1975

95D/12, 95E/4, 105A8
95D/5, 105A9

P R O J E C T 9 1 4

QUARTZ LAKE AREA

GEOLOGICAL/GEOCHEMICAL RECONNAISSANCE

092014

J. E. Stockwell

December, 1975

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

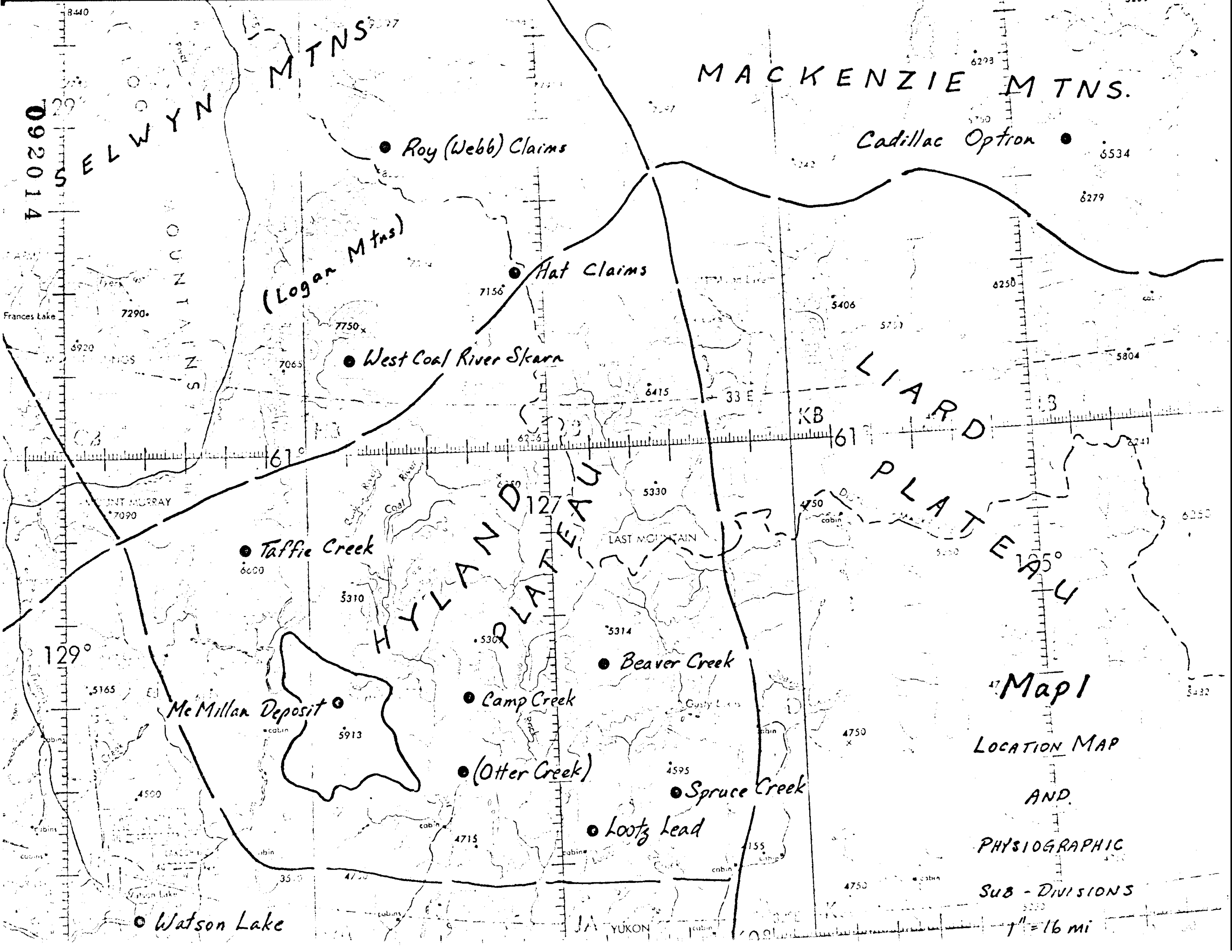
LIST OF ILLUSTRATIONS (CONT'D)

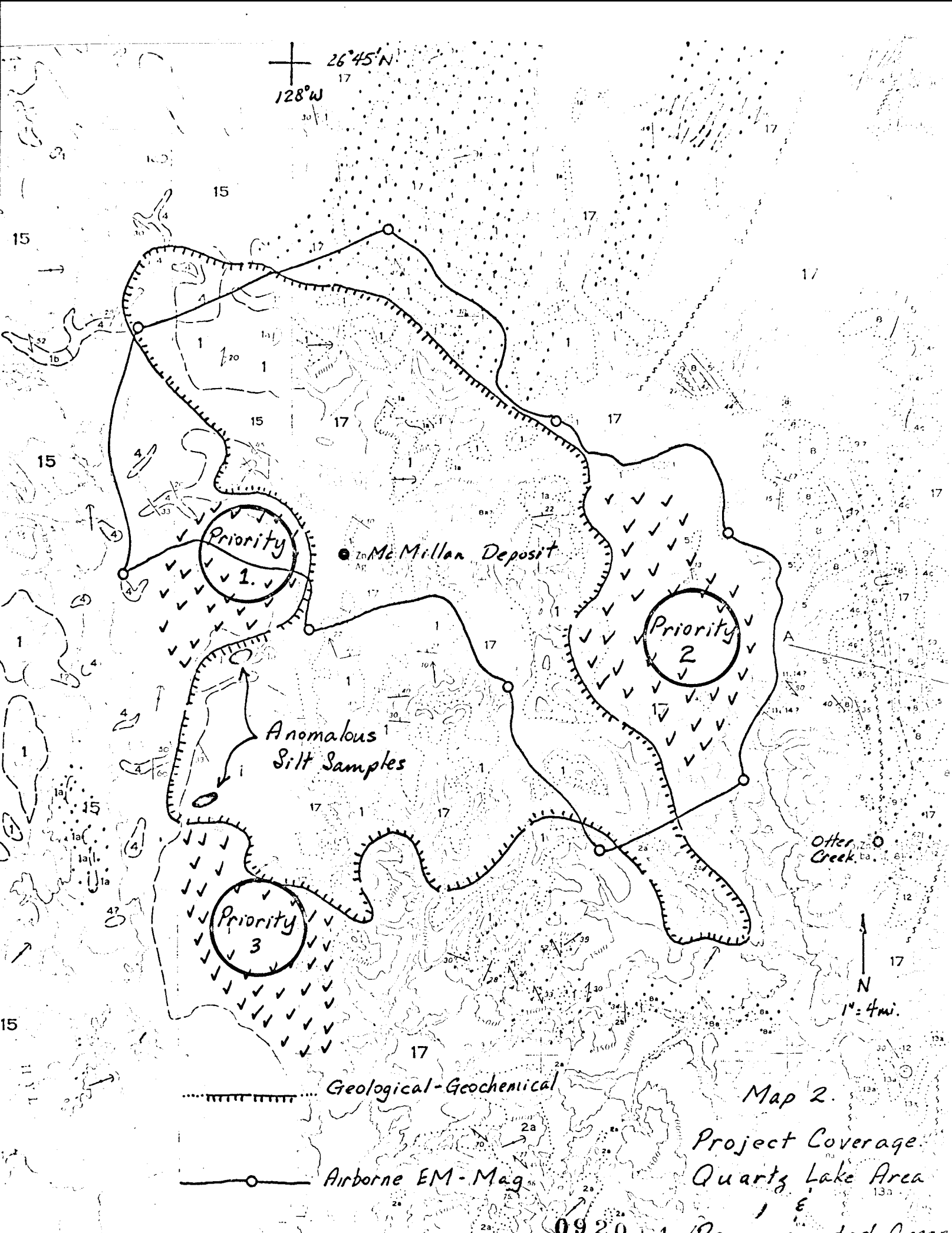
INTRODUCTION AND SUMMARY

The main project area, centred on Quartz Lake and the McMillan lead-zinc-silver deposit, is located 41 miles N.E. of Watson Lake, Yukon Territory. The project explored for additional McMillan style deposits in the immediate area, using reconnaissance prospecting, geochemistry and geophysics (EM-Mag) under geological control. Primary Follow-Ups (PFU's) were initiated on eight anomalous situations turned up by this and two earlier programmes. *In addition, two property examinations in the West Coal River and Flat River drainages were undertaken. During the course of the programme, light support was provided for both the 912 McMillan Option drill programme, and the 915 Cadillac Option.

Recommendations are made to extend reconnaissance coverage into three areas near Quartz Lake, which are underlain by Middle Hadrynian stratigraphy. Within the property, three areas are outlined for further work - in particular a strong soil anomaly on the west side of Mine Creek. Regionally, the Camp Creek, Beaver Creek and Lootz Lead PFU's have further work outlined for next season.

D. Pegg, 1971 Hyland River Reconnaissance 105A
W. Prescott, 1973 Geochemical Reconnaissance 95C, D, E


SELWYN MTNS
MACKENZIE MTNS.
(Logan Mtns)
MOUNTAINS
Roy (Webb) Claims
Cadillac Option
Hat Claims
West Coal River Skarn
LIARD PLATEAU
HYLAND PLATEAU
Taffie Creek
Beaver Creek
Camp Creek
McMillan Deposit
(Otter Creek)
Spruce Creek
Lootz Lead
Watson Lake
Frances Lake
LAST MOUNTAIN
Coal River
YUKON
61°
127°
129°
125°
Map I
LOCATION MAP
AND
PHYSIOGRAPHIC
SUB-DIVISIONS
1" = 16 mi


26°45'N
128°W
Priority 1.
McMillan Deposit
Priority 2
Anomalous Silt Samples
Priority 3
Otter Creek
N
1" = 4mi.
Geological-Geochemical
Airborne EM-Mag
Map 2.
Project Coverage.
Quartz Lake Area
Recommended Areas
092014

RECOMMENDATIONS

A. Quartz Lake Local Map 2, 3, 4.

Four areas around the McMillan deposit are recommended for further work outlined below:

1. Next Creek - Zinc, Molybdenum (Lead) anomaly.

   PFU coverage at head of drainage. Contour soil sampling may be necessary to locate the source if prospecting cannot. The exposure is very poor.

   Time (Man-Days): 6

2. Reconnaissance silting of Priorities 1, 2 and 3.

   Emphasis is on silting only because the exposure is very poor.

   Time (Man-Days)

   Priority 1: 20
   Priority 2: 30
   Priority 3: 16

   Immediate PFU's on any anomalous situation

   Alloted Time (Man-Days): 10

B. McMillan Property

Three areas within the property are recommended for

092014

further work. Refer to Maps 6, 7 and 8 (a)-(d).

1. Priority 1

   (a) Grid soil sampling, 200' centres, in area bounded by Mine Creek, L76N, L25W and L48N. (Refer to Maps 8 (a)-(d).) This will possibly define the extent of the lead-zinc soil anomaly encountered on the west side of the creek.

   NOTE: Blazed chain and compass lines could be used where grid lines are not cut.

   (b) Evaluation of the anomaly by a soil geochemist.

   (c) Further sampling, trenching or drilling based on area selected by geochemist.

   NOTE: The anomaly may be transported, hence the need for a soil geochemist.

2. Priority 2

   (a) Contour soil lines around the S.E. base of Little Mountain, and N.W. shoulder of Hump Ridge. The sporadic silt anomalies may originate in widely separated strata.

   (b) Soil test pits located in lowest flat areas beside the creeks to check the possible use of soils in the area.

NOTE: Alluvium/glacial drift/gravels etc. are expected here, but any useful soil horizon might be exploited. "Useful horizons" to be defined by soil geochemist.

(c) Subject to (b) - grid or recce soil lines in the area indicated, with immediate detail follow-up of any anomaly.

3. Priority 3 Low Priority

A possible extension of the Mine Group stratigraphy to the west is interpreted. The possibility would be reduced if an extension of the deposit is located near Priority 1. The possibility is weak at best, and work recommendations depend on results of work on Priority 1.

C. Regional PFU'S

Continued evaluation of the Camp Creek, Beaver Creek and Lootz Lead anomalies is required because of limited information obtained this year. The remaining PFU's are of no further interest.

1. Camp Creek 95D Time (Man-Days) 6

The area of interest has no exposure at all. A soil grid on the north side of Camp Creek is

recommended to define the anomalous area. Additional reconnaissance soil lines running east (down slope) from the crest of the ridge to the north are also suggested. A prominent air photo linear is located east of the ridge, and may have mineralization associated with it.

Grid: 2,000' x 2,000', samples at 400' centres. Present soil anomaly centred on south side, and grid oriented along the Watzit Claims location line.

2. Beaver Creek Low Priority 95D Time (Man-Days) 2

A single soil line located across the supposed Road River - Sunblood contact is recommended. It should indicate whether the high zinc soil values already obtained are related to the formations, as suspected, or to a single horizon.

3. Lootz Lead Low Priority 95D Time (Man-Days) 6?

Continued prospecting and soil sampling (to be defined) are needed on the south side of the valley to define the anomaly in that area.

D. Regional Property Examinations

1. Roy Group (Webb Group) - Silver, Lead, Zinc, 95E.

If the arsenic content is low (assay outstanding) the occurrence warrants further evaluation.

NOTE: The potential for more of the same style deposit in the area is good, so that prospecting outside the property should also be done.

If the arsenic content is high, consider the information obtained to date as valuable guidance for future prospecting in the area.

2. Hat Claims - Tungsten Skarn

An examination is recommended during late July or early August, when frost conditions are minimal. In particular, attention is directed to any possible fault dislocations of the exposed body. Samples examined were obviously fault breccia, and Canex's drilling produced no intersection - on the wrong side of a fault?

SETTING

The Quartz Lake area and Prescott's PFU's lie in the Hyland Plateau physiographic sub-division defined by Bostock (1946). The area is characterized by broad mountains with gently sloping shoulders and immature downcutting drainages, and lies almost entirely below timberline. Glaciation has accented the roundness of the topographical features, mantled ridges and choked the valleys with drift. Relief is 2,500' locally, with maximum elevations below 6,000'. Exposure is very poor - being 10% or less on ridges and restricted to occasional canyons in the valleys.

The remaining PFU's lie in the Logan Mountains, which have a dramatic mountainous relief of 3,000'+ and maximum elevations of 8,000'+. Exposure on the ridges is 100%, while the narrow, steep walled, U shaped valleys are choked with bush and glacial drift.

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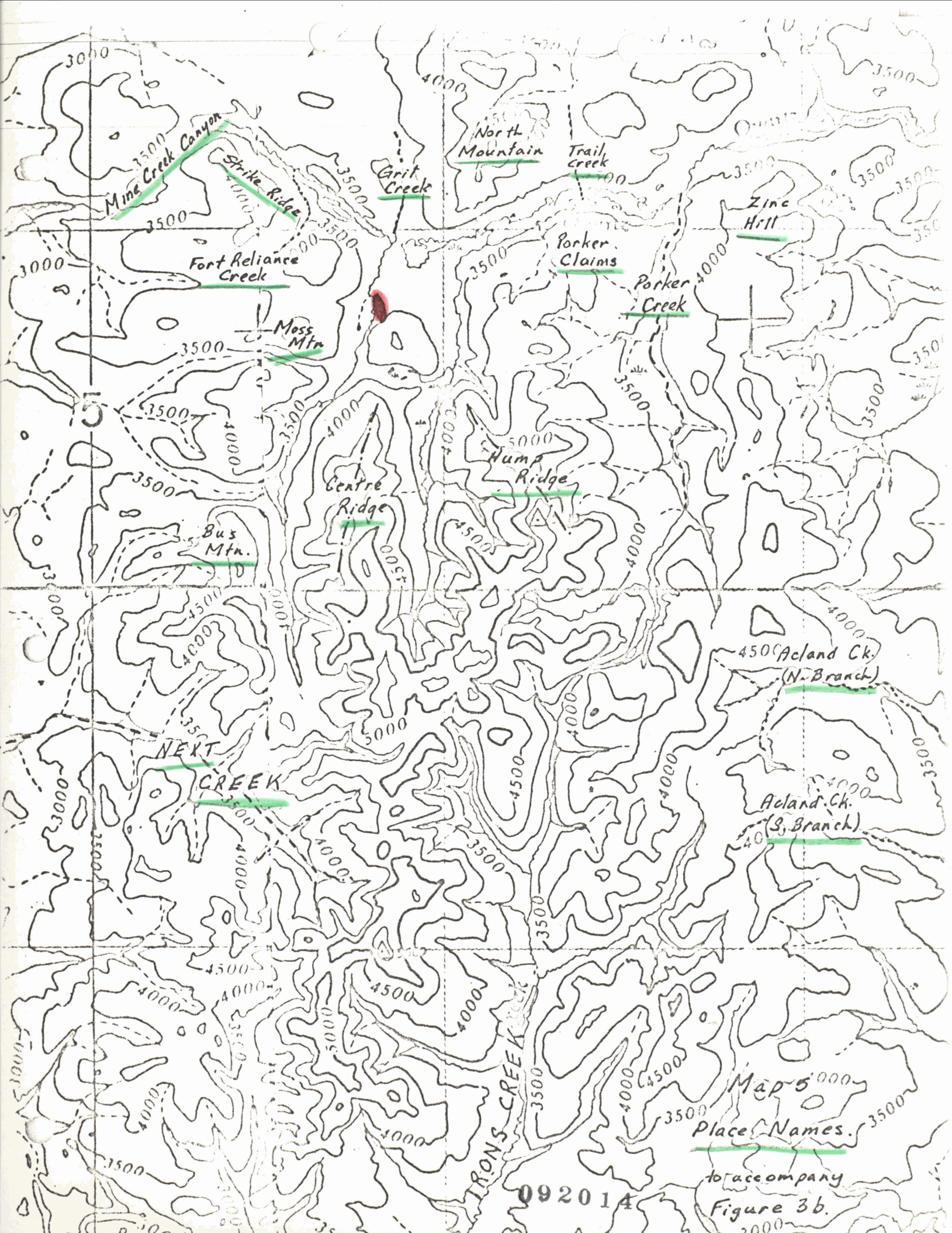

Mine Creek Canyon
Strike Ridge
Grit Creek
North Mountain
Trail Creek
Zinc Hill
Porker Claims
Porker Creek
Fort Reliance Creek
Moss Mtn.
Hump Ridge
Centre Ridge
Bus Mtn.
NEXT CREEK
Acland Ck. (N. Branch)
Acland Ck. (S. Branch)
IRONS CREEK
5
Map 5
Place Names.
to accompany
Figure 3b.
092014

DISCUSSION

A. Local Geology and Structure (See Map 3, Figure 1, 2)

1. Geology

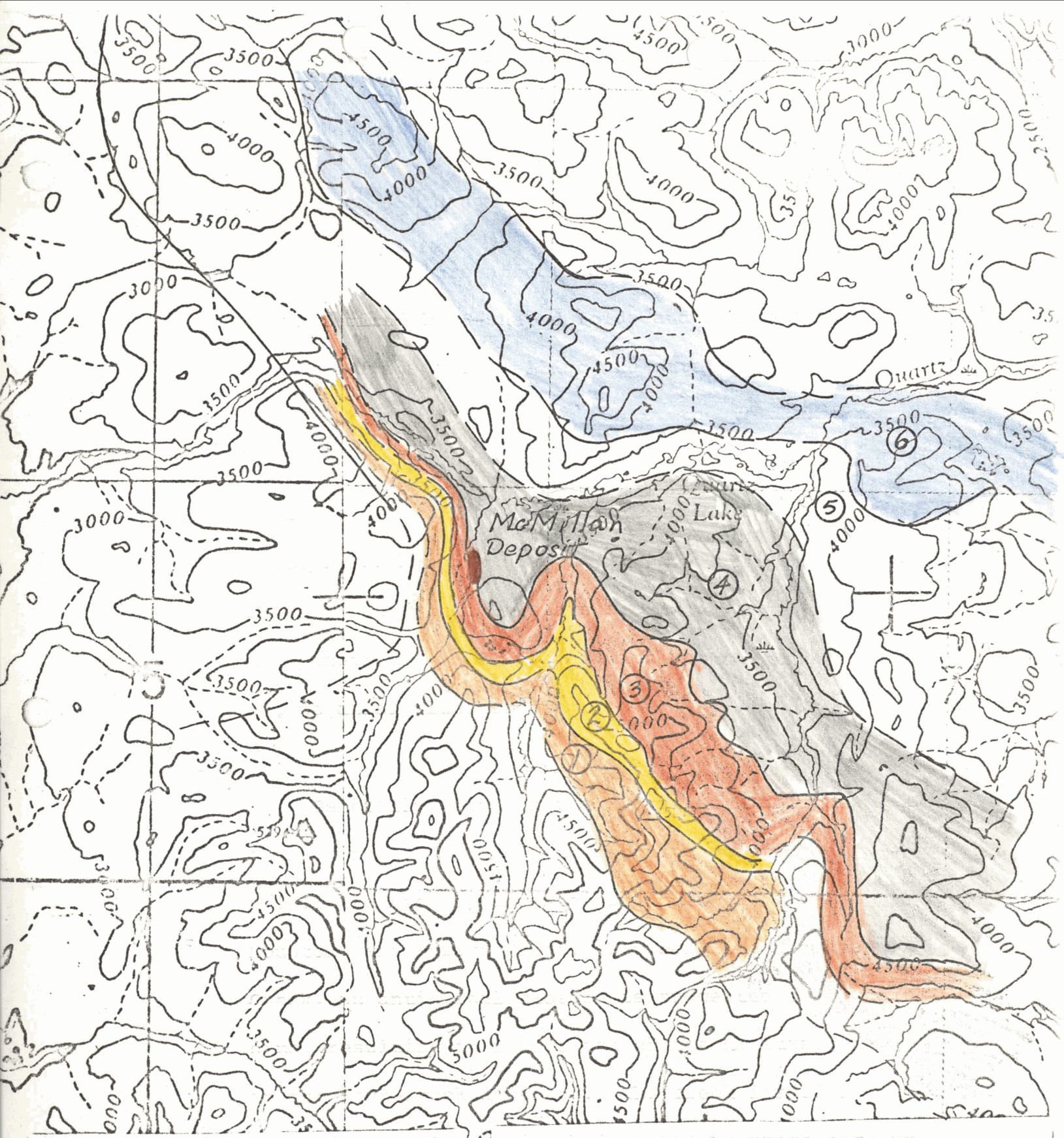
The project area is underlain by two distinct sedimentary units classified as Hadrynian (Unit 1) and Cambro-Ordovician (Unit 4) by the GSC (Maps 19 - 1966, 11 - 1968). The Hadrynian consists of quartzites, wackes, conglomerates, green argillites and carbonates. It is informally separated into three divisions by the presence of carbonates in the middle division only. An implied thrust fault zone relates these to the underlying Cambro-Ordovic black phyllitic shales, argillites, argillaceous quartzites and thin bedded grey-black limestones exposed in Mine Creek Canyon, and the western part of the map area.

The relative ages assigned to these units are questionable on the basis of this year's field work and lack of fossil age dates. From mapping air photo examination, and drilling results, the "Cambro-Ordovician" unit is in gradational contact with the overlying "Hadrynian". A thrust fault relationship is implied by

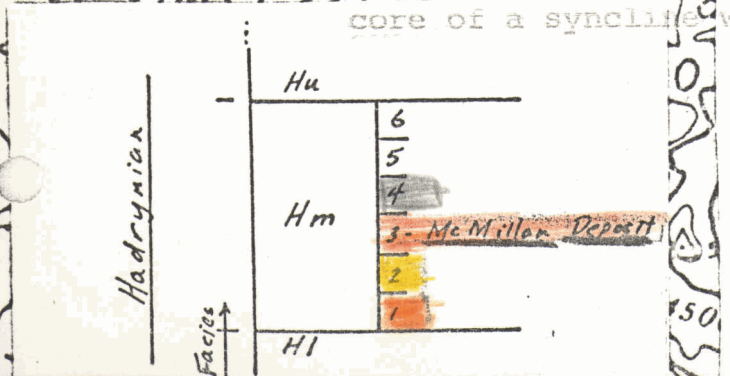
these ages to explain the succession, and has been invoked in earlier work on the property - i.e. the "Black Thrust" - to explain cataclastic zones lying parallel to the stratigraphy and axial plane cleavage. By viewing the obvious zones of slippage and graduation as simply stress-accommodation between competent/ incompetent bodies within the gradational contact zone, a thrust relation is no longer necessary.

The succession is now defined as an upright, gradational series of sediments which displays a facies change evidenced by carbonates and conglomerates, with minor slippage features developed between competent/ incompetent members during deformation.

An isolated area of metamorphosed Hadrynian strata is centred on Zinc Hill, east of Porker Creek. Zinc Hill is underlain by very coarsely crystalline, sugary marble and green micaceous schist. Garnet - (?) staurolite schist outcrops some two miles farther south east. The local extent of these metamorphosed rocks suggests that they lie within the aureole of an underlying intrusive body.



core of a syncline which brings the Hm units back up



N

1" = ½ mi

Map 7

Detail of Hadrynian Stratigraphy

Hm₁ - Hm6

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2. Structure - Folding

The structure affecting the map area is characterized by S-shaped folds and a penetrative axial plane cleavage parallelling the stratigraphy with an overall orientation of N50W/25NE, the fold axis is oriented 325/10 and is well developed in outcrop. Variation in the dip of this foliation from 10 - 60° N.E. accompanies broad undulations in the strike of the strata. These features are attributed to a second non-penetrative fold system with an axis oriented 010/10, and no axial plane cleavage.

Generally, dips in the Hadrynian Middle unit are shallow in the south east, becoming moderate at Hump and Centre Ridges, and steepening to 60°+ at McMillan Mountain and Strike Ridge. Between Mine Creek and Next Creek, an anticlinal closure is suggested by opposing dips, resulting in repetition of the Hm stratigraphy in the Next Creek drainage. The creek itself is the core of a syncline which brings the Hm units back up into a steep NE dip. The syncline plunges west and closes at the height of land to the south east. An adjoining pair of anti-synclines towards Lost Creek is

suggested by a few field observations and examination of air photos.

3. Structure - Faulting

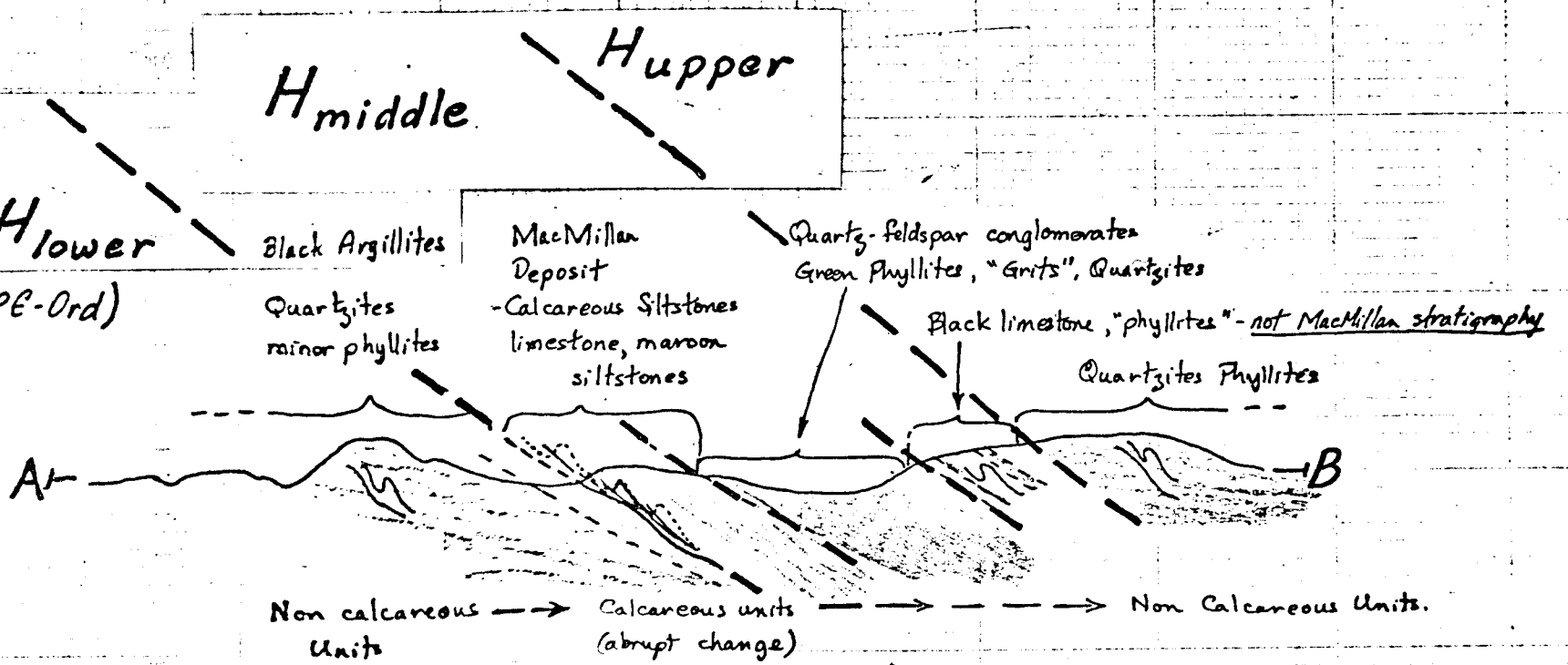
Prominent air photo lineations, interpreted as vertical faults, are restricted to N and N.E. trends. Similar trends are noted on Maps 19 - 1966 and 11 - 1968, with inferred displacements of several thousand feet (Toobally Fault, Rock River Fault, Otter Creek Fault). In the Quartz Lake area, the continuity of the Hm across the map sheet argues against similar large displacement faults. The lineations noted on Map 3 are considered to be small or zero displacement faults which do not noticeably affect the distribution of the Hadrynian units.

The possibility of a thrust fault between the "Hadrynian" and Cambro-Ordovician stratigraphy was discussed earlier in this section. It is worth noting that the "thrust-like" features, defined by thin cataclastic zones between the quartzites and less competent argillites, were observed in many outcrops throughout the section. These features parallel the

axial plane cleavage (N20W/25NE) and parallel or sub-parallel the bedding.

It is suggested that this feature is nothing more than simple accommodation of competent members (quartzites, thick limestones) by incompetent members (argillites) during the second deformation (010/10). The boundary layer between a quartzite and an argillite is subject to greater shear stress than either body. The result of the stress is extreme foliation and/or brittle deformation of the argillite at the boundary layer. Moving away from the interface, the competent body would appear unaffected, while folds in the incompetent body would become larger and slowly die out. This failure would obviously propagate along, and be largely controlled by the primary foliation.

The so-called "Black Thrust" is explained by this model. A boundary layer of thinly interbedded shale and quartzite between the "Footwall Quartzite" and overlying argillite has yielded in a brittle fashion to accommodate the stress. A large displacement as is implied by the word "thrust" is not apparent because granulation at the slip face is very coarse.



Note: Regional Dip Remains Constant
Structure Remains Constant

THESE LITHOLOGIES ARE NOT REPEATED BY THE STRUCTURE AT THIS SCALE

FIGURE 1
Section A-B

Local Structure observed
around MacMillan Deposit

Axial Plane 125/35 NE.

Scale: 1" = 2 miles

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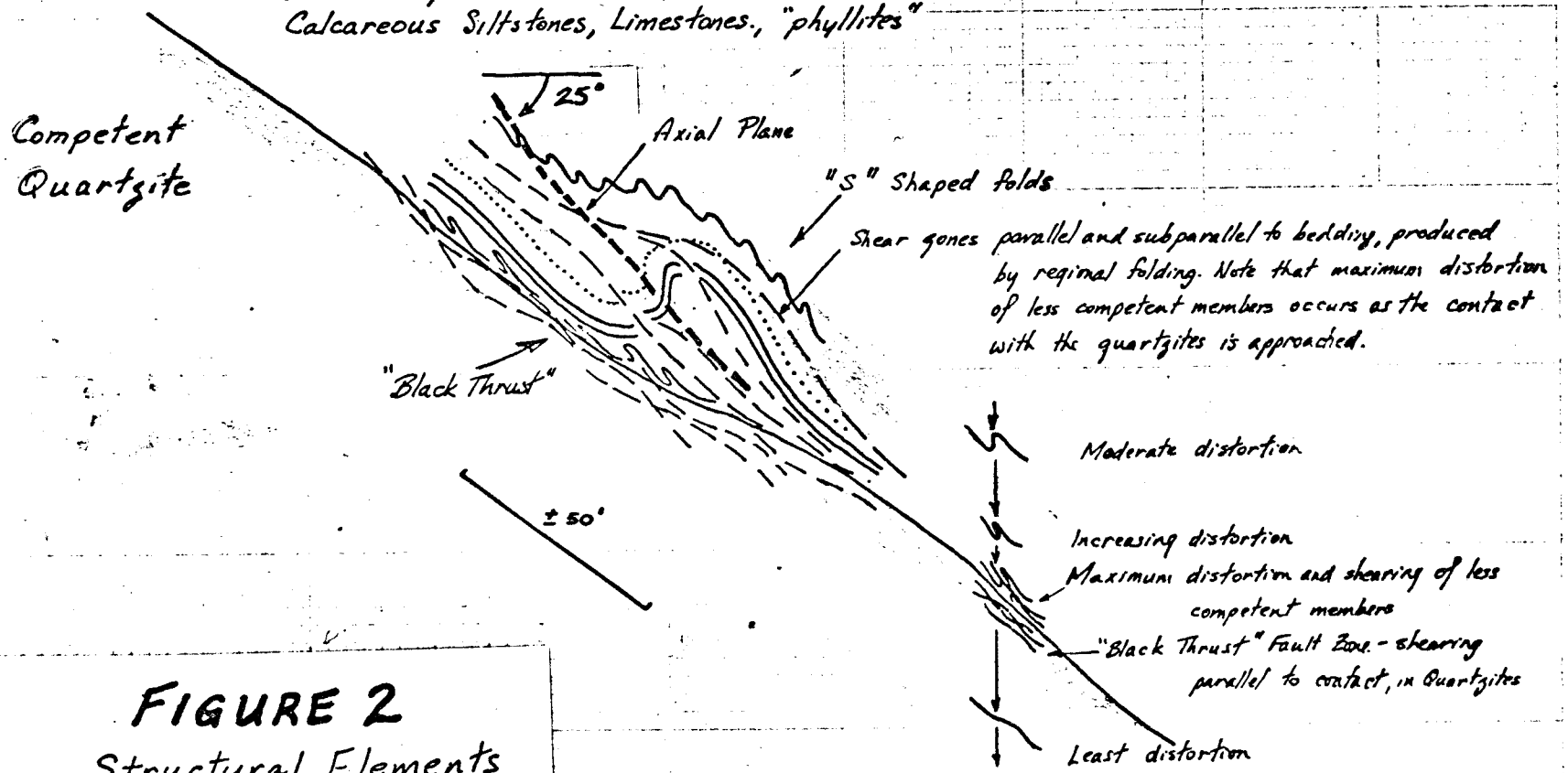


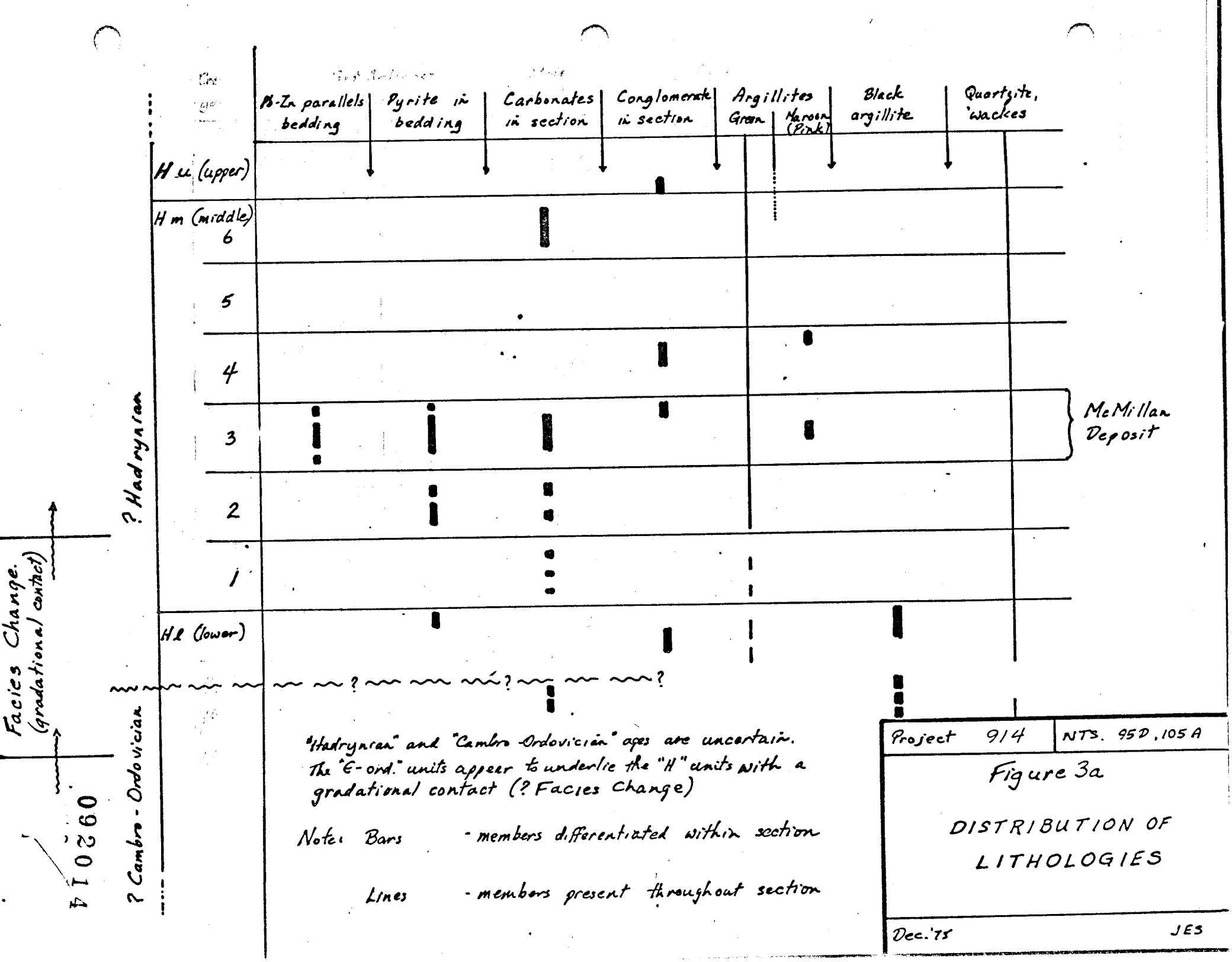
FIGURE 2

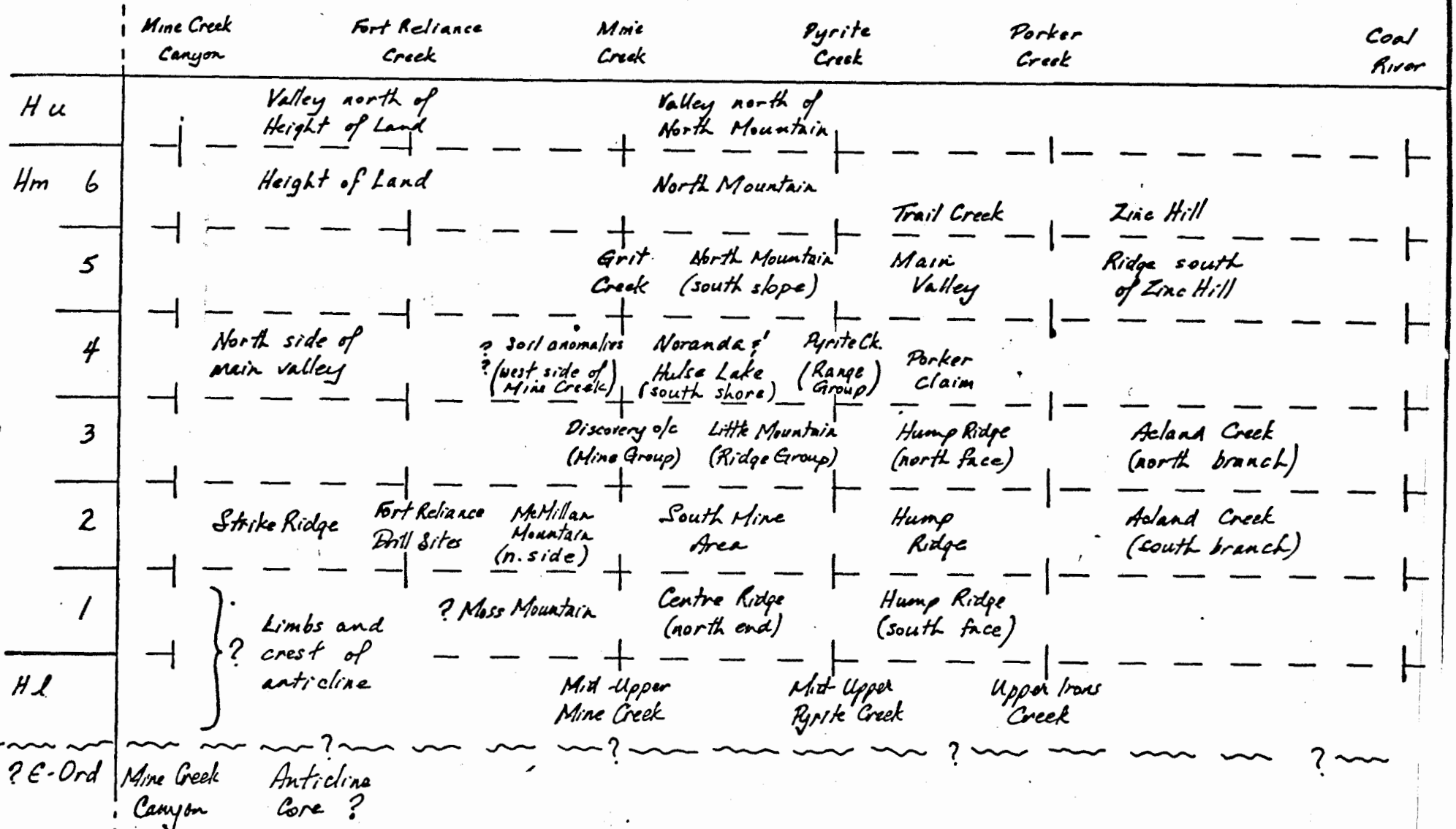
Structural Elements
Quartz Lake Area

Axis: 325/10

Axial Plane: N50W/25 NE

Scale: : Diagrammatic. Amplitude is approximate only


Pb-Zn parallels bedding
Pyrite in bedding
Carbonates in section
Conglomerate in section
Argillites
Green
Maroon (Pink)
Black argillite
Quartzite, wackes
Hu (upper)
Hm (middle)
6
5
4
3
2
1
Hl (lower)
McMillan Deposit
? Hadrynian
? Cambro - Ordovician
Facies Change (gradational contact)
? ? ? ?
"Hadrynian" and "Cambro-Ordovician" ages are uncertain. The "€-ord." units appear to underlie the "H" units with a gradational contact (? Facies Change)
Note: Bars - members differentiated within section
Lines - members present throughout section
Project 914
NTS. 95D, 105A
Figure 3a
DISTRIBUTION OF LITHOLOGIES
Dec. '75
JES
092O14



Note: a) Individual units (Hu, Hm3, etc) underlie the topographical features indicated.

b) Drainages at top provide convenient N-E trending division lines.

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Figure 3b
Topographic Relations of Hadrynian Middle Units

Dec. 75 JES

092014

Mylonitization, or at least fine granulation, would imply extreme displacement.

4. Recommended Areas Maps 2, 3, 4.

(a) Zinc-Molybdenum (Lead) anomalies located in Next Creek area. Prospecting and/or contour soil lines are needed to locate the sources. It is possible that the underlying "Cambro-Ordovician" stratigraphy is folded or faulted up into each area, but it should not be assumed.

NOTE: The exposure is very poor, so that float rock in the creeks may be the only "hard data" available.

(b) Priority 1 - This area may be related by N.W. trending anticlinal closure which relates the Mine Group stratigraphy with the exposures in the anomalous drainages.

(c) Priority 2 - The Hadrynian middle unit underlies this area. Zinc mineralization (Zinc Hill) and metamorphosed rocks of Hm within it while the Acland Creek anomaly occurs on its south side. The presence of an intrusive, evidenced by the

metamorphic rocks, adds the possibility of aureole effects within the favourable horizon.

(d) Priority 3 - The possibility of a structural repetition of McMillan stratigraphy, which occurs in the north west end, weakly recommends this area. The structure should be checked in the field before committing the recommended geochemical coverage.

B. McMillan Property

1. Geology and Mineralization. See Maps 6, 7, Figure 3 the Geological Report by G. Belik (in Appendix).

The McMillan deposit consists of approximately one million tons of ore grading 1.6 oz./T Ag, 4.1% Pb and 8.3% Zn. Galena, sphalerite and pyrite apparently replace one or more horizons of limestone and calcareous argillite (Siltstone).

Associated minerals identified to date include arsenopyrite, tetrahedrite, boulangerite and chalcopyrite. The ore horizon conforms to both the stratigraphy and structure of the host rocks, with the minor exception of redistribution along fractures and veinlets

crosscutting the ore.

The section containing the deposit is a rapid gradation from underlying pyritic black argillites and argillaceous quartzites (Belik's "Unit 1") upwards into green and minor pink argillites containing beds of massive pyrite, thin quartzite members and limestone horizons up to 12' thick (Belik's "Unit 2"). Immediately upsection (not in the core) minor conglomerates, wackes and arenaceous siltstones begin to appear.

The ore horizon is displaced by minor N and N.E. trending faults exposed in outcrop, but the detailed displacements are not known. Lateral displacements are suspected because of thin cataclastic zones or slippages occurring parallel or sub-parallel to the stratigraphy and primary axial plane cleavage (N50W/25NE). The most prominent of these zones - the "Black Thrust" has attained legendary eminence because it occurs in most of the drill holes on the property. It was used as the cut-off signal since it is confined to the gradational contact between the black and green argillites and underlies the ore zone. (Refer to "A-3 - Faulting" for discussion.)

The orebody apparently has an alteration halo consisting of green siltstone produced from pink argillite by alteration of hematite to pyrite. The alteration reported (Belik) is up to 300' thick, grading upwards into a banded pink and maroon siltstone representing weakly and entirely unaltered siltstones.

An attempt to relate the Hm stratigraphy within the property to local geology is presented on Maps 6 and 7. Important points to bear in mind are that the individual members are laterally discontinuous within each subdivision (H, H_2 etc.) and that large displacement thrust faults or vertical faults are not present to affect the stratigraphy.

It was not within the scope of this project to provide a thesis-like study of the deposit. However, during the course of the summer, several observations were made which provoked discussion about a syngenetic-sedimentary vs replacement origin for the dposit. The difference would affect exploration ideas in the area.

The observations are summarized in the Appendix, with occasional clarification of the interpretations involved.

2. Recommended Areas

Three areas within the McMillan Property are recommended for futher work.

(a) Priority 1 Maps 4, 8a, b, c, d, Figure 4.

A very strong zinc-lead silt anomaly (Map 4) continues on Mine Creek from the ore outcrop to the head of Mine Creek Canyon - some five miles. Its profile (Fig. 4) indicates a possible two-source origin for the results. The first is related directly to the ore outcrop, then is followed by a "break" on the profile. The second anomaly may be spatially related to a second occurrence of pyrite - stibnite located some 3,000' downstream. Reconnaissance and grid soil lines (Map 8c, d) indicate an open-ended anomaly both upslope and downstream from this outcrop.

The gently N.E. dipping members at the ore

outcrop cross the creek to the west side, and are exposed (with steep N.E. dips) occasionally on the N.E. slope of McMillan Mountain, above the pyrite-stibnite outcrop. Obviously the stratigraphy rolls into a steeper dip, and hopefully the enclosed ore horizon follows it. Hence, a soil grid is recommended (Map 8b) to test this possibility. The grid may have to be extended to the south, because of data observed on the Archer-Cathro maps, but that remains only a possibility.

It is further recommended that a soil geochemist be hired to evaluate the anomaly once it is defined. Complications related to permafrost and glacio-fluvial transport have not yet been properly considered, and very obviously may cause expensive problems if trenching or drilling is considered.

NOTE: Anomalous soils at L72N - 10E and 12E may be located on the flats in an area of known alluvially transported anomalies. Their location should be checked.

(b) Priority 2 - This area is weakly recommended by scattered zinc and zinc lead silt anomalies, and

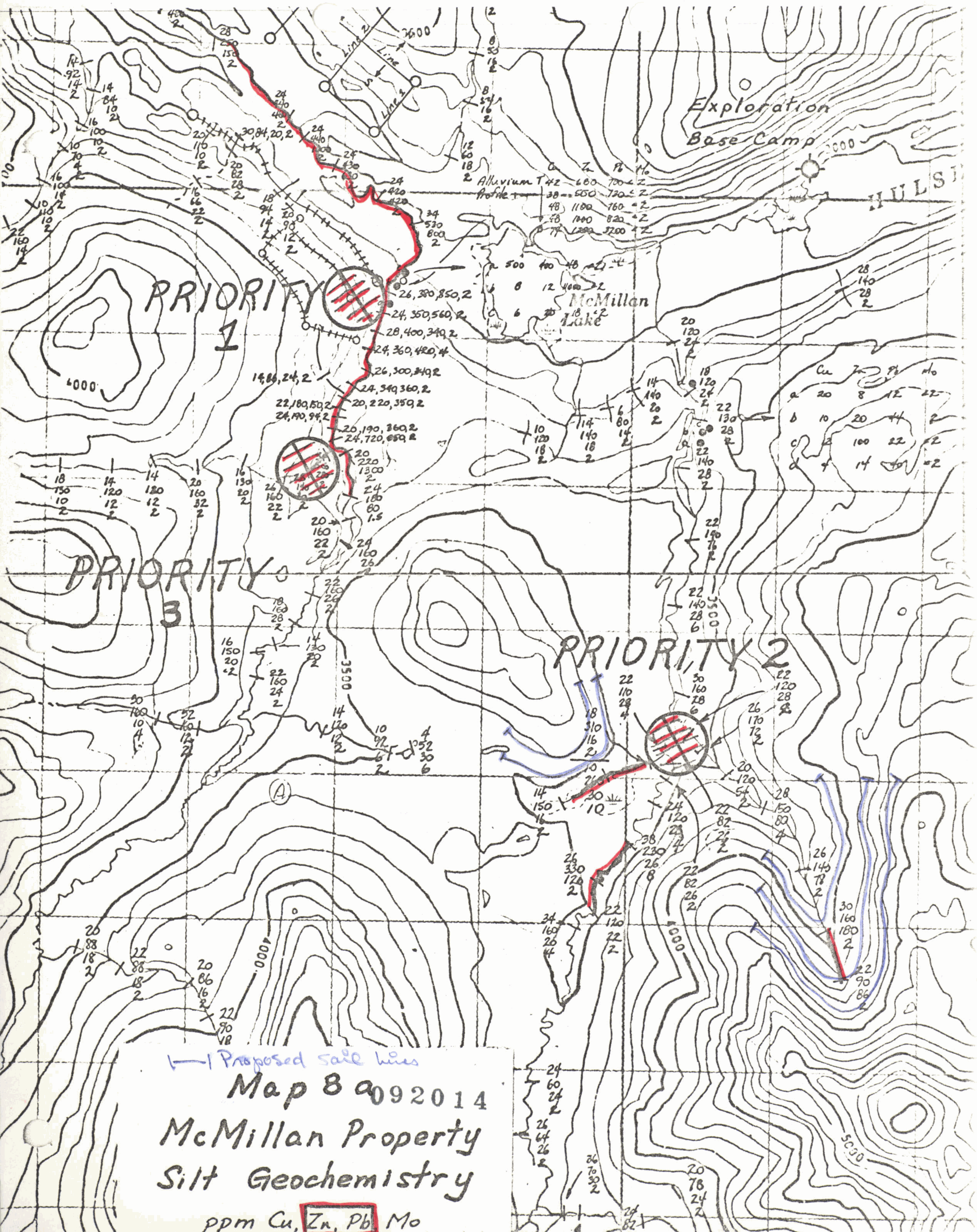
an academic amount of sphalerite located by Pete Bland in the creek draining Hump Ridge. Contour soil lines are first recommended as shown (Map 8a) to check for possible sources in this part of the stratigraphy.

NOTE: If any significant anomalies are located on this end of Hump Ridge, protect the area with additional claims along the strike of the strata - i.e. stake claims adjoining STRAT 74, 66, 68, 70, 72 on the east side.

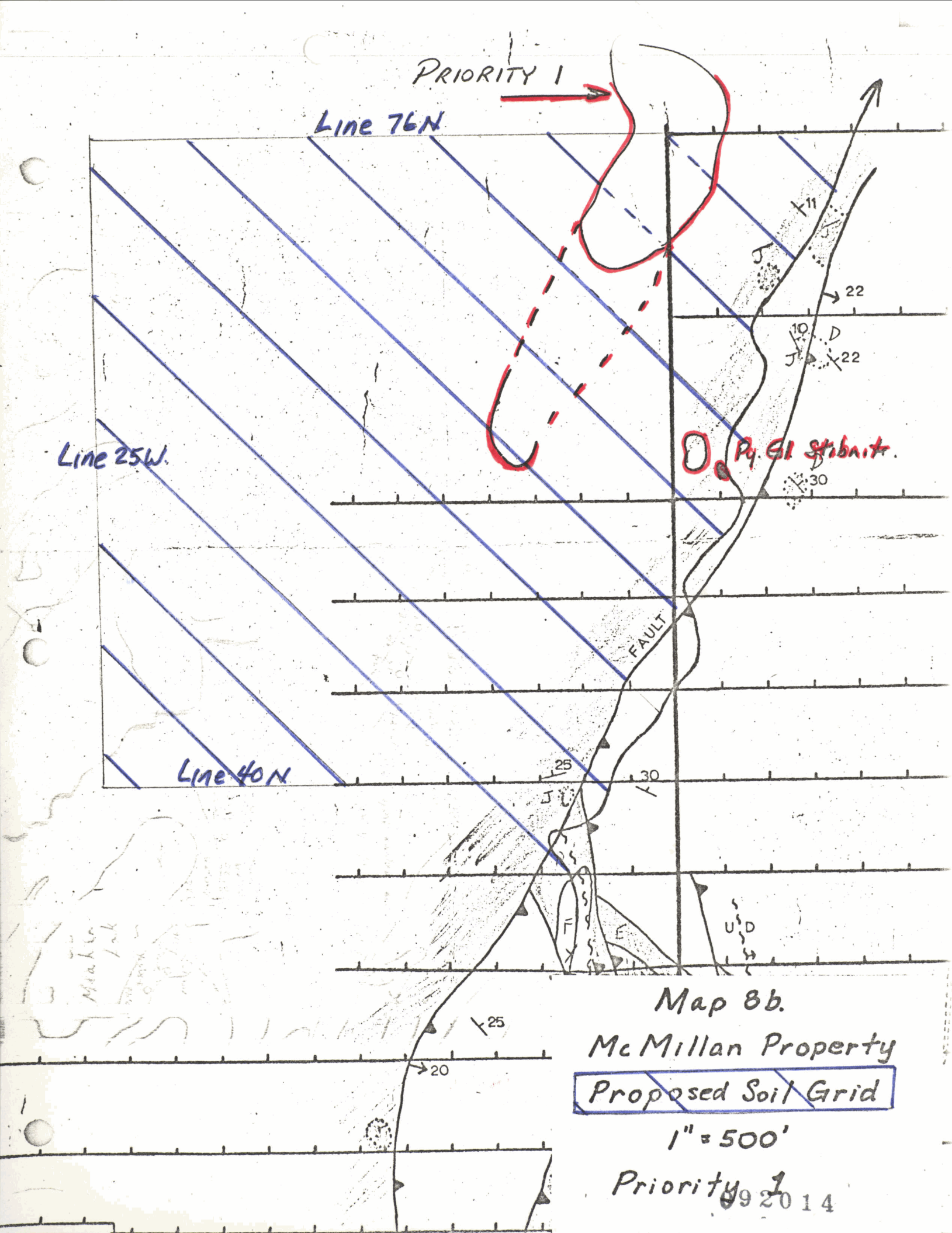
The flat areas bordering the three creeks might be soil sampled as long as the possibility of an un-transported soil horizon is first checked. Again, a soil geochemist would be useful in evaluating the area.

The flat terrain mentioned would also allow a gravity survey to be conducted, if its application is still considered useful.

(c) Priority 3 - A strong zinc-lead anomaly occurs at the mouth of Pink Creek and abruptly dies out upstream. The mineralized stratigraphy might:



Proposed soil lines
Map 8a 092014
McMillan Property
Silt Geochemistry
ppm Cu, Zn, Pb, Mo
PRIORITY 1
PRIORITY 2
PRIORITY 3
Exploration Base Camp
McMillan Lake
Alluvium Profile
Line 1
Line 2
Line 3
HULSE
Cu Zn Pb Mo



Map 8b.

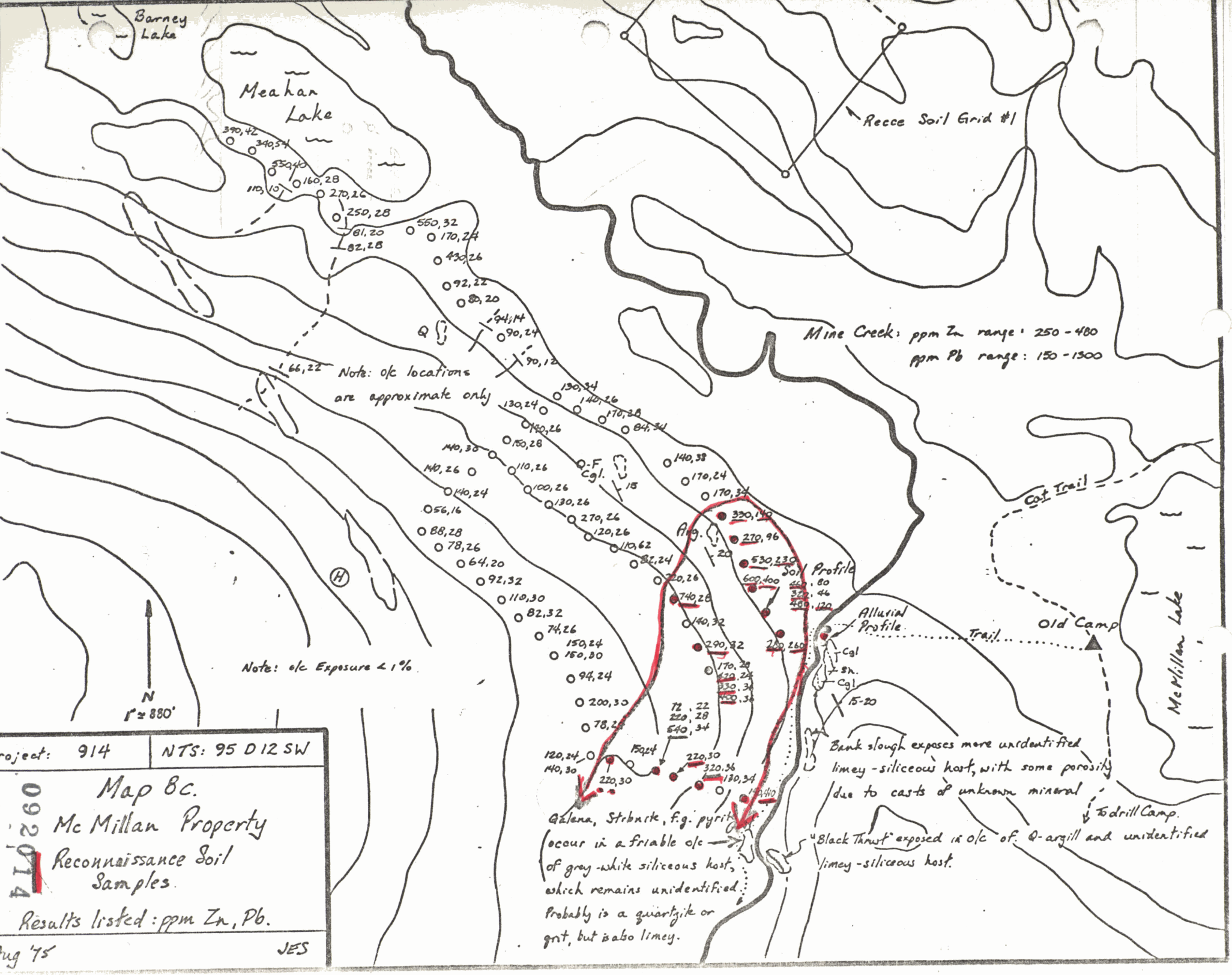
McMillan Property

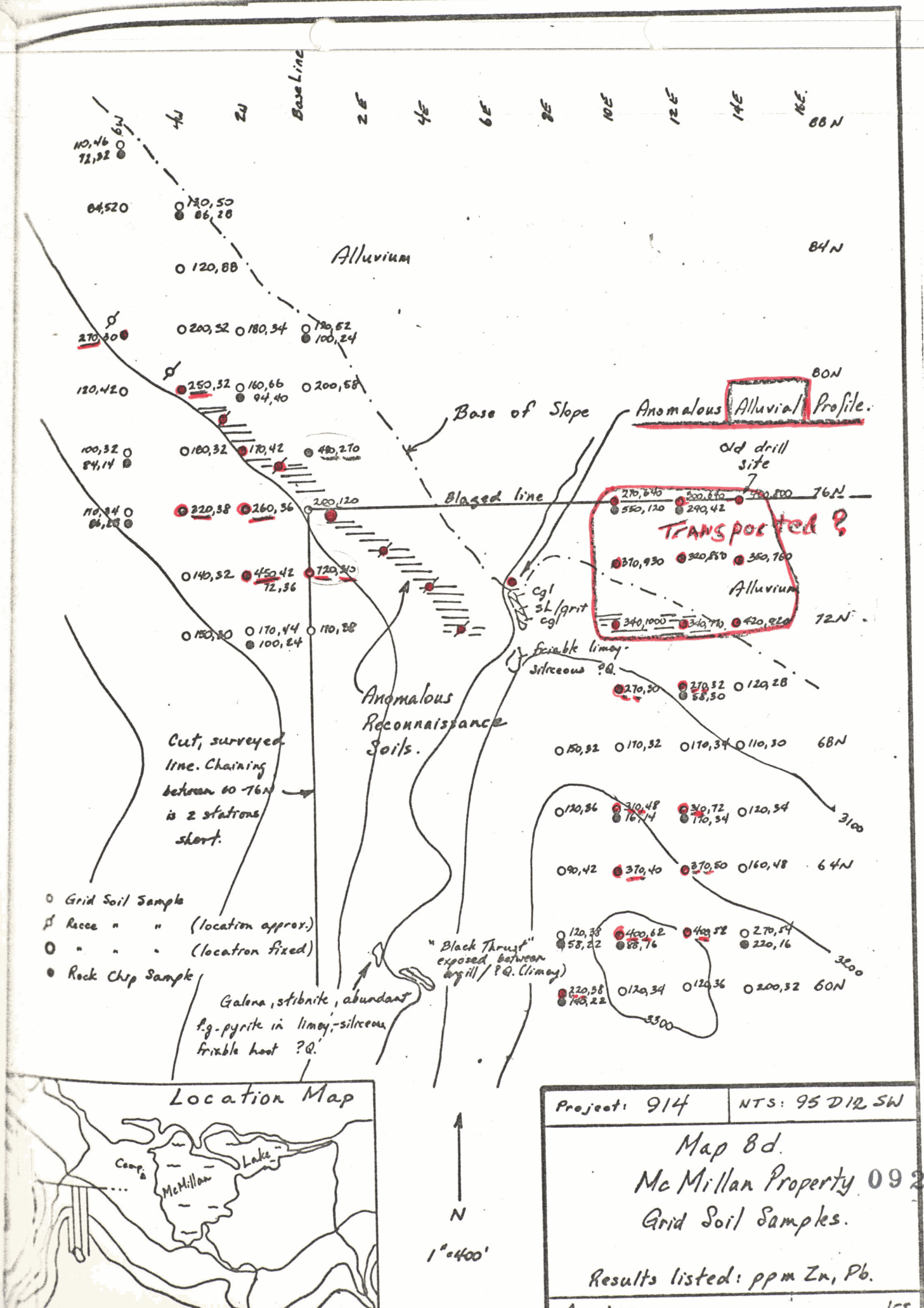
Proposed Soil Grid

1" = 500'

Priority 1

9 9 2 0 1 4


Barney Lake
Meahan Lake
Recce Soil Grid #1
Mine Creek: ppm Zn range: 250 - 480
ppm Pb range: 150 - 1300
Note: o/c locations are approximate only
Note: o/c Exposure < 1%
Q
Q-F Cgl.
Alg.
Soil Profile
Alluvial Profile
Cgl
Sh.
15-20
Cat Trail
Old Camp
Trail
McMillan Lake
To drill Camp.
Bank slough exposes more unidentified limey-siliceous host, with some porosity due to casts of unknown mineral
"Black Thrust" exposed in o/c of Q-argill and unidentified limey-siliceous host.
Galena, Stibnite, f.g. pyrite occur in a friable o/c of grey-white siliceous host, which remains unidentified. Probably is a quartzite or grit, but is also limey.
N
1" ≈ 880'
Project: 914
NTS: 95 D 12 SW
Map 8c.
Mc Millan Property
Reconnaissance Soil Samples
Results listed: ppm Zn, Pb.
Aug '75
JES
092O14


Base Line
4W
2W
2E
4E
6E
8E
10E
12E
14E
16E
88N
84N
80N
76N
72N
68N
64N
60N
Alluvium
Base of Slope
Anomalous Alluvial Profile.
old drill site
Blazed line
Transported ?
Alluvium
cgl
sl/grit cgl
friable limey-siliceous ?Q.
Anomalous Reconnaissance Soils.
Cut, surveyed line. Chaining between 60 76N is 2 stations short.
"Black Thrust" exposed between argill / ?Q. (limey)
Galena, stibnite, abundant f.g. pyrite in limey, siliceous friable host ?Q.
3100
3200
3300
Grid Soil Sample
Recce " "
" " (location approx.)
" " (location fixed)
Rock Chip Sample
Location Map
Camp
McMillan
Lake
N
1"=400'
Project: 914
NTS: 95 D12 SW
Map 8d.
Mc Millan Property
Grid Soil Samples.
Results listed: ppm Zn, Pb.
Aug '75
JES

092014

(i) be faulted off;

(ii) turn up on edge with a steep roll in the structure (see Priority 1) to the N.W.;

(iii) continue into the mountainside, so that the next sample site - the dead one - lies in the "hanging wall" of the deposit.

Evaluation of these possibilities would require drilling or trenching because of poor exposure. The area is considered a low priority, dependent on results of Priority 1.

C. Geochemistry

1. Silt Sampling Map 4, Figures 5, 6, 7, 8.

Some 650 silt samples were taken in the project area and analyzed for the content of copper, zinc, lead and molybdenum. Their histograms are presented in Figures 5 - 8. The background, threshold, and anomalous values were "eyeballed" from these curves and used to worm the data presented on Map 4.

092014

For comparison, these values and the calculated

values are presented below.

"Eyeballed Values"

	Cu	Zn	Pb	Mo
Background	0 - 32	0 - 199	0 - 49	0 - 4
Threshold	33 - 42	200 - 399	50 - 109	6 - 8
Anomalous	43+	400+	110+	10+

Calculated Values

	Cu	Zn	Pb	Mo
Mean (m)	19	105	27	1.3
Standard(s) Deviation	7	90	2.5	1.38
Background ($M+2_S$)	0 - 32	0 - 294	0 - 32	0-2.76
Threshold ($M+3_S$)	33 - 40	295 - 384	32 - 35	2.77-4.14
Anomalous	41+	385+	35+	4.14+

2. Soil Sampling

Soil samples were taken with as much care in selecting the "B" Horizon as possible. However, not all pits had B horizons developed or sampleable due to perma frost or obvious transported material in the profile. Consequently the results may be misleading, and should be checked on-site by a soil geochemist before any expensive follow-ups are begun.

3. Rock Geochemistry

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Rock chip samples taken on a routine basis in the

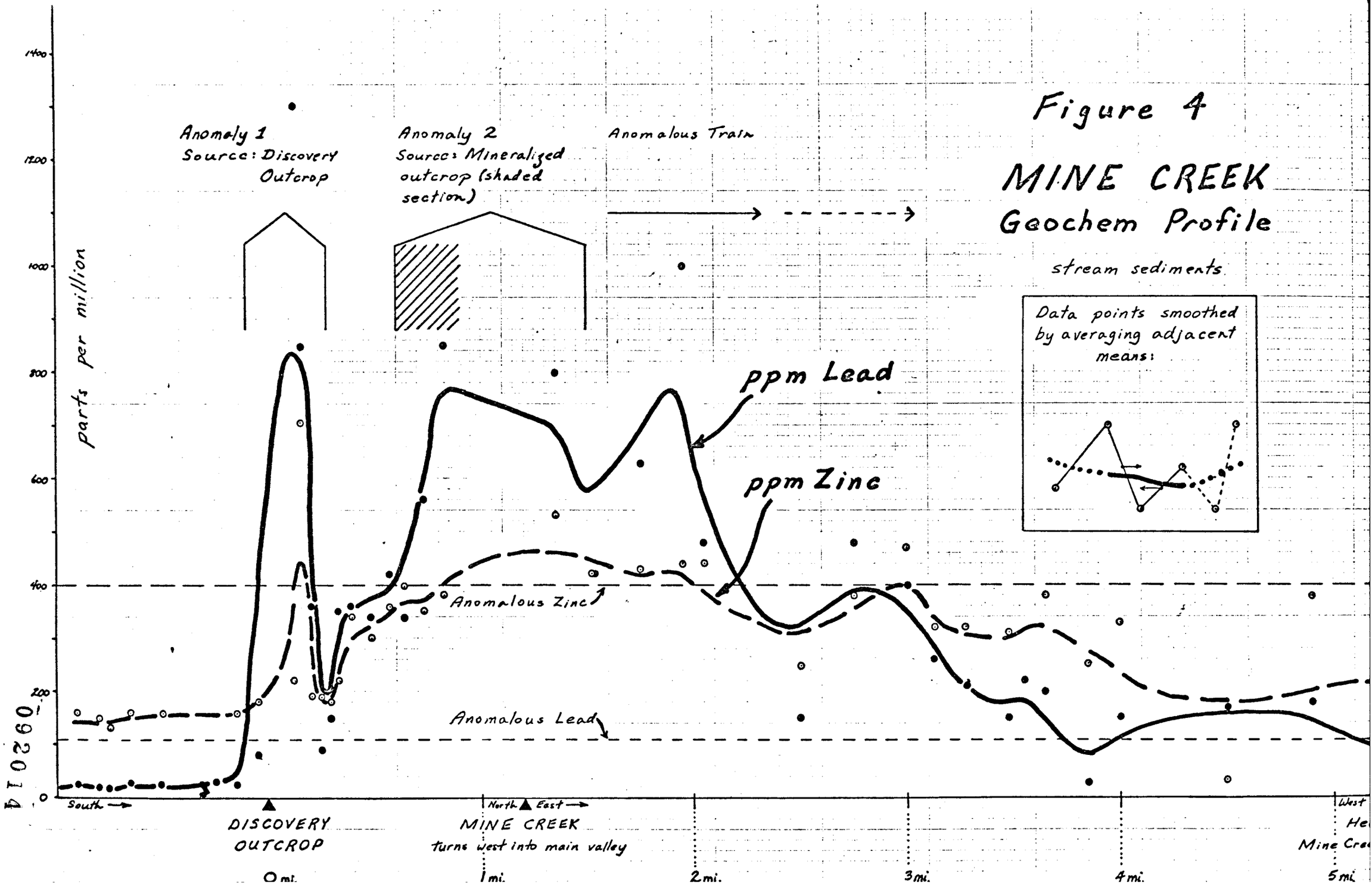
Figure 4
MINE CREEK
Geochem Profile
stream sediments
Data points smoothed by averaging adjacent means:
Anomaly 1
Source: Discovery Outcrop
Anomaly 2
Source: Mineralized outcrop (shaded section)
Anomalous Train
parts per million
ppm Lead
ppm Zinc
Anomalous Zinc
Anomalous Lead
1400
1200
1000
800
600
400
200
0
South
North
East
West
DISCOVERY OUTCROP
MINE CREEK
turns west into main valley
0 mi.
1 mi.
2 mi.
3 mi.
4 mi.
5 mi.

Figure 5

Project 914
Frequency Histogram
ppm Copper
(stream sediment)

Total samples: 661.

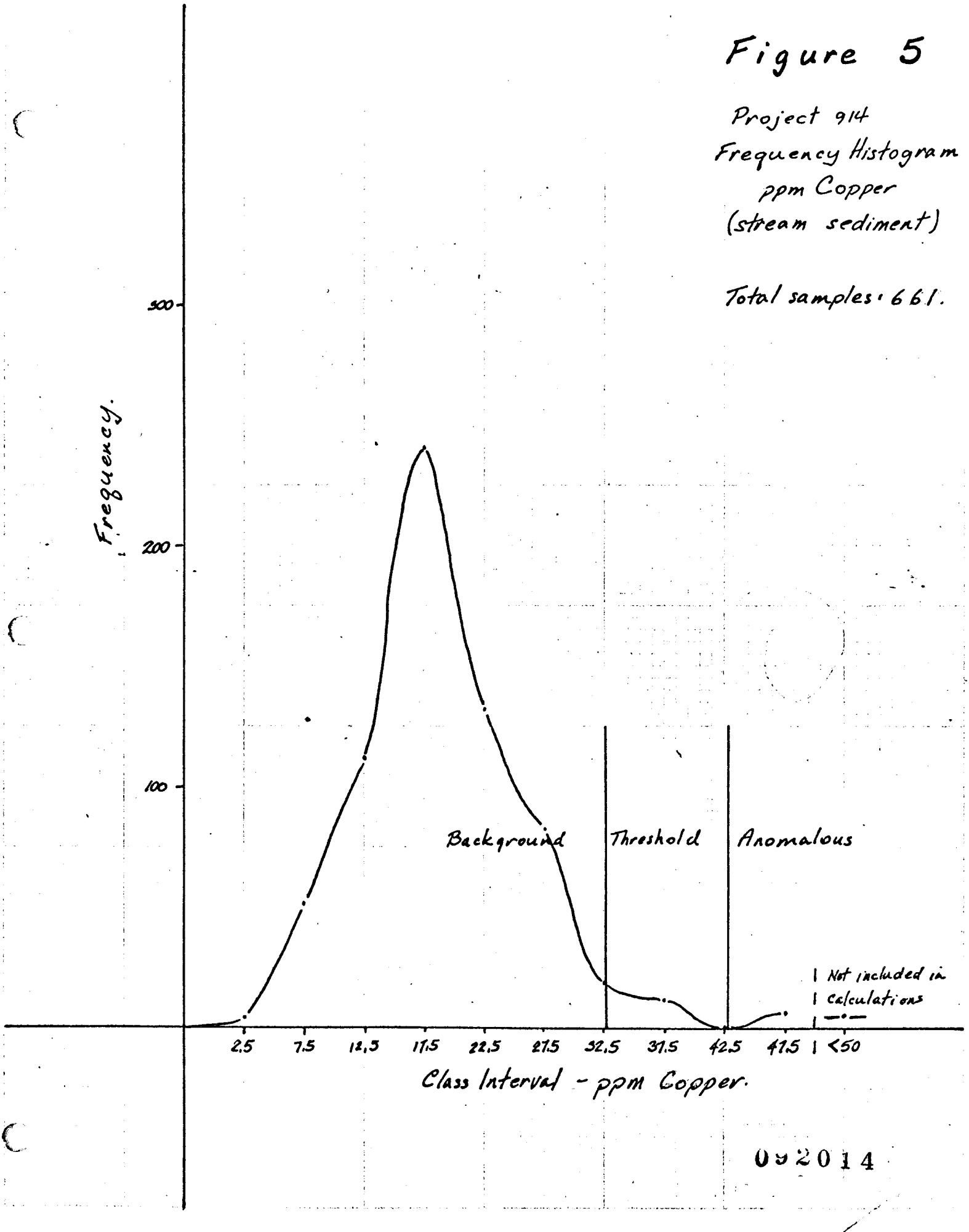

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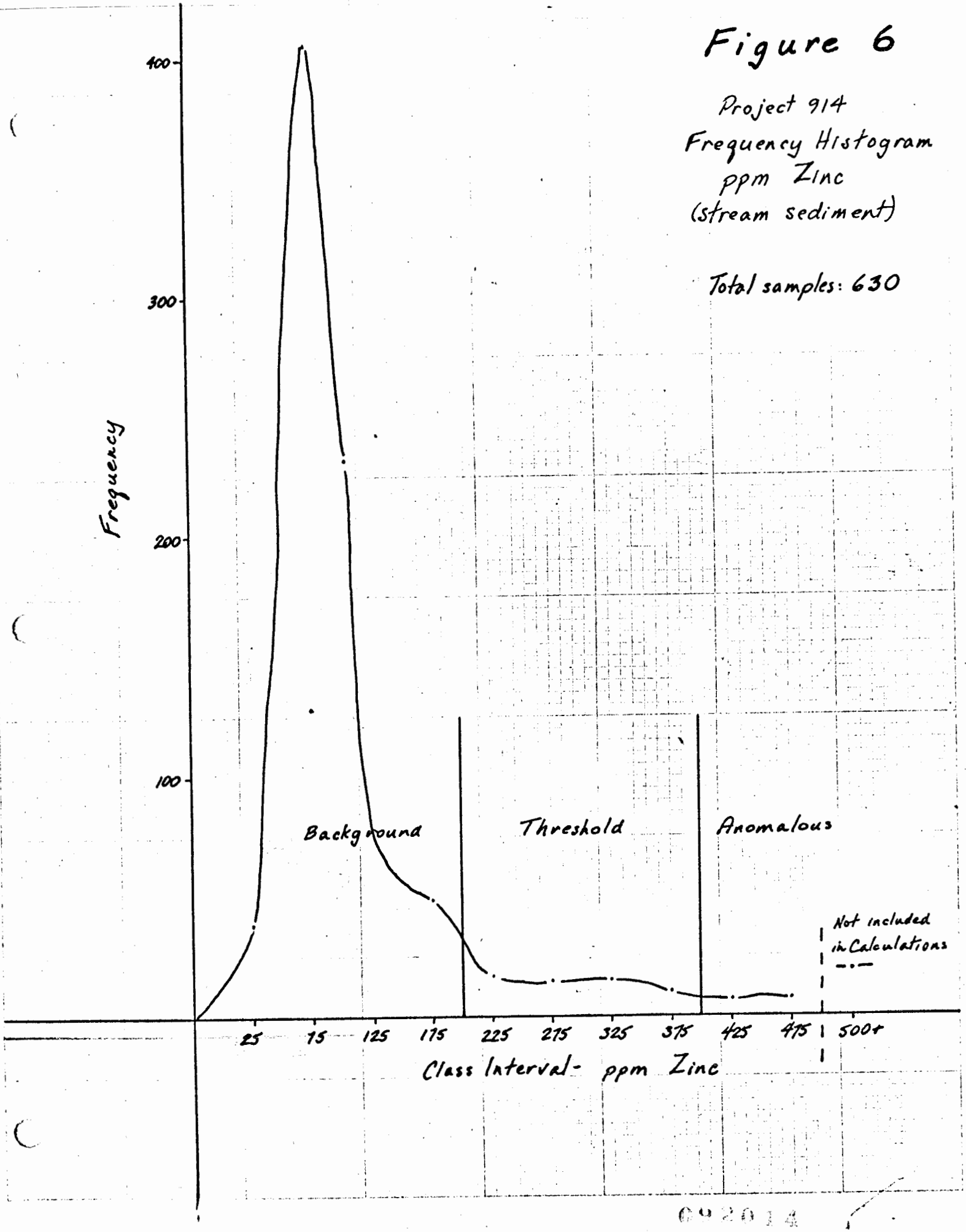
Figure 6

Project 914
Frequency Histogram
ppm Zinc
(stream sediment)

Total samples: 630



092014

Figure 7

Project 914
Frequency Histogram
ppm Lead
(stream sediment)

Total Samples: 641

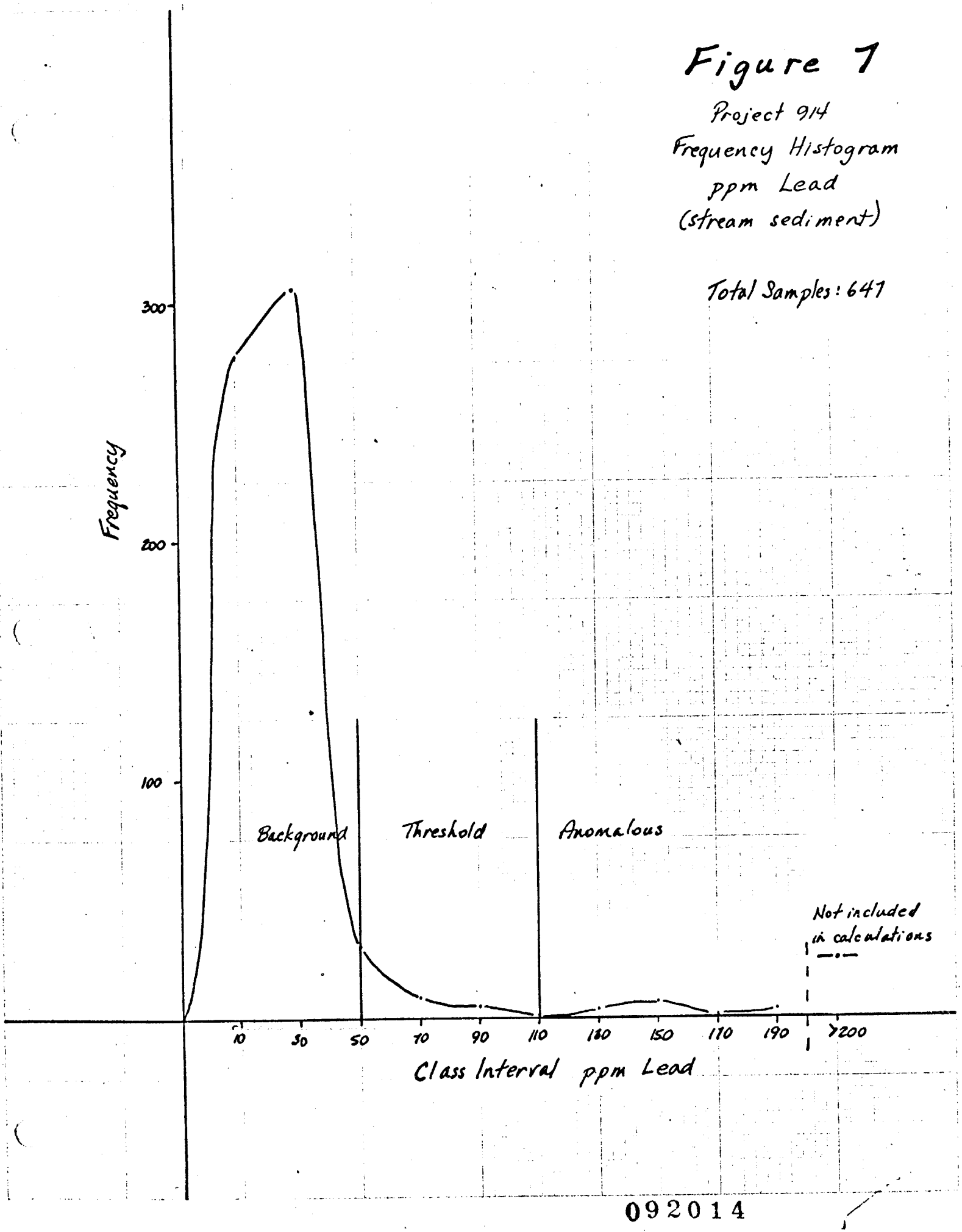


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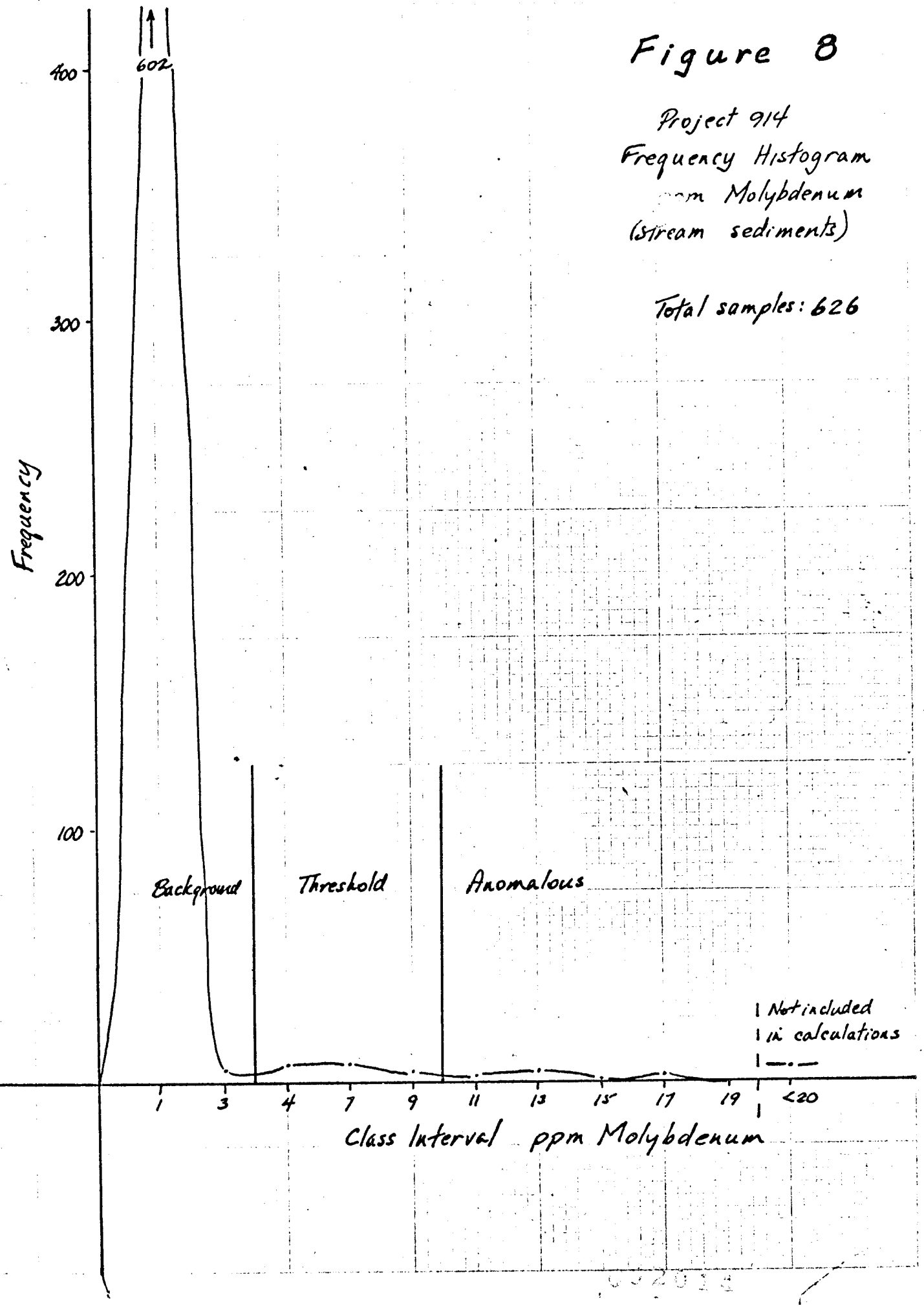
Figure 8

Project 914
Frequency Histogram
ppm Molybdenum
(Stream sediments)

Total samples: 626



Hadrynian units produced no unexpected or differentiable results i.e. the rock analysed cannot be identified from the results alone. Two exceptions to this were the Road River shales (500 - 3000 ppm Zu) and mineralized chips or core samples related to known mineralization.

A series of rock chips taken on Mine Creek indicated no changes in any of the rock types related to the deposit i.e. an argillite within mineralized strata was no different in content of Cu, Zn, Pb or Mo than an argillite in, say, Acland Creek. Consequently any "halo" around the deposit does not affect the elements noted, so that prospecting with rock chips on a regional basis is not warranted.

D. Geophysics Maps 2,3

An airborne EM-Mag survey was conducted by Noranda personnel covering some 250 square miles (1,000 line miles) in the project area. Features shown on Map 3 are discussed below. No further work is recommended on any of the anomalous features.

1. McMillan Deposit: There is no obvious Mag or EM signature related to the deposit.

2. Mine Creek and Strike Ridge: The concentration of EM anomalies is related to graphitic and pyrite bearing black argillites or shales in the "Cambro-Ordovician". Three holes drilled by Fort Reliance in Fort Reliance Creek intersected these rock types almost parallel to the bedding. The holes were oriented S.W. or W, dipping 45° to 65°.

3. Porker Creek:

   (a) A low mag trend (c800 gammas) lies directly along a strong northerly lineament in an area of known faults. The two features are likely related.

   (b) Four Em anomalies are oriented on a N - S line which includes the ridge south of Zinc Hill. All four are underlain by phyllitic, schistoze units of thinly bedded argillite and quartzite. Prominent N.E. trending fault-lineaments also cross the ridge in three related areas. Again the features are probably related.

4. Acland Creek: A generally higher mag trend (1200 - 1600 gammas) covers the general area. No specific reason can be given for it, except to say that a change in stratigraphy is not suspected.

E. Regional PFU'S

For this section of the report, each of the PFU areas covered is presented with its history to date, including original geochem maps, geology, and this year's follow-up information.

1. Camp Creek Zinc Anomaly 95D 11 W Maps 9a, b, c

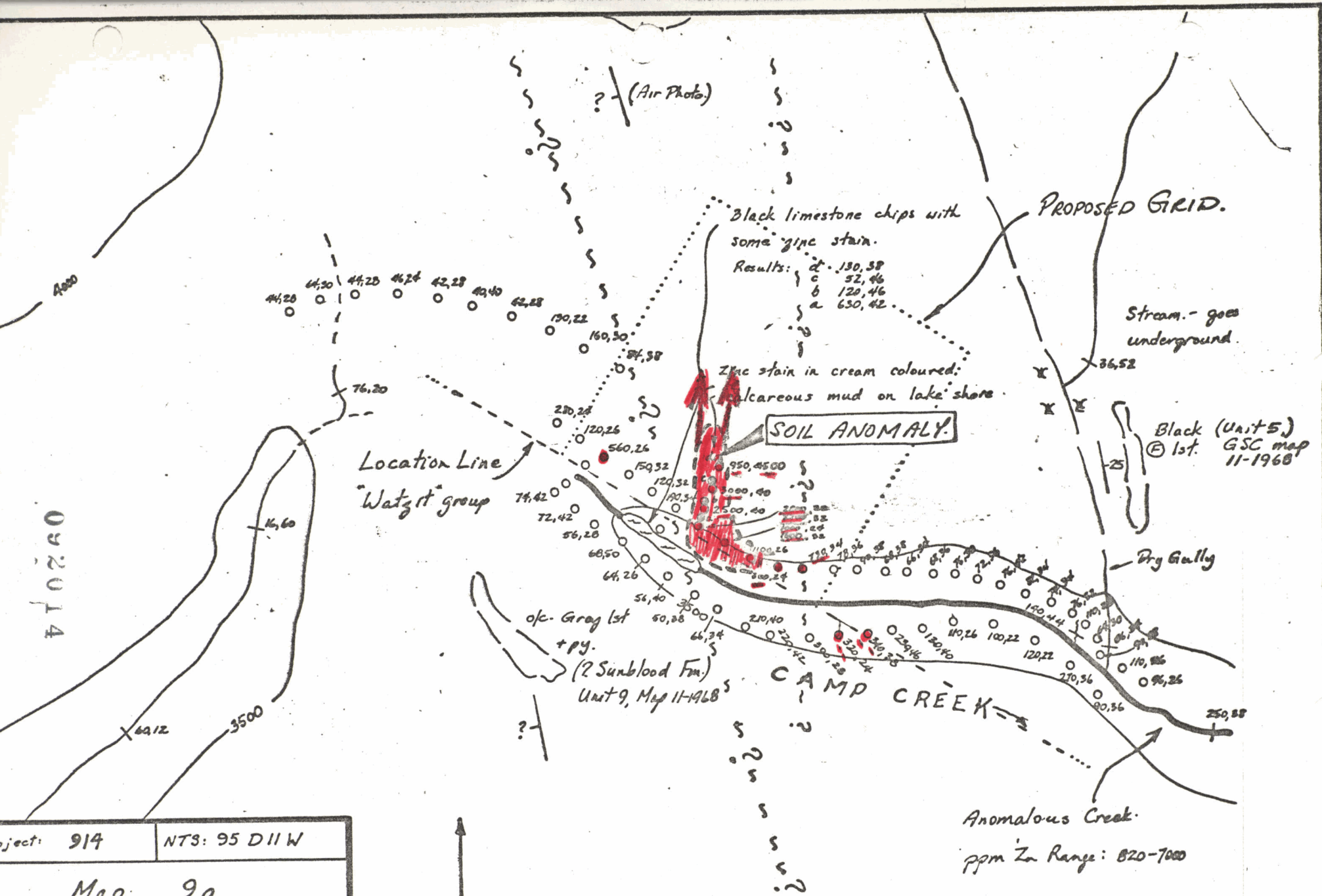
Limted soil lines have picked up an open sided anomaly which requires a larger grid to define its extent. The area is underlain by Sunblood Fm (?) limestones and Lower Cambrian fossiliferous silty limestones. It is crossed by at lease one strong air photo lineation.

The setting is identical to the Otter Creek deposit (Pb, Zn, Ba, 6 million tons) some eleven miles to the south. Hence even a restricted zinc anomaly may be significant considering that the Otter Creek deposit was exposed in only a small outcrop.

A 2,000' x 2,000' grid with 400' centres could be easily located, using the location line of the Watzit Claim Group. The grid can be expanded and/or detailed as dictated by the results.

Additional Recce soil lines are warranted to the north. Lines running east from the ridge to the north will cross a prominent N - S lineation. If any anomalies are related to this lineation or any mineralization (Pb, Zn, Ba)

is located, the entire area should be protected with an adequate claim group.



Project: 914 | NTS: 95 D11 W

Map 9a
Camp Creek PFU
1975 Data

Results listed: ppm Zn, Pb

'75 JES

092014

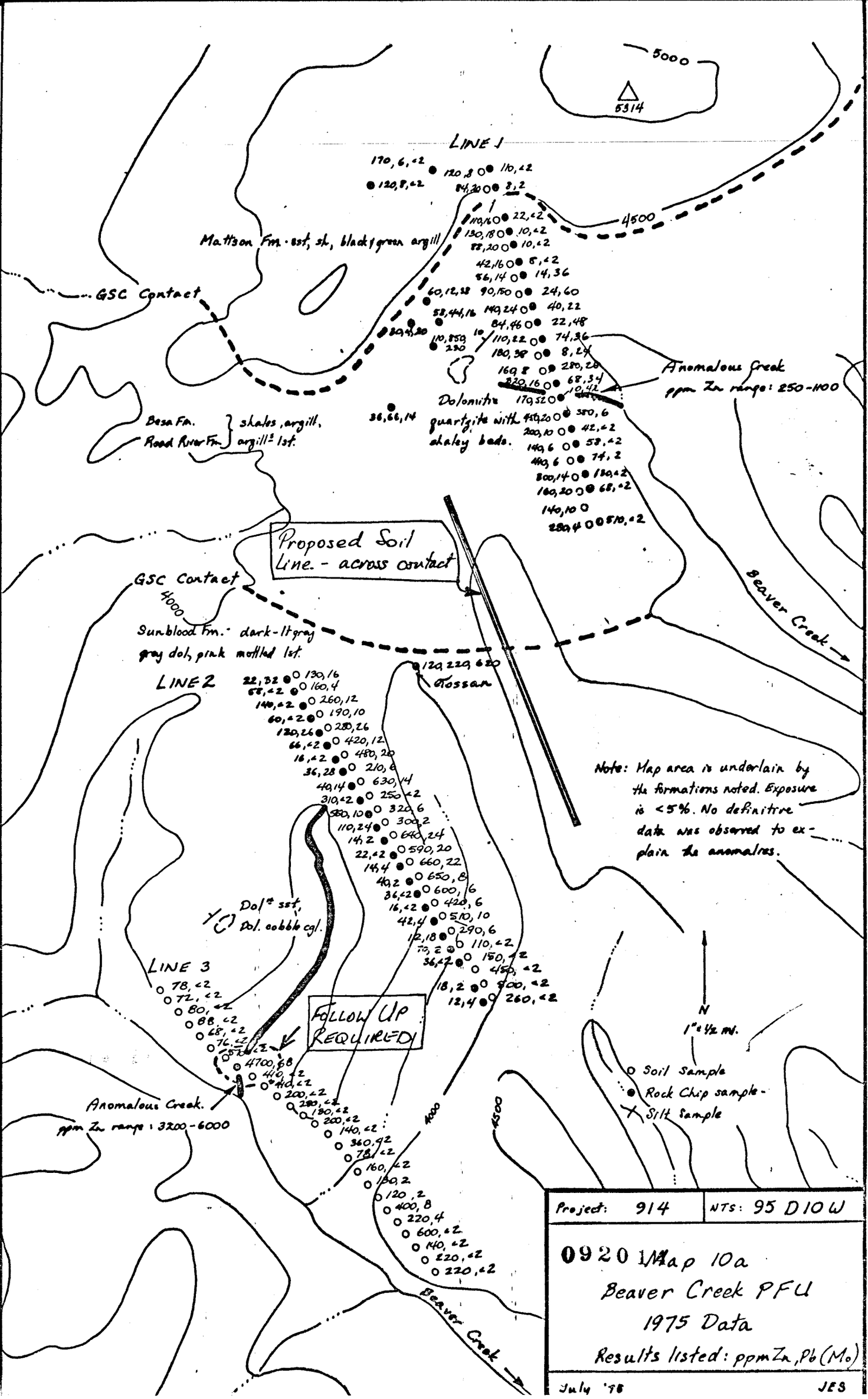
Map 9b
Camp Creek PFU
1973 Data

Beaver Creek PFU
Camp Creek PFU
ROCK RIVER FAULT
Otter Creek Deposit
6 million T. - Pb, Zn, Ba
Spruce Creek PFU
Lootz Lead PFU
Unit Lithology
14 Besa River Fm - black sh. & argillite
11 Road River Fm - black sh. & siltstone
9 Sunblood Fm. grey dol., pink lst
8 Wavy banded silty lst
Unit 5 - Grey (F) sity lst, argillaceous lst
Map 11-1968
Map 9c
PFU Locations
& Geology

2. Beaver Creek Zinc, Molybdenum 95D 10 W Maps 10a, b, 9C

The anomalies occur in an area underlain by the Mattson Fm, Besa and Road River Fm, and the Sunblood Fm. The original anomalies apparently occur in the latter two. Reconnaissance soil lines indicate higher zinc values in the Sunblood Fm than in the overlying Road River shales - an anomalous situation in itself. Because of very poor exposure, no real interpretation can be applied to the results to date. Trenching or X-ray drilling is not warranted without more conclusive data.

It is suggested that one more soil line be located across the contact area to test the possibility of high background values related to the formations. In addition a single soil value of 4700 ppm Zn (68 Pb) taken on Line 3 should be followed up. Its location in the creek bottom argues for organic contamination or a transported anomaly, but it should be re-examined.



Project: 914	NTS: 95 D10W

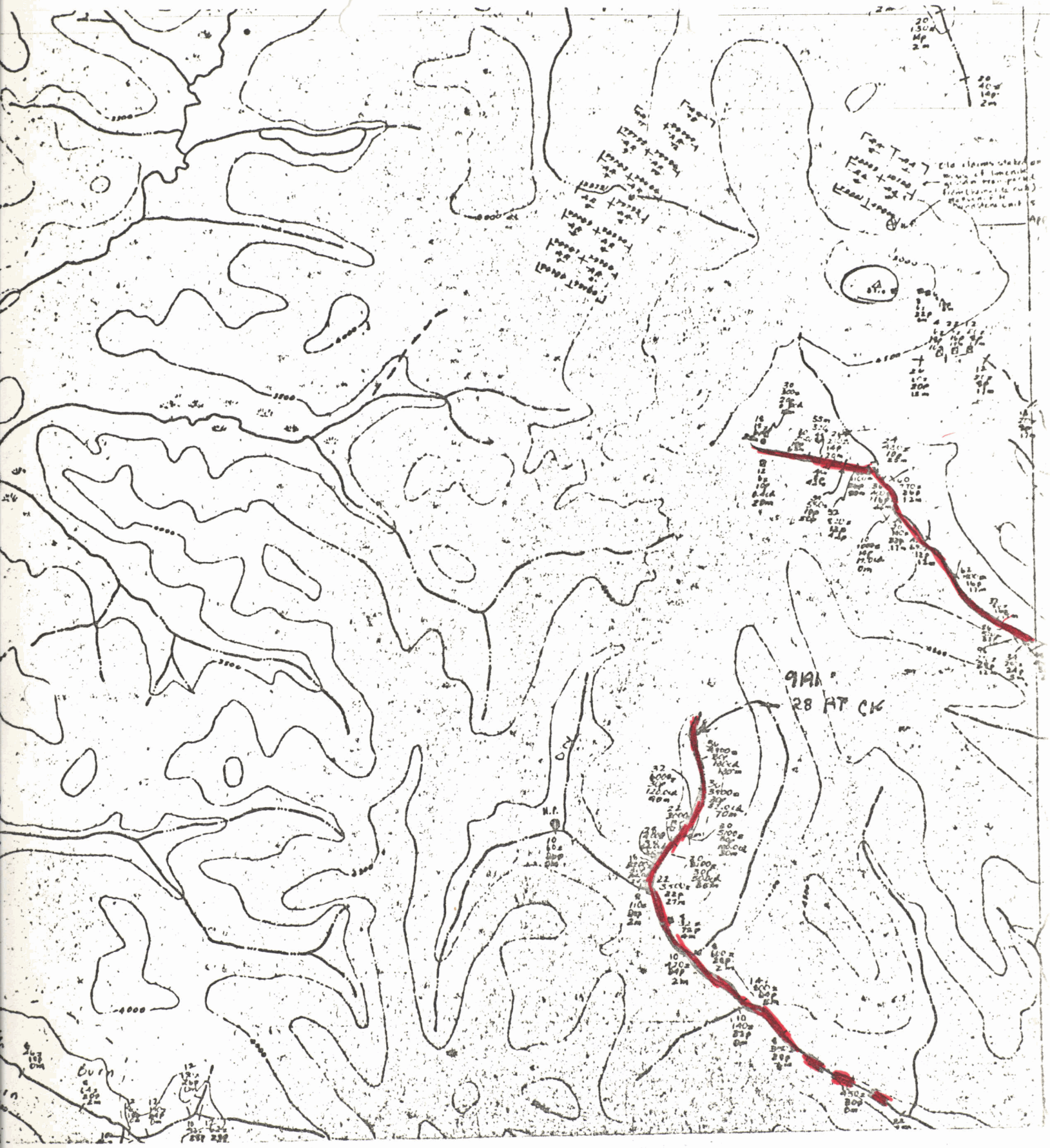
0920 Map 10a

Beaver Creek PFU

1975 Data

Results listed: ppm Zn, Pb (Mo)

July '78 JES



092014

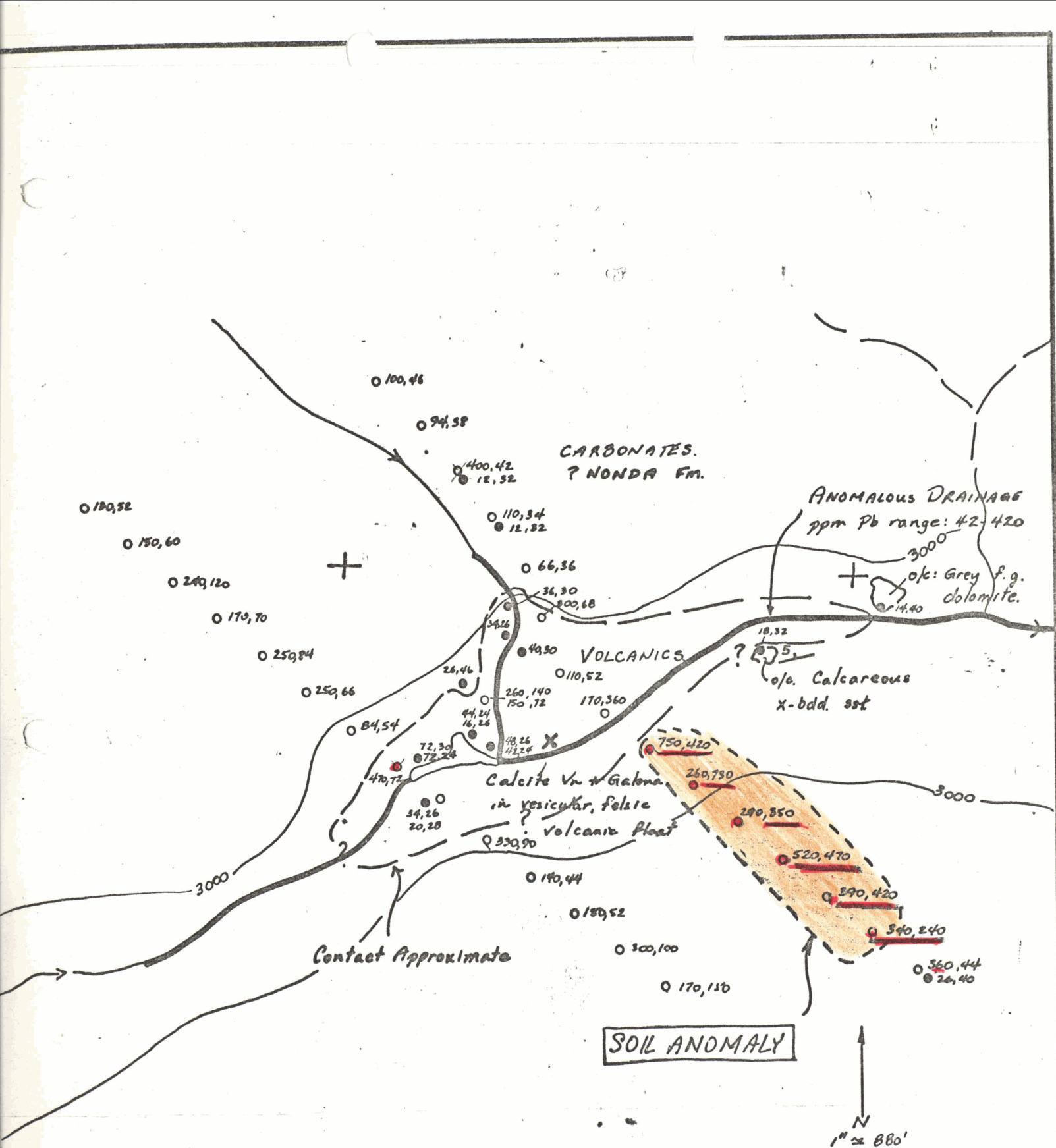
Map 10b
Beaver Creek PFU

3. Lootz Lead, Lead 95 D 7 W Maps 11a, b, 9c

An open ended zinc-lead soil anomaly (weak) is located on the south side of the main valley. A horizon of amygdaloidal volcanics, apparently conformable within the Nonda Fm dolomites is exposed along the valley and was thought to be the source of the original silt anomaly.

However, several rock chips and soils taken in the volcanics do not support the idea. A veinlet of calcite, carrying galena, hosted by a cream coloured vesicular volcanic was located in the main valley bottom, and may relate the anomaly to faulting.

More prospecting and soils (dependent on prospecting results) are indicated.



Note: Units are ± flat lying and in conformable contact. Basal clastics (sst, dolomitic sst, grit) occur at the contact.

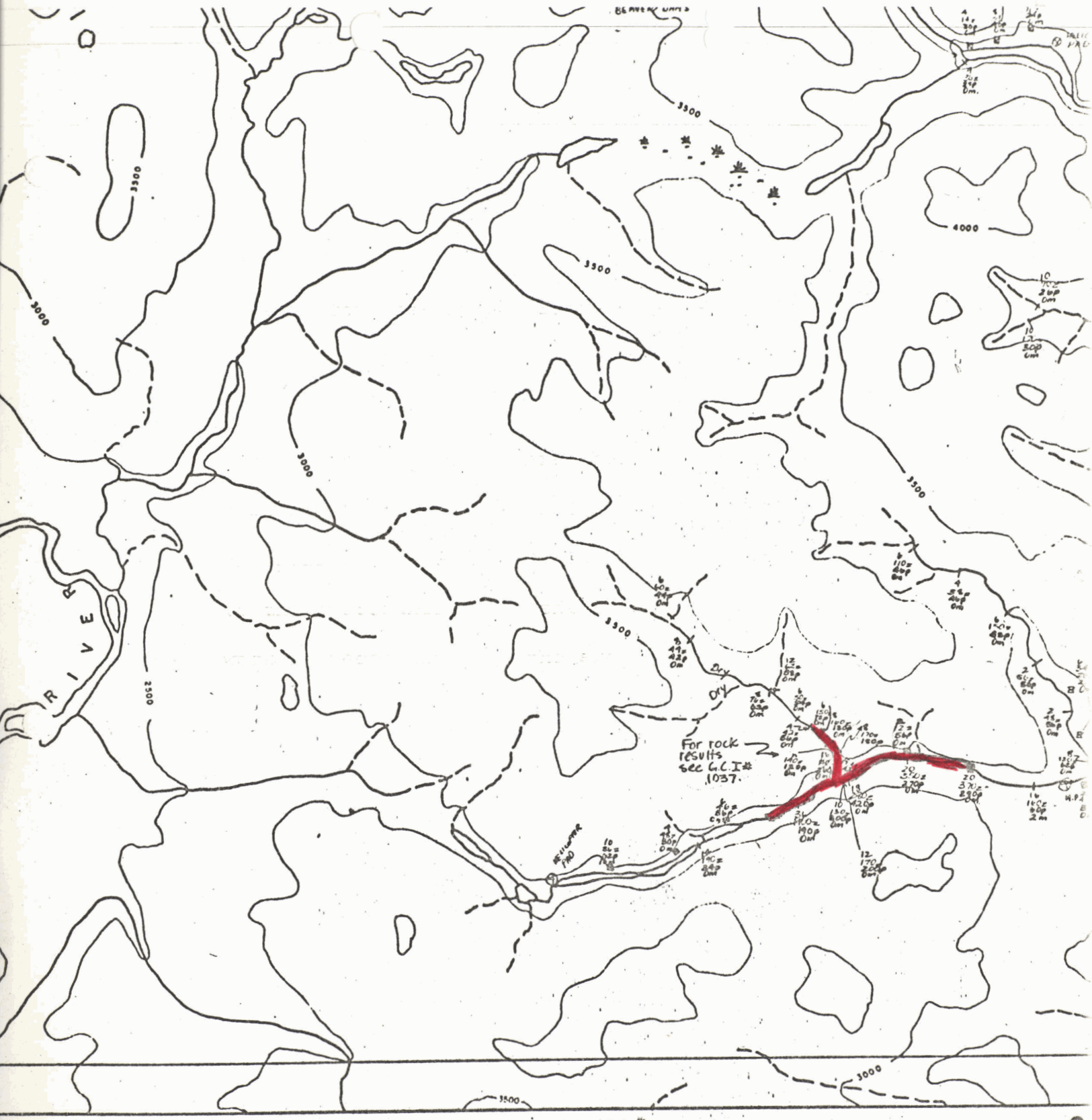
Mineralization: A single piece of volcanic float containg a lead bearing calcite vein was located in the valley bottom

Project: 914	NTS: 95 D 7 W

Map 11a
Lootz Lead PFU
1975 Data

09.2014

Results listed: ppm Zn, Pb.



Map 11b

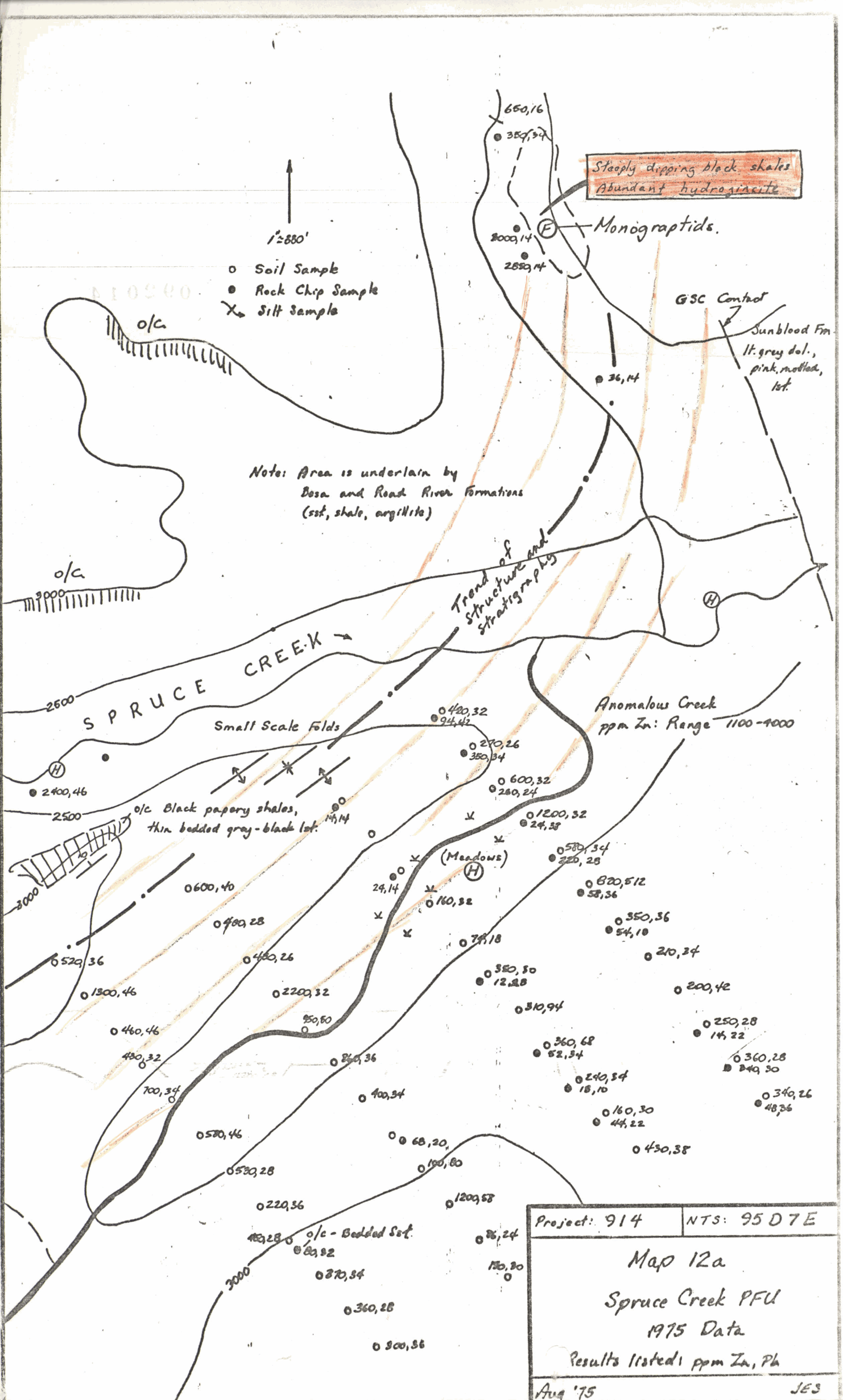
Lootz Lead PFU

1973 Data

092014

4. Spruce Creek Zinc 95 D 7 E Maps 12a, b, 9c

The area is underlain by Besa and Road River shales and Sunblood dolomites. The shales are deformed into N.E. trending folds. Monograptid shales carrying abundant hydrozincite were located in the tributary opposite the anomalous drainage - along the structural and stratigraphic trend. The anomaly is probably related to the hydrozincite present in the shales. No further work is recommended in the area.



Project: 914	NTS: 95 D 7 E

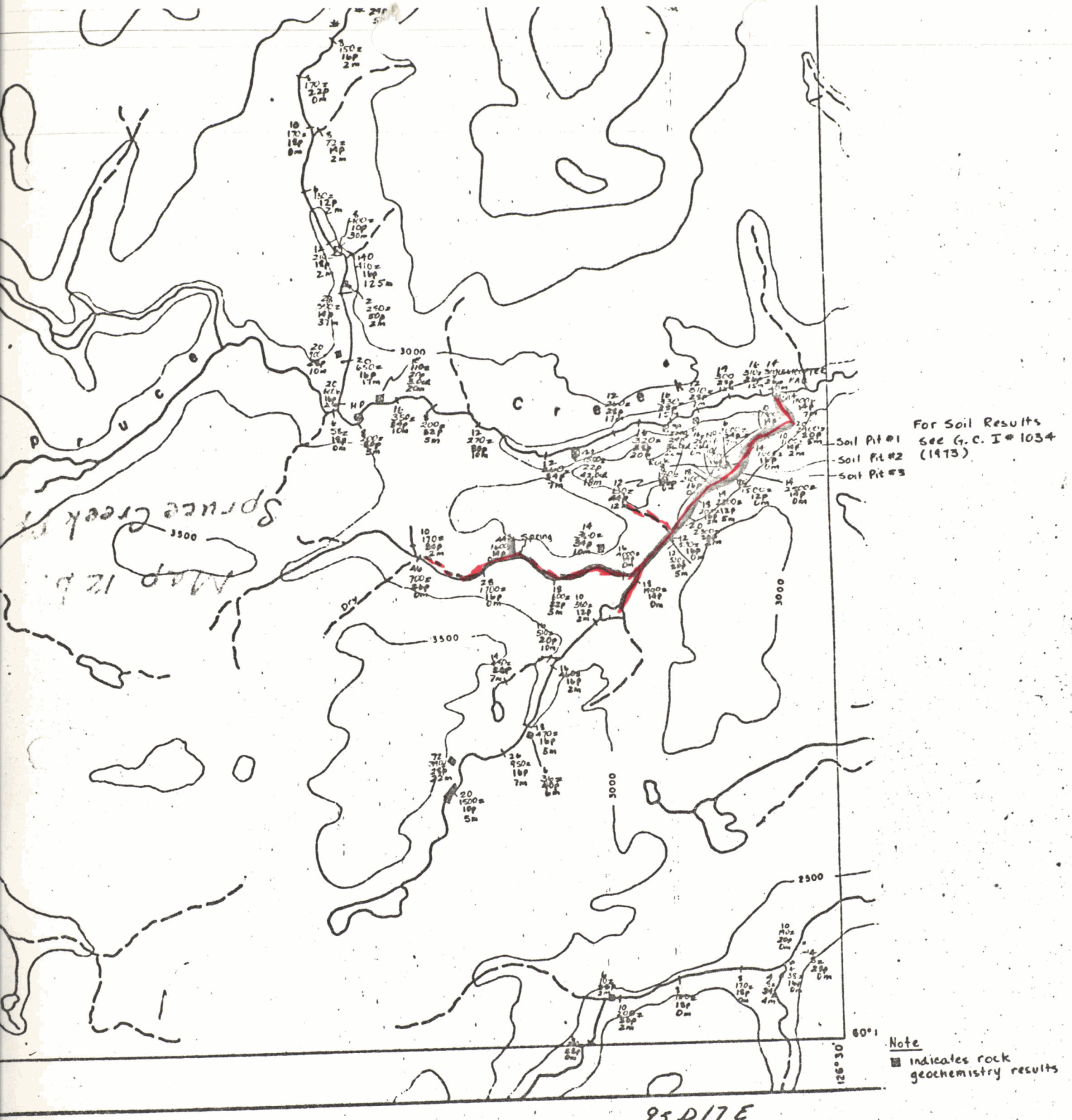
Map 12a

Spruce Creek PFU

1975 Data

Results listed: ppm Zn, Pb

Aug '75 JES



092014

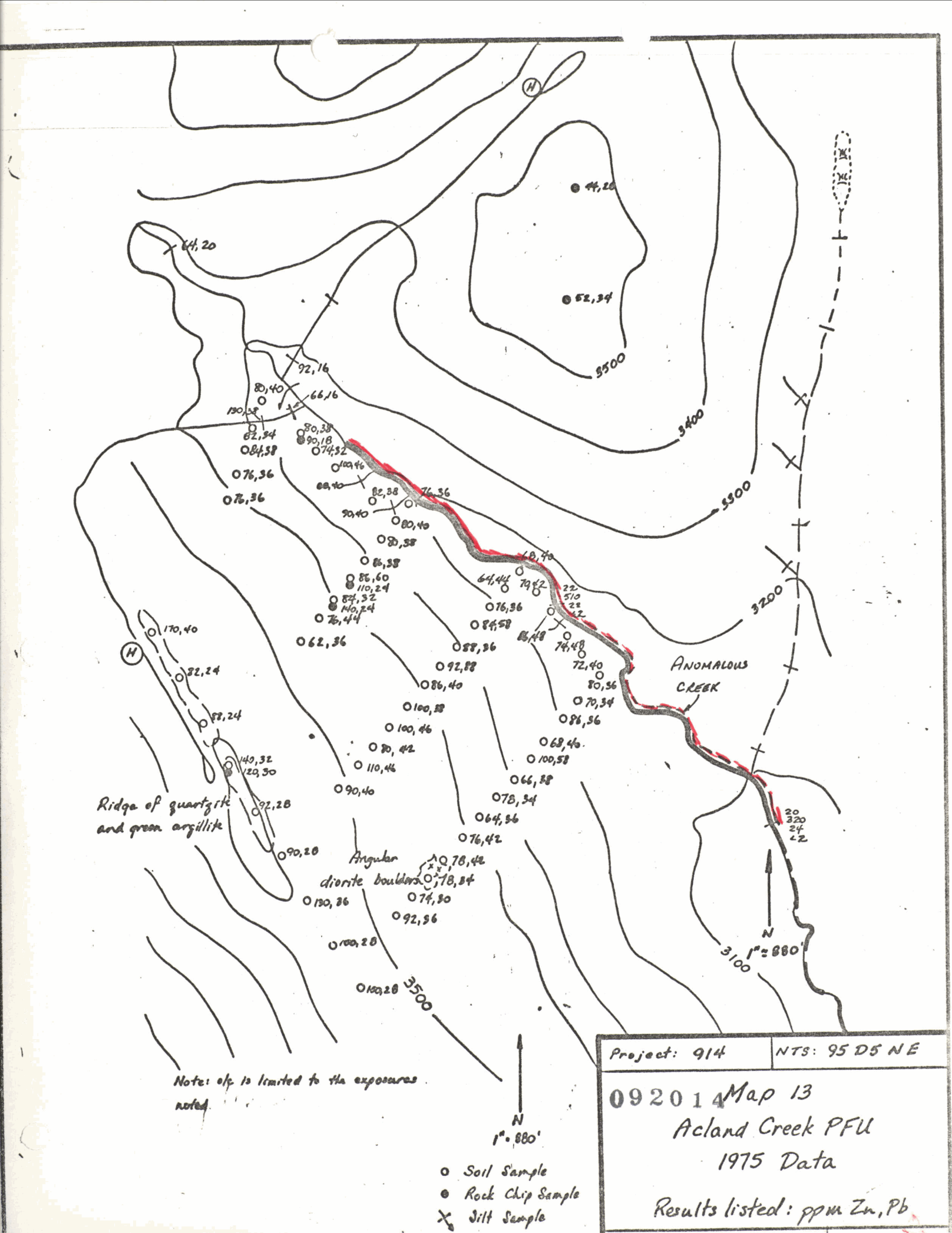
Map 12 b

Spruce Creek PFU

1973 Data

5. Acland Creek Zinc 95 D 5 N.E. Maps 3, 4, 13a

The anomaly is underlain by Hm stratigraphy (exposed one mile upstream), but is entirely covered by overburden. No satisfactory explanation was found with the follow-up work. The short anomalous "trail" and lack of lead values do not recommend the area for further work.


Ridge of quartzite and green argillite
Angular diorite boulders
Anomalous Creek
Note: o/c is limited to the exposures noted
N
1" = 880'
Soil Sample
Rock Chip Sample
Silt Sample
Project: 914
NTS: 95 D5 NE
092014 Map 13
Acland Creek PFU
1975 Data
Results listed: ppm Zn, Pb

6. Zinc Hill Zinc 95 D 12 S.W. Maps 3, 4, 14

The area is underlain by very coarse grained white-grey-black sugary marble and schistose green micaceous phyllites dipping gently N.E. These are interpreted as metamorphosed H6 members.

Sphalerite occurs in wisps and 1/4" stringers conforming to both bedding and structure. It concentrates in the noses of isoclinal (? recumbent) folds plunging 010/10, with limbs paralleling the N50W/25NE primary foliation in the region.

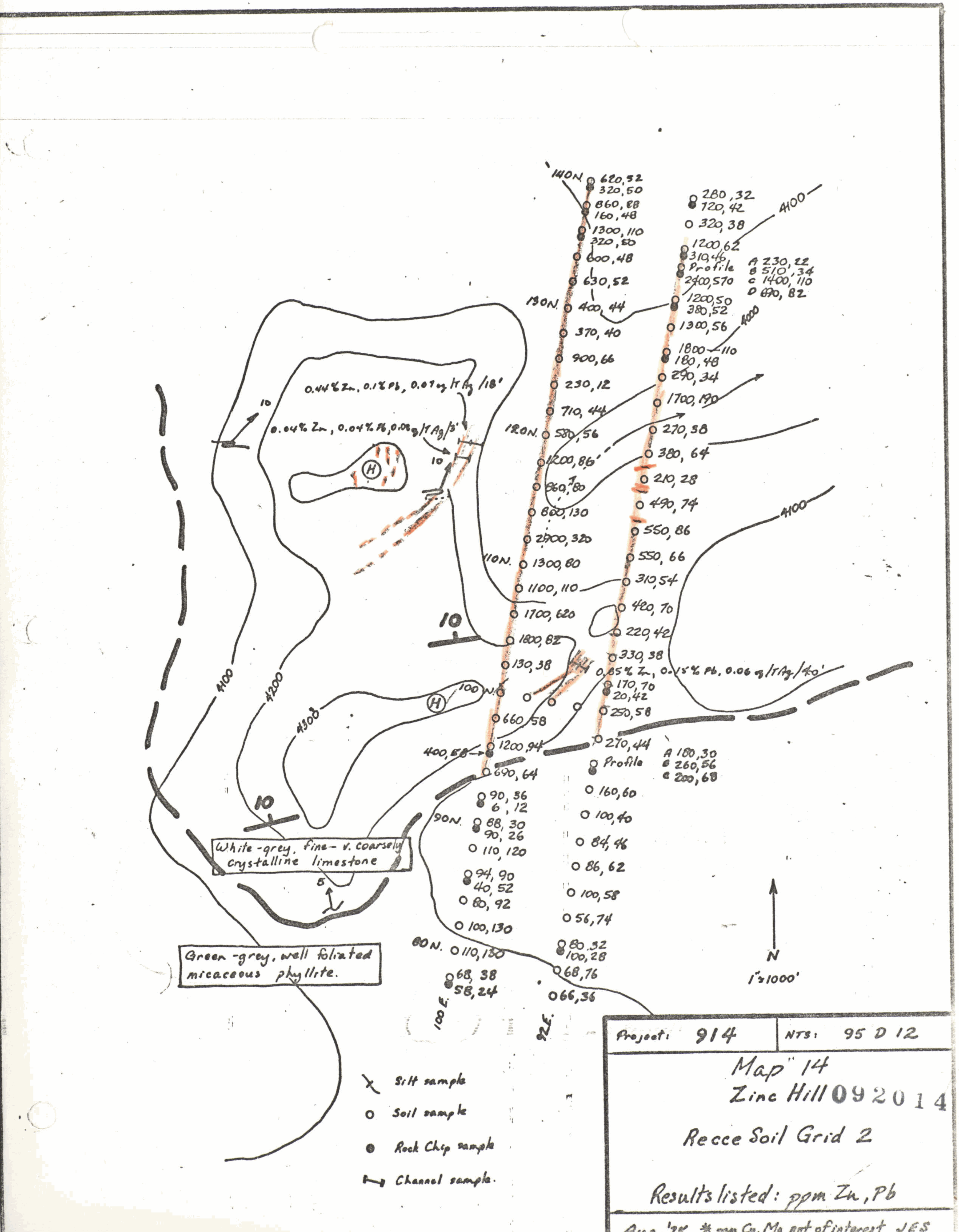
The area was staked (Rock Group 1 - 36) to protect the entire marble outcropping until further work could be done. After prospecting and preliminary mapping, it was apparent that the mineralization had little hope of larger concentrations than already noted. This is supported by the soils, which indicate only a higher background for the entire thickness of marble, rather than any truly anomalous area.

Three channel samples taken across strata carrying

good concentrations of sphalerite assayed as follows:

	% Zn.	% Pb.	Oz./T Ag.	True Width
1.	0.44	0.10	0.07	18.0'
2.	0.04	0.04	0.08	3.0'
3.	0.85	0.15	0.06	4.0'

No further work is recommended on the claims, but the presence of zinc in the area lends support to further prospecting/geochem coverage as outlined in the Recommendations.



140N
620,52
320,50
860,88
160,48
1300,110
320,50
600,48
630,52
130N.
400,44
370,40
900,66
230,12
710,44
120N.
580,56
1200,86
860,80
860,130
2700,320
110N.
1300,80
1100,110
1700,620
1800,82
130,38
100N.
660,58
400,58
1200,94
690,64
90,36
6,12
90N.
88,30
90,26
110,120
94,90
40,52
80,92
100,130
80N.
110,130
68,38
58,24
100 E.
280,32
720,42
320,38
1200,62
310,46
Profile
2400,570
A 230,22
B 510,34
C 1400,110
D 690,82
1200,50
380,52
1300,56
1800
110
180,48
290,34
1700,190
270,38
380,64
210,28
490,74
550,86
550,66
310,54
420,70
220,42
330,38
170,70
20,42
250,58
270,44
Profile
A 180,30
B 260,56
C 200,68
160,60
100,40
84,46
86,62
100,58
56,74
80,32
100,28
68,76
66,36
92E.
4100
4000
4100
4100
4200
4300
10
10
10
10
5
0.44% Zn, 0.1% Pb, 0.07 oz/T Ag /18'
0.04% Zn, 0.04% Pb, 0.02 oz/T Ag /3'
0.85% Zn, 0.15% Pb, 0.06 oz/T Ag /40'
H
H
White-grey, fine- v. coarsely crystalline limestone
Green-grey, well foliated micaceous phyllite
N
1"=1000'
Silt sample
Soil sample
Rock Chip sample
Channel sample.
Project: 914
NTS: 95 D 12
Map 14
Zinc Hill
Recce Soil Grid 2
Results listed: ppm Zn, Pb

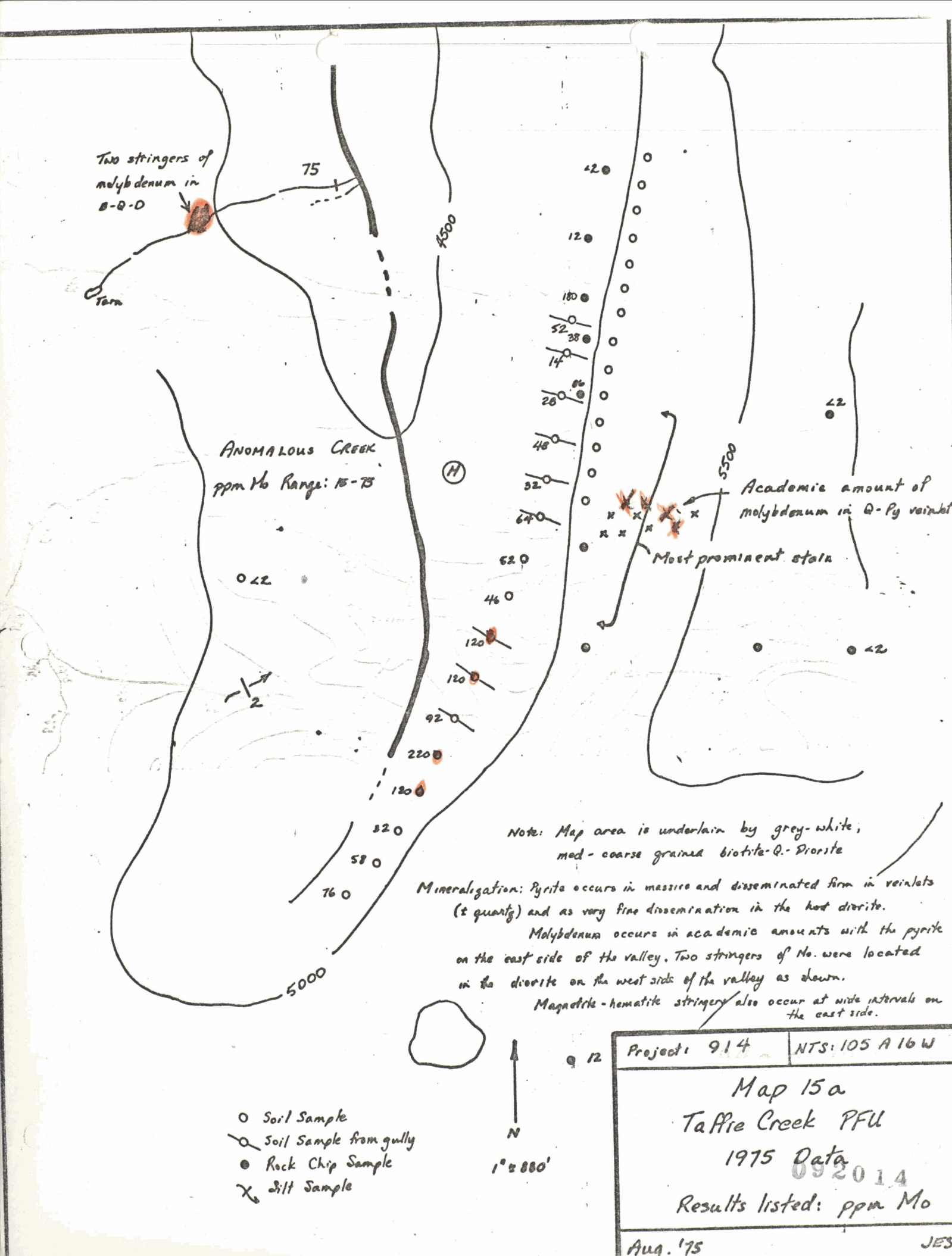
092014

7. Taffie Creek Molybdenum 105 A 16 W Maps 15a, b, c,

The area lies within a stock of biotite-hornblende and quartz diorite of Cretaceous age. A PFU by Pegg and Seward in 1971 indicated traces of molybdenite in vuggy quartz-pyrite veinlets S.E. of the helicopter pad. This was relocated and confirmed as "trace" amounts. A few stringers of molybdenum were also located on the west side of the valley, in the 75 ppm silt drainage.

There is no significant alteration in the area - except with an inch or so of widely spaced (100'+) quartz veinlets. The controlling fractures trend mainly E-W, dipping vertical to steeply south.

No further work is recommended in the area.



Note: Map area is underlain by grey-white, med-coarse grained biotite-Q.-Diorite

Mineralization: Pyrite occurs in massive and disseminated form in veinlets (± quartz) and as very fine dissemination in the host diorite.

Molybdenum occurs in academic amounts with the pyrite on the east side of the valley. Two stringers of Mo. were located in the diorite on the west side of the valley as shown.

Magnetite-hematite stringers also occur at wide intervals on the east side.

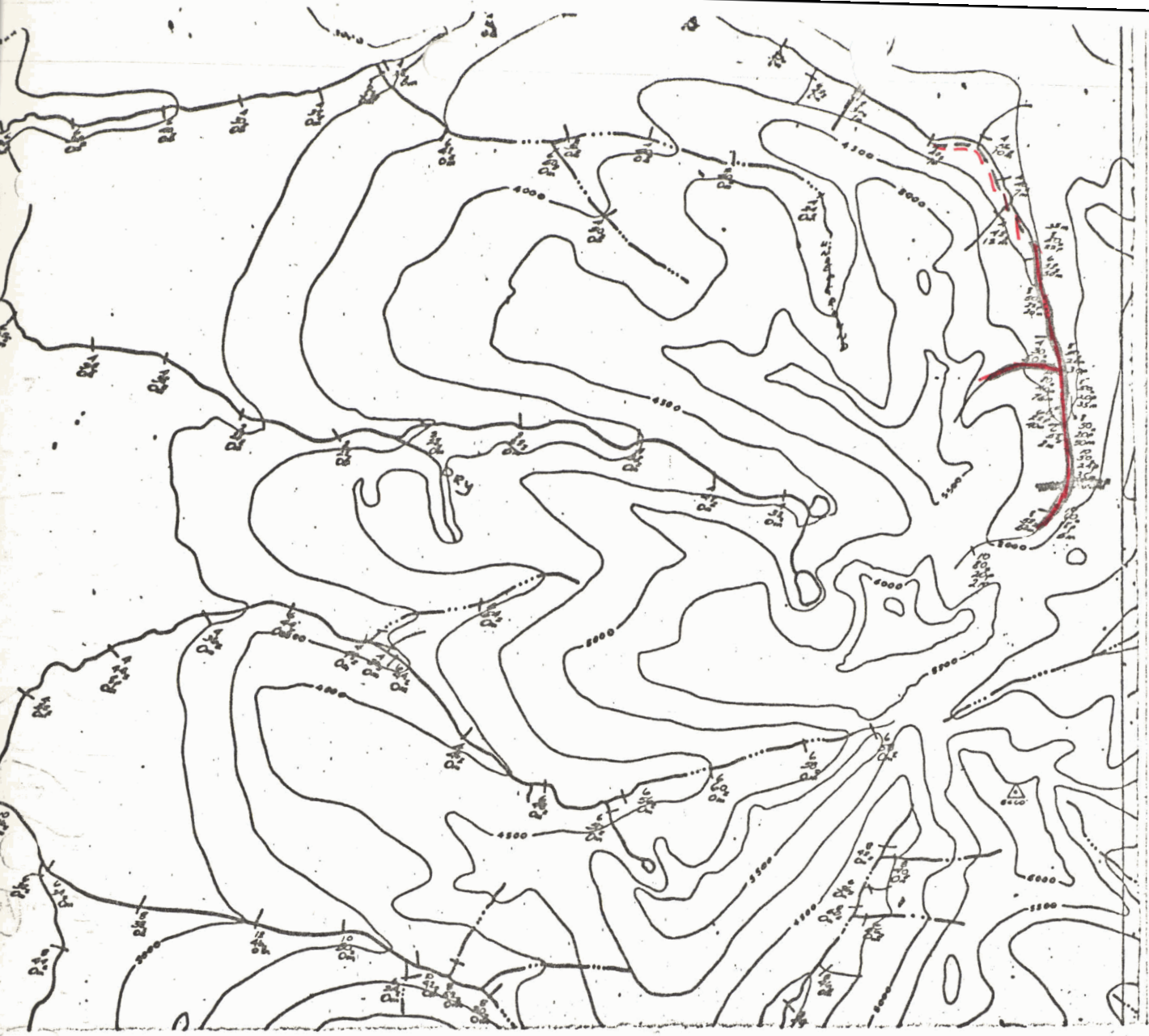
o Soil Sample
o— Soil Sample from gully
● Rock Chip Sample
x Silt Sample

Project: 914 | NTS: 105 A 16 W

Map 15a
Taffie Creek PFU
1975 Data

Results listed: ppm Mo

Aug. '75 JES



Map 15 b

Taffie Creek PFU

1971 Data

092014

12 = Cretaceous B-H Granodiorite

1 = Hadrynian Black argillite, green argillit, shales, Q-F Conglomerate, Carbonates

092014

Map 15 c.

Taffie Creek PFU

Geology.

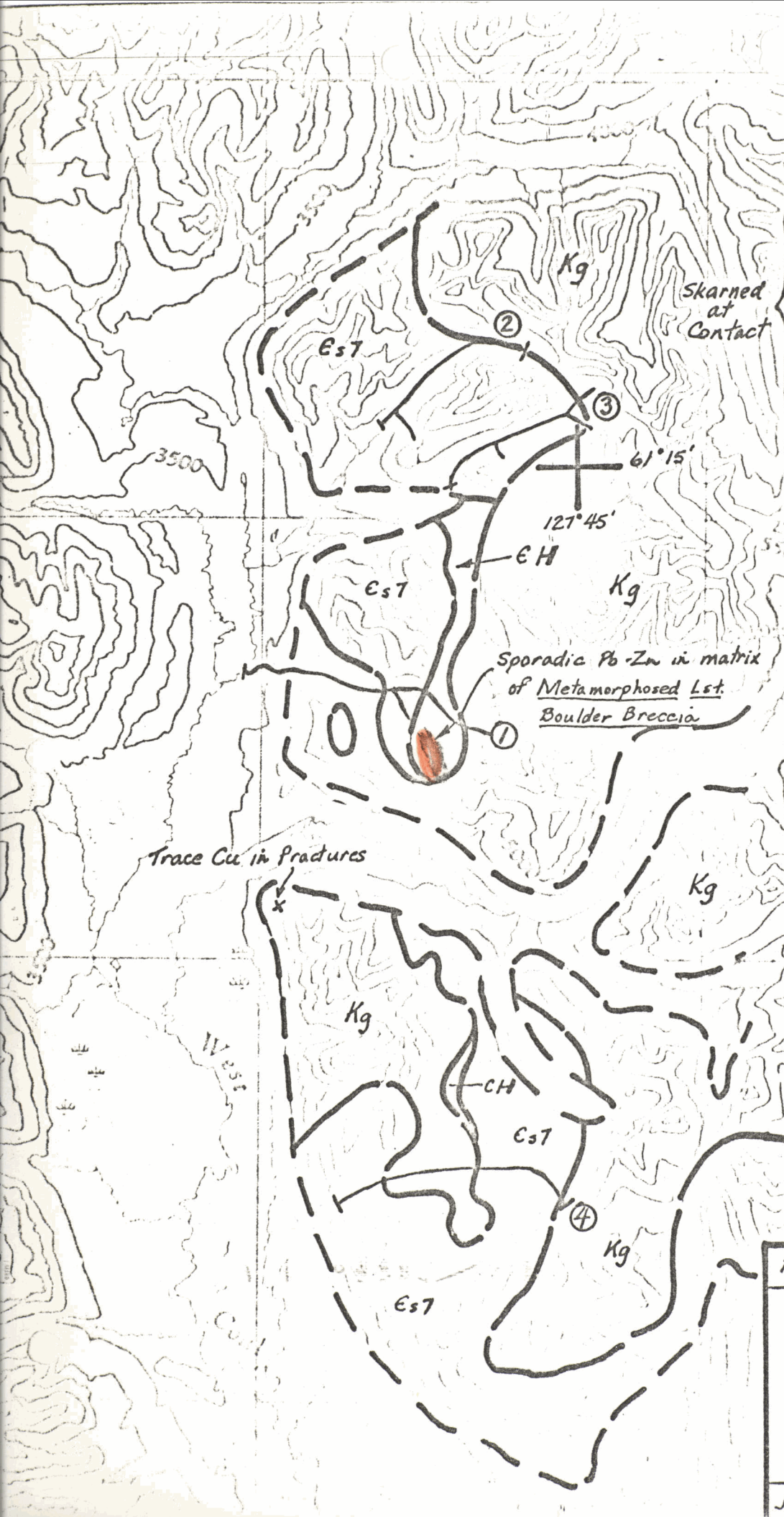
8. West Coal River Skarn Lead-Zinc 95 E 4 W Maps 16

A skarn containing lead and zinc was located by prospecting during a reconnaissance flight. The galena and spaherlite are hosted by the matrix of a marble-boulder breccia in Cambrian (? Hadrynian) aged sediments - skarned by an underlying diorite intrusive. The showing is very small ± 100' thick, 200' long, "floating" in the intrusive, and located on a pinnacle of the ridge. Its size location and extent were of guidance interest only.

The remainder of the "phyllite unit" and some of the skarned Sekwi information were also prospected and geochemed, but no further mineralization was located. Geochem values (attached) show uniformly high background values of zinc and lead in the skarned sediments.

No further work is recommended in the area.

092014



LEGEND

Kg - Cretaceous (?) Quartz monzonite, granodiorite (intrusive contact)

Cs7 - Sekwi formation - cherty calc-silicate rocks (here metamorphosed)

CH - Cambrian and (?) Hadrynian "Phyllite unit," - phyllite, slate, f.g. quartzite, siltstone, argillite.

Traverses: Numbers sequential downstream

No.	GCI	Series
①	2342	5516c - 5532c
②	2347	5384c - 5392c
③	2348	5071c - 5078c
④	2350	5393c - 5490c 6201c - 6204c

Note: Results listed in text of report.

ppm Zinc and ppm Lead indicate high background values in skarn - 200 ppm Zn, 150 ppm Pb.

Project: 914 | NTS: 95 E 4 W

Map 16
West Coal River Skarn
1975 Data

092014

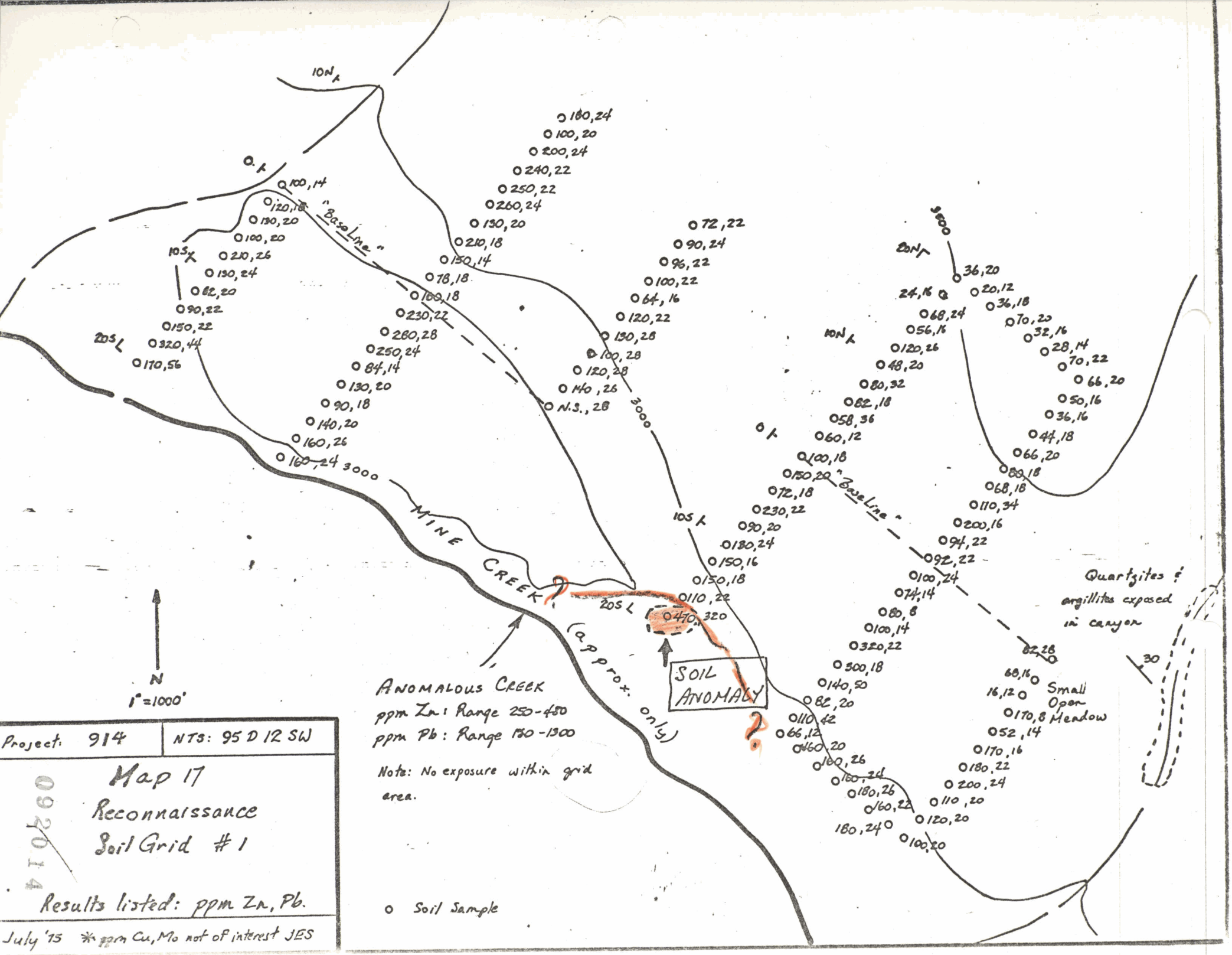
Results: following page.

July '75 JES

9. Recce Soil Grid 1 Zinc 95 D 12 S.W. Maps 3, 4, 17

The grid was located to test for a possible faulted projection of the McMillan deposit on the north side of the valley, opposite Mine Creek. The results were "dead" except for a single value of 470 Zn, 320 Pb located at the S.W. end of Line 3. The sample occurs in the valley alluvium, which is known to be strongly anomalous (see Map 8d).

No further work is recommended.



Project: 914	NTS: 95 D 12 SW

Map 17
Reconnaissance Soil Grid #1

0920 014

Results listed: ppm Zn, Pb.

July '75 * ppm Cu, Mo not of interest JES

F. Regional Property Examinations

1. Roy (Webb) Group Silver, Lead, Zinc 95 E 12 E

Property Examination Report on File in Whitehorse. Galena, sphalerite pyrite, pyrrhotite and (?) arsenopyrite occur in the unconformity between the Cambro-Ordovician Rabbittettle Fm and the underlying Lower Cambrian slates, phyllites etc. The deposit is probably related to a Cretaceous intrusive exposed immediately to the south.

If the arsenic content of the mineralization (assay outstanding) is low, the property is worth further evaluation. If not, the occurrence can be regarded as a valuable guideline for further prospecting in the area.

2. Hat Claims - High Grade Tungsten Skarn 95 E 6 E

We were unable to examine the showing because of frosted conditions on the very steep ridge face. Drilling by Canex (no intersection) may have been on the wrong side of a fault. (Samples examined were well

brecciated), and another showing is located to the west across the valley.

The possibility of a faulted deposit is sited as encouragement enough to re-examine the showing. Late July or early August should provide suitable weather conditions.

A P P E N D I X I

PRELIMINARY GEOLOGICAL REPORT

ON THE

QUARTZ DEPOSIT, YUKON TERRITORY

PRELIMINARY GEOLOGICAL REPORT

ON THE

QUARTZ DEPOSIT, YUKON TERRITORY

INTRODUCTION

The Quartz Lake Deposit (McMillan option) was visited during the period June 10 to June 19, 1975. The general purpose for this visit was to examine, in detail, core obtained during the current drill program.

Geology

Within the area tested by diamond-drill holes 94 to 110 inclusive, two distinct primary lithologies are recognized; 1) a lower carbonaceous to graphitic unit (Unit 1) and 2) an upper, predominantly siltstone-sandstone sequence (Unit 2).

Unit 1

Dark grey to black, carbonaceous and graphitic phyllite form the bulk of Unit 1. This fine-grained, well-foliated phyllite contains up to 50 percent quartz as laminations, pods and layers.

Locally, Unit 1 consists of light to medium grey carbonaceous quartzite. Within the quartzite, detrital grains are often preserved.

Unit 2

Unit 2 consists of sandy siltstone, siltstone, quartzite and limestone. Maroon to purple siltstone generally is interbedded with fine - to coarse - laminated sandy siltstone. Laminations consist of alternating maroon and purple siltstone and white to green sandstone.

White to light green quartzite grades vertically and laterally into sandy siltstone.

Two fine-crystalline, grey limestone and sandy limestone members occur within Unit 2. The first, referred to as the Mine Limestone, is located 80 feet to 90 feet above the base of Unit 2. The Mine Limestone has a vertical thickness of 42 feet in bore hole 94 and thins rapidly, down dip, to the northeast.

The second limestone member, which will be designated the Basal Limestone, is located at the base of Unit 2 to 20 feet above the base of Unit 2. The Basal Limestone has a thickness of between 2 feet and 12 feet.

Structure

Deformation, within the Quartz Lake area, resulted in: 1) compressional thrusting with associated shearing and folding and 2) steeply-dipping normal faults.

Thrusts

The Black Fault, a zone of thrusting parallel to subparallel to stratigraphy, is the most prominant structural feature of the area. This zone of thrusting, inferred to extend from the base

of Unit 1, to approximately 100 feet to 200 feet above the base of Unit 2, trends north to northwest with an average dip of 30° to the northeast.

The top of the Black Thrust is characterized by small-scale drag folds with a weak axial-plane cleavage. Toward the base of the thrust, folding yields to shearing culminating in a zone, extending from the base of Unit 1, to 20 feet to 80 feet above the base of Unit 2, in which lithologies are moderately to intensely sheared.

Normal Faults

Several normal faults with small displacements (5' - 10') are exposed in Mine Creek, west of the camp area. These faults, which post-date movement along the Black Thrust, strike north to northeast and dip 60° to 80° toward the east.

Mineralization

Within the Quartz Lake deposit, galena and sphalerite occur as partial to complete replacement of calcareous horizons within Unit 2. The Mine Limestone and Basal Limestone appear to have been the best hosts for lead-zinc mineralization.

Other sulphides present include; pyrite, arsenopyrite, boulangerite, tetrahedrite and chalcopyrite. Pyrite, the most abundant sulphide, occurs in zones of replacement, with or without galena and sphalerite, as disseminations, laminations and fracture fillings. Arsenopyrite and boulangerite generally

occur with, or in close proximity to, galena and sphalerite. Tetrahedrite and chalcopyrite are only locally evident.

Mineralization appears to be genetically related to development of the Black Fault. Sulphides are restricted to this zone of thrusting and sulphide deposition was, in part, synchronous with deformation.

Alteration

Fine hematite imparts a purple to maroon color to the siltstones and sandy siltstones of Unit 2. During mineralization, hematite was altered to pyrite resulting in a 'bleaching' of the host rocks. This alteration zone extends up to 300 feet above the base of Unit 2.

The top of the alteration zone is mark by alternating maroon (unaltered) and pink (weakly altered) siltstone or sandy siltstone. Alteration intensity gradually increases with depth culminating in a zone, 50 feet to 150 feet thick, of pale green siltstone.

Conclusions

Within the Quartz Lake area, galena and sphalerite occur as replacement of calcareous horizons within a zone of shearing referred to as the Black Fault. The host rocks are characteristically 'bleached' and display a well developed foliation.

The following conclusions have possible exploration applications:

1) Mineralization is related to the development of the Black Fault.
2) The zone of shearing and alteration extend well above and below mineralized horizons.
3) During mineralization, lead and zinc possibly were derived from Unit 1.

Discussion

The following may affect the viability of the Quartz Lake deposit;

1) Host rocks above and below 'ore' horizons often are intensely sheared.
2) In some areas blocks of 'ore' appear to occur en echelon; a result of a step-like series of normal faults.

Gary Belik
Geologist

June 25, 1975

A P P E N D I X I I

SUMMARY OF OBSERVATIONS

PA = Point of Agreement.
UP = Unresolved point of discussion.
PO = Point of observation, undiscussed.

1. PA Ore minerals are apparent replacement of limestones and calcareous argillites.

   UP Not all mineralization is related to a calcareous host. Sections within the ore and thin lenses of py - gl - sph in the argillite are not calcareous. This may or may not be a reflection of complete replacement.

2. PA Replacement textures are abundantly evident.

   UP Not all textures indicate a replacement origin. There is also relict evidence of a layered or banded texture to the ore minerals in quartzite, carbonate and massive sulphide hosts in the drill core.

3. PA Brittle failure textures appear in the sulphides.

   UP Reformation of sphalerite and galena not related to incipient brittle failure. It is interpreted as

evidence of ore existing pre deformation, rather than syn- or post- deformation.

4. UP (Compare to 3) The relict banded textures and replacement textures imply a pre-existing banded sulphide deposit overprinted by replacement textures during deformation.

5. UP The "Black Thrust" and black pyritic argillites are suggested as the "source" of mineralization and the plumbing system for emplacement. Why do the two features have very low background values in copper, lead and zinc?

6. PO The ore minerals occur in massive lenses, with sharp contacts, and conform strictly to the enclosing strata. Redistribution along fractures never carries for more than a few inches beyond the sulphide horizon. In the limestone outcrop below the helipad at the drill camp, the ore in the massive limestone appears to be truncated by the overlying breccia. If replacement is suggested how did the minerals avoid entering the breccia matrix? Perhaps a syngenetic

layer of sulphides was in fact truncated by the breccia.

7. PA Pyrite is intimately associated with the ore minerals, occurring as finer grained massive beds, medium to coarse grained aggregates, and as later fracture fillings.

UP The relation of the bedded pyrite to the genesis of the ore minerals. One view is that there is no relation at all, but is pure coincidence.

A second view (ARE YOU READY?) is that the change from a pyrite to pyrite-lead-zinc assemblage is related to a coincident facies change indicated by the lithologies. A strongly reducing environment in the black argillites (NOTE: Pyrite in the beds) changes upwards abruptly through a weakly reducing (green argillite + py) zone to a weakly oxidizing environment (pink hematitic argillite, conglomerates and limestones).

Reference is now made to a paper entitled "Genesis of Evaporite Associated Metalliferous Deposits - A

Sabka Process" - by A. R. Renfro, published in Economic Geology Vol. 69, 1974, pp. 33 - 45. An evaporite association is not implied for the Quartz Lake Deposit, but it is felt that the change in sulphide assemblages is related to the facies change in the stratigraphy, and cannot be ignored. Refro's paper points out a similar lithological/mineralogical relation in the Roan Copper Deposits of Zambia.

8. PO In viewing the model of the deposit in the Vancouver office, an obvious ore/structure relationship was seen. The ore zone is elongated in the crest and trough of an anti-syncline pair. The elongation parallels the dominant structural trend (Axis - 325/10) and, as noted before, parallels the Stratigraphy. If the origin is in fact by replacement, the importance of this structural control is obvious.

9. PA The argillites apparently graded upwards from green to pink to interbedded pink-maroon and green-maroon colours.

UP That this demonstrates an "alteration halo" created

by reducing hematite to pyrite and producing the green colour in the argillite. Why not leave the colour change as an original feature of sedimentation? The iron precipitated as pyrite in the argillites until the facies change required its deposition as an oxide?

95D/12

QUARTZ LAKE PROPERTY

1975 DDH Logs
194Q - 56 Summary

May 13- July 16/75

D. Pegg

"F"

NORANDA EXPLORATION COMPANY, LIMITED

Collared May 11/75	Completed May 13/75	Core Size BQ	Property Quartz Lake, Yukon		Project No 912	NTS No. 95D/12	
FIELD COORDINATES			SURVEYED COORDINATES			Sheet 1 of 5	
Lat. 6+20N	Elev.	Dip -90°	Lat. 100,497	Elev. 508.9	Dip -90	Hole No.	
Dep. 0+08E	Depth	Bearing	Dep. 99,965	Depth 380	Bearing	94	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-55			Overburden				
55-56.5	95+		Qtzte. Grey-green, massive, calcareous, porous				
56.5-60.3	"		Grey thin beddin limy argillite, well fractured, calc. stringers, occas. py in stringers				
60.3-62.5	"		Argillite, grey to creamy grading to qtzte. vuggy pts. sl. altd. & fract. well min. gal., py, sphal.	10+			
			replacing to well min. py. few narrow gouge zones				
62.5-66.8	"		Argillite. Grey to creamy to qtzte. vuggy pts. st. altd. & fractr. more sil. & vuggy. sparse	5+			
			scatt. py-fract. with siderite(?) or sphal(?)-gal. @ 70°. py increase 66.8				
66.8-67.4	"		solid sulfide pyrite				
67.4-69.4	"		Argillite & quartzite. Grey, fract. scatt. py massive 2" stringers. sphal. gal @ 50° @ 68.5'.2"				
			py @ 69.1'				
69.4-74.2	98+		Argillite & quartzite. Grey, fract. many angles. Sev. limy fract. with (siderite?) sphal @ 60°	1+			
74.2-78.2	98		Argillite & quartzite. Grey, fract. Many angles. Occ. fract. w. py shal. @ 45°-60° bedding @ 50°				
			py fract. fill @ 78.2				
78.2-95	"		Grey quartzite some green argillite. Creamy arg. @ 95. Minor py. occ. fract. with sphal(sid?)				
			minor py. slight galena, few small scale faults.				

DATE _____ LOGGED BY D.E.P./G.L.

NORANDA EXPLORATION COMPANY, LIMITED

"F"

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of 5
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 94
Dep.	Depth	Bearing	Dep.	Depth	Bearing	94

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
95-100	98		Dr.grey argillaceous limestone to f.g. limestone 97-99				
100-138	"		Repl.(arg.qtzte)limestone. well min. to solid sulfide py.sphal.gal.bedding 55° C/A	60-100			
120-138	"		Mainly solid sulfides as alternating zones of py,gal,sphal. to mixed. to 138'	"			
135-143	"		(138) mainly pale green sheared argillite. Occ. zone py.sphal.gal. shearing @ 45°	"			
143-147	"		Mainly pale green sheared argillite. Occ. zone py. sphal. gal. shearing @ 45°	2+			
147-150	"		Argillite grey-green quartzite bands.Many chl. slips or narrow zones. Rare py. spec. parts mod.				
			fract. core angle 60-65°. parts blocky broken	< 1-			
150-160	"		Argillite grey-green quartzite bands.Many chl. slips or narrow zones. Rare py. spec. parts mod.				
			fract. core angle 60-65°	<1-			
160-170	"		Argillite interband green to dark grey starting at 164'	<1-			
170-180	98+		Interbanded green and dark grey Argillite rare pyrite mod.fract. core angle 60-65°	<1-			
180-190	"		Argillite. Pale green starting at 184'.Rare py. mod. fract. core angle 60-65°	<1-			
190-200	"		Pale green argillite with bands of grey quartzite and qtz incl. well fract. parts. c/a 60-70°compact	<1-			
200-210	"		Pale green argillite with bands of grey quartzite and qtzte inclusions.	<1-			
210-220	98+		To Arg. dk grey, lt grey & quartzite.Inc. in py. @ 216.5 fair bands & irr. zones. sm incl.qtz	2+			

DATE LOGGED BY

NORANDA EXPLORATION COMPANY, LIMITED

"F"

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 3 of 5
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No.
Dep.	Depth	Bearing	Dep.	Depth	Bearing	94

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
220-230	98+		To Arg.dk grey, lt grey & quartzite. Inc. in py @ 216.5 fair bands & irregular zones				
230-240	"		To Arg.dk grey, lt grey & quartzite. Fair bands & irregular zones				
240-250	"		Argillite grey & dk grey to black. Incl. of Qtzte tives mottled appearance. fine scatt. py. bands and irregular blobs. bedding poor or missing	3+			
250-260	98		Quartzite:(258) grey parts impure 258-252. 3" band very fine-gr. "sooty" pyrite @ 253	2+			
260-270	"		Argillite:Mottled black to dk with parts white qtzite. graphitic partings. poor py. core angle 60-70° "quartz graphite"				
270-280	"		as above. better quality argillite				
280-290	"		Argillite: "mottled" black to dk with parts white qtzte. graphitic partings. very graph.parts				
290-300	"		as above. very graph. parts. friable br. parts				
300-310	100		as above. few bands py to ½" - deformed sheared parts 60-70°				
310-320	95		as above				
320-330	"						
330-340	95+		as above				
340-350	95+		Argillite:"mottled" black to dk with parts white qtzte.graph. partings.few bands py to ½". deformed sheared parts 60-70°.more graphitic				

DATE LOGGED BY

NORANDA EXPLORATION COMPANY, LIMITED

"F"

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 4 of 5
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 94
Dep.	Depth	Bearing	Dep.	Depth	Bearing	99

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz/T Ag	% oz/T
350-360	95+		as above. Increase quartzite								
360-370	70		as above. very broken crumbly								
370-380,	"		as above								
			END OF HOLE (CASING PULLED)								
			Assay Sections								
60.5-64.0						P4176	3.7	3.12	5.40	1.29	.01 N.
64.0-66.8						P4177	2.8	0.88	0.94	0.32	0.0 0.0
66.8-67.4						P4178	0.6	0.08	0.04	0.29	0.0 N.
67.4-69.2						P4179	3.8	1.28	5.80	.88	0
69.2-74.2						P4180	5.	0.32	1.26	.18	0.0
74.2-78.2						P4181	4.	0.16	0.96	.14	0.0
86-91						P4182	5.	0.38	0.77	.17	0.0
100-105						P4183	5.	4.96	8.04	2.10	0.0 0.0
105-110						P4184	5.	2.24	9.60	1.08	0. 0.0
110-115				5+		P4185	5.	8.00	23.20	3.89	0. 0.0

DATE _____ LOGGED BY _____

"F"

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 5 of 5
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 94
Dep.	Depth	Bearing	Dep.	Depth	Bearing	94

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz/T Ag	% oz/T
115-120				180		P4186	5	18.40	17.60	8.52	0.0 0.0
120-125						P4187	5	11.20	20.40	5.94	0.0 0.0
125-130				1215		P4188	5	5.64	19.20	3.33	0.0
130-135				1140		P4189	5	5.28	16.80	2.51	0.0 0.0
135-140				7120		P4190	5	2.64	11.60	1.39	0.0 0.0
140-145						P4191	5	1.84	5.50	.93	0.0

DATE _____ LOGGED BY _____

"I"

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Project No	NTS No.
May 14/75	May 15 '75	BQ	Quartz Lake, Yukon	912	95D/12

FIELD COORDINATES			SURVEYED COORDINATES			Sheet	of
Lat. ~~9+52N~~ 7+63N?	Elev.	Dip	Lat. 100,686	Elev. 507.3	Dip -90°	Hole No. 95	95
Dep. 0+00E	Depth	Bearing	Dep. 99,997	Depth 177	Bearing		

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-61			Casing				
61-70	85		Argillite: interbedded grey grene. few narrow sil. beds. some zones quartzite. vis.specs py.				
			core angle 50°				
70-80	85		Quartzite grey fract. 73-82. Core angle 80°				
80-90	85		Argillite grey green silic. zones few chl. slips. core angle 80°				
90-100	90		Quartzite, mainly with soft crumbly Arg. partings. 80° to core. very blocky parts.				
100-110	90		(105) quartzite, mainly with soft crumbly Arg. partings. solid sulfide. sphalerite, pyrite, gal.	60-90			
110-120	90		solid sulfide. sphalerite, pyrite, galena. 125-2" sphal. py. 126-3" bands sphal.				
120-130			Argillite interbanded grey & green. minor qte. Minor bands and fractured fills of (py) sphal.,	5-10			
			galena. core angle 60°. minor gal. 121-½" band sphal.				
130-140	98		Argillite interbands grey green - minor bands Qte. minor py bands bedding angle 75°-80°,				
			core angle 10°-15°				
140-150	98		Argillite interbands grey green - minor bands Qte, core angle 30°-40°, crumbly 143				
150-160	98		Argillite. interbands grey, black, green, minor qte. bands. bedding 60°				
160-170	95		as above core angle 45°				

DATE _____ LOGGED BY D.E.P./G.L.

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of 2
Lat.	Elev.	Dip	Lat.	Elev.	Dip
Dep.	Depth	Bearing	Dep.	Depth	Bearing

Hole No. 95 95

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz/T Ag	% oz/T
170-177	98		Argillite. interbands grey, black, green, minor Qte bands. crumbly green argillite								
			END OF HOLE (CASING PULLED)								
			Assays								
104-110						P4192	6	4.96	24.00	1.93	0. / 0.
110-115						P4193	5	6.08	22.00	2.34	0. / 0.
115-118						P4194	3	7.52	19.60	3.10	0. / 0.
118-120						P4195	6	1.88	4.30	.87	0.
124-127						P4196	3	4.16	5.20	1.49	0.

DATE _____ LOGGED BY _____

NORANDA EXPLORATION COMPANY, LIMITED

"K"

Collared	Completed	Core Size	Property	Project No	NTS No.
14 May/75	15 May/75	BQ	Quartz Lake, Yukon	912	95D/1

FIELD COORDINATES			SURVEYED COORDINATES			Sheet
Lat. 9+52N	Elev.	Dip -90°	Lat. 100,837	Elev. 517	Dip -90°	Hole No.
Dep. 0+00E	Depth	Bearing	Dep. 99,997	Depth 178	Bearing	96 96

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-64			Overburden. Bedrock at 64. Casing reamed to 84				
64-80	30-40		Quartzite, grey, some pink. minor argillite. py. stringers at 73-75				
80-90	80-90		Argillite - interbands grey, pink grey, core angle 60°, minor qte. bands - core angle 50°				
			many deformed bands - core angle 70°				
90-100	90		Argillite - interbands pink green buff bands, core angle 75°-80°. hard silic. material or grey				
			qte. core angle 65°				
100-110	95		Interbands green Arg. and grey Qte. minor strgrs. sphal. galena (1mm) @ 105 ½" massive sulf.				
			(sph.qzl.py)				
110-120	80-85		Interbands green argillite and grey qte. minor py. specs. core angle 75°-90°, 75°-85°, very				
			crumbly qtze pebbles in soft aug. & qte.				
120-130	30-50		Argillite and Quartzite bands @ 80°-90°. Crumbly broken				
130-140	30-40		Argillite, grey, some qte. 136.5 few rounded pebbles. solid sulfide sphal. galena py.				
140-150	95		Arg.bands - mostly green - some qte. few py. specs. core angle 60°-70°. broken qte. pebbles, mature				
			milky buff qte.				
150-160	85-90		Arg. interbds. green & grey and qte. - parts crumbly bands 70°-90°. core angle 70°				

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NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet of
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 96
Dep.	Depth	Bearing	Dep.	Depth	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz T/ Ag	% oz.
160-170	90		Bands green grey-black Arg. & Qte.(grey) Core angle 60°-80°								
170-178	95		Arg.green black bands - crumbly with qte.pebbles - some qte bands. core angle 60°-70 °								
			END OF HOLE (CASING PULLED)								
			Assays								
125-130						P4197	5	.04	.06	.06	0.
130-135						P4198	5	.04	.06	.04	0.
135-140						P4199	5	.74	2.30	.29	0.

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"M"

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Project No	NTS No.
16 May/75	17 May/75	BQ	Quartz Lake, Yukon	912	95D/12

FIELD COORDINATES			SURVEYED COORDINATES			Sheet 1 of
Lat.	Elev.	Dip	Lat. 100,964	Elev. 518.6	Dip -90°	Hole No. 97
Dep.	Depth	Bearing	Dep. 100,115	Depth 194	Bearing	97

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.				
0-92			Overburden. Casing 92'								
92-100	30-40		Core badly broken rounded and angular pebbles and broken chunks. Mostly grey & pink qtzite,								
100-110	20		some argillite as above								
110-113	20-25		Qtzite pebbles, very powdery, crumbly								
113-120	90-95		Mineralized zone sphal., galena, py. 115.5 to 116.0 massive pyrite								
120-126.5	97		Mineralized zone sphal., galena, py. 124.0 to 124.4 massive pyrite								
126.5-130	95		Arg.(green,grey)+ qtzite bands								
130-140	98		Arg.(green,grey) + qtzite bands, bands at 40° Core angle 25°								
140-150	97		Interbands green Arg. and qtzite nodules and lenses of qtzite in Arg. - parts crumbly & soft.								
			core angle 35-40°								
150-160	99		Arg.-green plus bands lenses, nodules of qtzite (grey) part of core soft & crumbly.core angle								
			15-25°								
160-170	95-98		Interbands green & grey Arg. and grey qtzite. Lenses & nodules of qtzite in Arg. core banding								
			40°-60°								
170-180	95		Interbands green & grey Arg. some bands, lenses and nodules (qtzite-grey) core banding 40°-60°								

DATE _____ LOGGED BY D.E.P./G.L.

"M"

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No 112	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of 2
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 97
Dep.	Depth	Bearing	Dep.	Depth	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz/T Ag	% Cu / oz/T Au
180-190	85		Core angle banding 40-70° same as 170-180								
190-194	70-80		Soft, crumbly, light grey Arg. some qtzite inclusions. core angle 70°-80°								
			END OF HOLE (CASING PULLED)								
			Assays								
113-118						P4200	5	5.94	9.40	2.34	0.0 / 0.0
118-123						P5851	5	1.76	7.60	0.82	0.0 / 0.0
123-128						P5852	5	4.96	16.60	2.19	0.0 / 0.0

DATE _____ LOGGED BY _____

"O"

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Project No	NTS No.
17 May/75	18 May/75	BQ	Quartz Lake, Yukon	912	95 D/12

FIELD COORDINATES			SURVEYED COORDINATES				
Lat. 13+00N	Elev. 537.5	Dip -90°	Lat. 101,161	Elev. 537.5	Dip -90°	Sheet 1 of	
Dep. 1+20E	Depth 268	Bearing	Dep. 100,156	Depth 268'	Bearing	Hole No. 98	98

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.				
0-117			Overburden Casing to 117								
117-125	40-50		Interbands pink Arg. and grey qtzite. core broken Also many semi-rounded pebbles. core angle 20-30°								
			Core angle 25-35°								
125-130	80		Interbands Arg.(grey,pink) and grey qtzite core angle 60°.parts crumbly & badly broken.								
130-140	70		Arg.(pink,grey)minor bands grey qtzite core angle 70-80°,parts crumbly & badly broken, core angle								
			60°								
140-150	97		Interbands(grey,pink,green)Arg.Minor grey qtzite bands.141-143 crumbly,broken.Core angle 50-60°								
			Core angle 35-45°								
150-160	99		Interbands grey & green Arg. core angle 30-40° very minor grey qtzite core angle 30-40°								
160-170	80		Arg.interbands grey & green - minor stringers of pyr @ 162.5 core angle 35°.specks of py,rare qtzite								
			core angle 25-30°								
170-180	70		Interbands Arg.,grey & green. core angle 40-50° Minor qtzite bands 176.5-177.5-grey qtzite(some								
			dark) with fine green Arg. stringers core angle 50-60°								
180-190	60-70		Interbands grey qtzite and green & grey Arg.core angle 60-70°.minor bands of clear qtzite.core								
			angle 60-70°								

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"O"

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of 3
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No.
Dep.	Depth	Bearing	Dep.	Depth	Bearing	98

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
190-200	70%		Interbands Arg.(grey,green)and minor grey qtzite core angle 45°.198-200 dark grey,black,crumbly Arg. core angle 60°				
200-205	70		Green & grey Arg.-some qtzite.some carbonates CO_3 in mineralized zones. 202.0-205.0 massive sulph.(py,sph.,gal)in narrow bands,lenses,core badly broken,pebbles(poss.cave)etc.204-205-				
205-217.5	95		crumbly,semi rounded pebbles. Mineralization-Mass.sph.py,gal.,solid & bands or lenses.206-208 - high py.				
217.5-230	95		Arg.interbands,grey,green,black,some grey qtzite lenses,nodules,bands 217.5-220-core crumbly,qtzite inclusions. core angle 50-60°				
230-240			230-235-Arg.green&grey,with minor qtzite(grey) lenses, bands, nodules.235-240-qtzite bands, ~~core angle 50-60°,lenses,nodules and sooty py.~~ core angle 40-60°,in soft graphitic material, py, fine-gr. sooty C/A 50°				
240-250	90		Black graphitic qtzite and py. lenses, py fine gr.sooty bands, etc. graphitic lenses & partings mottled appearance. Core angle 40°				
250-268	95-97		Black graphitic qtzite and py lenses (fine gr., sooty) Mottled appearance,graphitic partins. Core angle 40-60°				
			END OF HOLE (CASING PULLED)				

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"O"

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Project No	NTS No.
					Sheet 3 of 3

FIELD COORDINATES			SURVEYED COORDINATES			
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 98
Dep.	Depth	Bearing	Dep.	Depth	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz/T Ag	% C oz/T
			Assays								
198-202						P5853	4	0.34	0.34	0.12	0.0
202-207						P5854	5	4.96	11.60	1.98	0.0 0.0
207-212						P5855	5	1.92	4.60	0.70	0.0 0.0
212-230						P5856	5½	1.60	7.60	0.64	0.0 0.0

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"N"

NORANDA EXPLORATION COMPANY, LIMITED

Collared 19 May/75	Completed 20 May/75	Core Size BQ	Property Quartz Lake, Yukon	Project No 912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of 1
Lat. 12+00N	Elev. 541.3	Dip -90°	Lat. 101,047	Elev. 541.3	Dip -90°	Hole No. 99
Dep. 2+15E	Depth 250'	Bearing	Dep. 100,238	Depth 250'	Bearing

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-110			Overburden Casing reamed to 120				
110-125	75		Argillite interbanded grey, pink and grey qte semi rounded qte pebbles. C/A 50-60°				
125-130	60		Quartzite interbanded grey with pink argillite. core angle 45°, core badly broken				
130-140	85-90		Interbanded grey green pink Arg. some grey Qte core angle 50-60°, 30-40°, 30-40°				
140-150	90-95		Interbanded green Arg. and grey Qte Core angle 45-50°-60°.				
150-160	95		Interbanded Green & grey Arg. Core angle 70°, core angle 20°				
160-170	60		Arg. green and grey very minor Qte bands				
170-180	95		core angle 45-50°				
180-190	95		Interbanded Arg (green, grey) C/A 50°, some black partings C/A 40°, minor grey Qte bands C/A 60°				
190-200	30		Interband Arg. (grey, green & grey Qte. badly broken pieces C/A 40-50°				
200-210	60		Grey Qte interbanded with some grey-green Arg C/A 60°, C/A 65°				
210-220	60-70		Grey & whitish Qte C/A 80° minor Arg. 50-60°				
220-230	85		Grey Qte minor Arg. (225-230) interb. lenses of grey Qte. Green crumbly Arg. C/A 70-80°				
230-240	75		230-236 green crumbly Arg., minor Qte, 236-242 interband. greengrey Arg. grey-whitish Qte, crumbly				
240-250	80-85		Quartz-Graphite with narrow shaly & graphitic zones. Narrow zones (few inches) fine-gr. "sooty" pyrite - crumbly				

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"L"

NORANDA EXPLORATION COMPANY, LIMITED

Collared 20 May/75	Completed 21 May/75	Core Size BQ	Property Quartz Lake, Yukon		Project No 912	NTS No. 95D/1
FIELD COORDINATES			SURVEYED COORDINATES			Sheet 1 of 1
Lat. 10+00N	Elev.	Dip	Lat. 100,854	Elev. 517.9	Dip -90°	Hole No.
Dep. 2+24E	Depth	Bearing	Dep. 100,224	Depth 175	Bearing	100 100

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz T/ Ag	% oz/T
0-98			Overburden Casing to 98 ft.								
98-110	95		Interbanded arg.(green,pink) and qtzite(grey & clearish grey), core angle 60°70°.								
110-120	50-60		Interbanded Arg.(pink & green) and grey qtzite. core angle 50°-80°								
120-130	50		Interbanded pink,grey qtzite and green/pink arg. core badly broken & crumbly @ 123 & 125-130.								
			Core angle 50°-60°								
130-143	10		(?) quartzite and argillite								
143-150.3	90		mineralization. massive sphal. py,galena								
150.3-160	60		pale green crumbly Arg. with some bands of grey quartzite								
160-175	20-30		pale green crumbly Argillite and grey quartzite								
			badly broken								
			END OF HOLE (PULLED CASING)								
			Assay Sections								
126-138						P5859	3	0.18	0.28	0.01	
138-140						P5860	0.5	0.02	0.02	0.01	
140-141						P5861	0.4	0.04	0.08	0.03	

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"L"

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet of
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 10
Dep.	Depth	Bearing	Dep.	Depth	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz T/ Ag	% C oz T
141-143						P5862	0.9	0.02	0.01	0.03	
143-148						P5863	5	3.12	5.00	1.08	
148-151						P5864	2.7	0.06	0.18	0.03	

DATE _____ LOGGED BY _____

"J"

NORANDA EXPLORATION COMPANY, LIMITED

Collared 21 May/75	Completed 22 May/75	Core Size BQ	Property Quartz Lake, Yukon	Project No 912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of 1
Lat. 8+05N	Elev. 508.6	Dip -90°	Lat. 100,659	Elev. 508.6	Dip -90°	Hole No.
Dep. 2+15E	Depth 150'	Bearing	Dep 100,194	Depth 150'	Bearing	101

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz T/ Ag	% C oz/T
0-3			Overburden Casing at 77 ft.						1		
3-20	20		Semi rounded grey qtzite Pebbles and some green Arg.								
80-90	85		Interbands grey & clearish grey qtzite with some green Arg. Core angle 80°, Core angle 60-70°								
90-100	85-90		Interbanded green Arg. and grey qtzite. Core angle 70-80°								
100-105	"		Grey/clearish grey qtzite. partings of green Arg. 103-105 minor py zones. Core angle 70-80°								
105-120.1	"		105-115 massive sulphides, sphal, gal, py. 115-116.5 barren CO_3, 116.5-120.1 sulphides, sphal. gal. and py.								
120.1-130	95		Interbanded green Arg. and grey (clearish grey) qtzite. core broken and crumbly								
130-150	90-95		Interbanded Arg. (grey and green) and grey qtzte. parts crumbly core angle 40-60°								
			END OF HOLE (CASING PULLED)								
			Assay Sections								
105-110						P5865	5	7.36	24.00	3.62	0.04 0.00
110-112.5						P5866	2½	3.20	19.00	1.66	0.02 0.00
112.5-116.5						P5867	4	0.12	0.44	0.11	
116.5-120.5						P5868	4	4.60	12.40	2.10	

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"H"

NORANDA EXPLORATION COMPANY, LIMITED

Collared 22/5/75	Completed 23/5/75	Core Size BQ	Property Quartz Lake, Yukon	Project No 912	NTS No. 95D/1
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of 2
Lat. 6+96N	Elev. 508.7	Dip -90°	Lat	Elev. 508.7	Dip -90°	Hole No.
Dep. 1+10E	Depth 152'	Bearing	Dep	Depth 152'	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-47			overburden ? casing reamed to 73				
47-60	15-20		Qtzite, grey Core broken, semi rounded pebbles				
60-70	30		Qtzite, grey minor arg. green Core broken, pebbles, cobbles				
70-80	60		Interbanded grey and clearish grey qtzite with some green Arg. core angle 80°				
80-90	98		Interbanded grey & clearish grey C/A 80° qtzite with green & grey Arg. 86-87 motley white				
			qtzite C/A 50°				
90-100	96		Grey & clearish grey qtzite with interbands of green Arg. C/A 70°				
110-113	75		Grey qtzite with interbands of Green Arg. some grey C/A 70°				
113-120	40		Mineralization, py, sph, gal.				
120-130	20		120-121 -stringers & lenses of sulph, py, sphl., gal. Broken core, semi rounded pebbles, mostly				
			grey qtzite, core angle 60-75°				
130-140	80		Interbands of grey & dark grey qtzite with green Arg. Core angle 30-40°. 135-140 green,				
			crumbly Arg. with qtz lenses, bands C/A 80°				
140-150	70-80		Green & grey Arg. with some grey qtzite bands Core broken and crumbly				
150-152	50-60		Interbands of grey & dark grey Arg. and some grey qtzite bands (partly graphitic?)				

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"H"

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No 912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of 2
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 102
Dep.	Depth	Bearing	Dep.	Depth	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz T/ Ag	% / oz/T
			END OF HOLE (CASING PULLED)								
			Assay Sections								
106-113						P5869	2.8	0.02	0.06	0.01	
113-114						P5870	0.4	0.56	2.76	0.35	
114-116						P5871	0.6	0.60	7.20	0.44	
116-118						P5872	0.6	0.36	7.00	0.35	
118-121						P5873	1.8	2.48	7.00	0.58	

DATE LOGGED BY

"E"

NORANDA EXPLORATION COMPANY, LIMITED

Collared 24/5/75	Completed 25/5/75	Core Size BQ	Property Quartz Lake, Yukon	Project No 912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of 1
Lat. 5+00N	Elev. 512.1	Dip -90°	Lat. 100,365N	Elev. 512.1	Dip -90°	Hole No. 103 10
Dep. 1+07E	Depth 175'	Bearing	Dep. 100,050E	Depth 175'	Bearing

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-46.5			Overburden Casing Reamed to 59'				
46.5-60	90		46.5-47 conglomerate:47-56 grey Qte some CO_3 56-57.5 limestone:-60 green Arg.minor Qte				
60-70	98		bands of grey & milky Qte C/A 60-70: with minor green Arg.bands C/A 85°,Core angle 50°				
70-80	95		Interbands grey milky Qte with green & grey Arg. Core angle 70-80°				
80-90	95		Grey Qte & minor greenish Arg. & silic. lime-stone. 88.5-90 shaly Ls,core angle 70°				
90-100	97		Dark silic. grey Lst. and shaly limestone				
100-111	98		Dark gr. silic. and shaly limestone				
111-120	70		green Arg. minor grey Qte				
120-130	97		Interbands green & grey Arg. minor grey Qte Core angle 60-70 126 2-3" massive sphal.				
130-140	95		Interbands green & grey Arg.minor grey Qte. Stringers & specs sulfides py,sphal,galena	1%+			
140-150	97		Interbands Green & green Arg.minor grey Qte stringers spec. sulfides py.sphal.galena(massive				
			sulfide & 145.5) 3" wide	1+			
150-160	98		Interbands green & grey Arg.minor grey Qte Stringers & specs sulfides py,sphal.galena				
160-170	95		Green with some pink Arg. very minor Qte, minor strgrs & specs py,sphal,galena,broken & crumbly	1+			
170-175			Green with some pink Arg. very minor Qte				

END OF HOLE (CASING PULLED) DATE LOGGED BY G.Lee

NORANDA EXPLORATION COMPANY, LIMITED

ollared	Completed	Core Size BQ	Property Quartz Lake, Yukon	Project No 912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of 2
at.	Elev.	Dip	Lat. 100,288N	Elev. 533.8	Dip -90°	Hole No. 104
ep.	Depth	Bearing	Dep. 100,240E	Depth 265'	Bearing

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
– 20			Overburden Casing to 120				
20– 30	97		Interbands Arg.,pink,purplish,pink,greenish grey and grey qtzite C/A 60-70°,very minor py				
			specks and stringers C/A 70°				
30– 40	97		Interbands Arg.,green,pink,purplish pink,and grey qtzite C/A 70°,very minor py specks &				
			stringers C/A 50-60°				
40– 50	95		Interbands purplish pink,grey & pink Arg. with minor grey qtzite C/A 60-70°				
50– 60	95		Interbands Arg.,green,pink,purplish pink,grey with very minor grey qtzite. core angle 60-70°				
60– 70	95		Interbands Arg.,green,pink,purplish pink,and minor qtzite.Parts of Arg.core crumbly:1.C/A 20°				
			2.C/A70°,3.C/A 20°				
70– 80	97		Interbands Arg.,green,pink and qtzite,grey and milky white,very minor specks & narrow stringers				
			py. 1. C/A 60-70°, 2. C/A 45°				
80– 90	90		Interbands qtzite (grey & milky white) and Arg., pink, green, purplish pink. Minor specks py.				
			1. C/A 70°, 2. C/A 60°				
90– 00	90– 95		Interbands green Arg. and qtzite (grey & milky white).Minor specks py. 1. C/A 60-70°, 2.C/A80°,				
			3. C/A 70°				

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NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Project No	NTS No.
			Quartz Lake, Yukon	912	95D/1

FIELD COORDINATES			SURVEYED COORDINATES			Sheet 2 of 2
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No.
Dep.	Depth	Bearing	Dep.	Depth	Bearing	104

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.				
200-210	95		Green & greyish Arg. interbands. Numerous grey qtzite lenses & bands. Parts of core crumbly, soft, Core angle 80°								
210-220	97		Interbands grey & green Arg. very minor py. Core angle 70-80°								
220-230	97		Interbands grey and green Arg. very minor grey qtzite. Core angle 70-80°								
230-240	97		Green Arg. & minor bands grey & milky white qtzite. 1. C/A 60°, 2. C/A 70°								
240-250	97		Interbands grey & green Arg. Minor grey & milky white bands of qtzite. Core angle 70°								
250-260	95		Interbands green & grey Arg. with minor bands grey & milky white qtzite. Parts crumble(pale green Arg.) Core angle 70-80°								
260-265	?		Interbands grey & green Arg. & grey & milky white qtzite.								
			END OF HOLE (CASING PULLED)								

DATE LOGGED BY D.E.P./G.L.

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size BQ	Property Quartz Lake, Y.T.	Project No 912	NTS No. 95D/1
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of 2
Lat. 0+30N	Elev. 521.6	Dip -90°	Lat. 101,393.2	Elev. 521.6	Dip -90°	Hole No.
Dep. 1+22E	Depth 292	Bearing	Dep. 100,184.2	Depth 292	Bearing	105

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-114			Overburden. Casing @114'				
114-120	80		114-117.6 Purple Arg. minor grey QTZTE Interbands 117.6-120 Interbands green & pink Arg.(crumbly, broken,sheared) c/a 70-80°				
120-140	96		ARGILLITE interbands purple, green and pink with minor bands, lense of grey qtzte. minor specs & stringers py. c/a 60-80°				
140-150	95		Interbands pink,green & purple ARG.(rainbow effect). c/a 70°.				
150-180	96		Interbands purple, pink & green ARG.with minor bands grey milky white QTZTE. c/a 60-70°				
			160-5 green, pink ARG.minor QTZTE. core scft, crumbly,sheared. broken				
			165-166.5 purple ARG. minor bds. grey qtzte. 165-170 interbands green, pink ARG. minor grey QTZTE. Minor specs & stringers of Pyrite.				
180-194	95		ARG. Interbands & laminations of green-pink with minor grey QTZTE bands. Deformed bands at 188'. crumbly, soft gouge @ 188.7-189.7; milky white QTZTE str.& bds @ 193'. minor py. specs & stringers				
194-228	97		Green ARG. Minor grey ARG. stringers and narrow bands. minor specs and stringers py. associated with grey ARG. 2" grey QTZTE at 200'. 4" crumbly gouge (green Arg.) at 221,226				

DATE LOGGED BY

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Y.T.	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of 2
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 105
Dep.	Depth	Bearing	Dep.	Depth	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz/T Ag	%
228-243	95		Green ARG. minor grey QTZTE bands. Minor py specs & stringers								
243-245.5	90		QTZTE grey, pinkish, purple and milky white (silic.Arg?) with laminations grey Arg. Pale green crumbly sheared ARG.								
245.5-246.5	90		Pale green crumbly sheared ARG. with QTZTE fragments.								
246.5-248	95		Massive sulfides sphalerite, galena and pyrite.			246-251 P5880	5	2.32	4.40	.93	
248-250	95		Sooty pyrite and crumbly, sheared pale green ARG.Minor sphal. galena								
250-256	95		Pale green Arg. - soft, crumbly, sheared			251-256 P5881	5	.04	.01	.01	
256-278	95		Grey to black carbonaceous zones. core soft, crumbly @ 274 sub rounded to angular QTZTE			256-261 P5882	5	.04	.01	.01	
			fragments in sooty carbonaceous matrix (graphitic) (4"). 2-6 inch zones grey qtzte			261-266 P5883	5	.02	.01	.01	
			at 266.7,268,273.5. Narrow bands pyrite.								
278-292	95		Dirty grey to milky white QTZTE with laminations & stringers black carbonaceous material. Narrow								
			irregular bands stringers of f.g. py. Deformed laminations grey QTZTE.								
			END OF HOLE - CASING PULLED								

DATE _____ LOGGED BY _____

NORANDA EXPLORATION COMPANY, LIMITED

"R"

Collared	Completed	Core Size BQ	Property Quartz Lake, Y.T.	Project No 912	NTS No. 95D/1
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of 2
Lat. 0+07W	Elev.	Dip	Lat. 101,467.4	Elev. 500.3	Dip -90°	Hole No.
Dep. 15+92N	Depth	Bearing	Dep. 100,063.5	Depth 250	Bearing	106 106

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-86			Overburden. Sand gravel, boulders. Casing to 86' Bedrock 86'				
			ARG. Interbands purple, pink minor deformation & folding. minor bands green Arg. C/A 30-45°				
86-108.3	95		101-103 Gouge. sheared crumbly				
108.3-128	95		Interbands, partings laminations purple, pink & green ARG. 115-2" grey QTZTE. minor py specs				
128-134.5	95		same. minor deformation. Core angle 70°				
134.5-136	85		4"milky white QTZTE @ 128.5. ARG. pink,green sheared gouge. minor QTZE frag. ¼" lens sphal.				
			galena @ 135.6				
136-142	85		Green ARG. minor grey QTZE. broken core. Much gouge. minor py specs.				
142-155	80		same. minor deformation. Minor Pyrite. Grey QTZTE. bands. frgs. lens in pale green soft				
			crumbly sheared ARG.				
155-161	95		Green, pinkish ARG. as interbands, laminations & partings, with grey green to pink QTZE (silic.				
			arg.?) minor py. @ 162,168,170 - 4"-6" zones QTZTE frags in pale green sheared crumbly ARG.				
161-179			QTZTE - grey to white with laminations green ARG.				
179-180	95		minor f.g. sooty pyrite				
180-181.6			ARG. pale green, soft, sheared, crumbly sub round to angular QTZTE frags.				

DATE _____ LOGGED BY G.Lee

NORANDA EXPLORATION COMPANY, LIMITED

"R"

Collared	Completed	Core Size	Property	Project No	NTS No.
					Sheet 2 of 2

FIELD COORDINATES			SURVEYED COORDINATES			Hole No.
Lat.	Elev.	Dip	Lat.	Elev.	Dip	106
Dep.	Depth	Bearing	Dep.	Depth	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	%Zn	%Pb	oz/T Ag	% C oz/T
181.6-195.7	95		Interbanded green grey ARG. with grey and milky grey QTZTE. C/A 60-70°			180-185 P5751	5	0.04	0.02	0.04	
195.7-196.2	95		Massive sulfide Sphal. Galena, Pyrite	185-190		P5752	5	0.40	0.02	0.02	.01
				195-200		P5884	5	13.0	4.96	2.21	0.01
196.2-197.0	95		Green ARG.								
197.0-198.0	95		Massive sulfide sphal. galena, pyrite								
198.0-199	95		f.g. sooty pyrite. minor sphal. galena								
199-201	95		f.g. pyrite. minor green ARG. grey QTZTE								
201-202.5	95		Green Arg. Grey QTZTE. minor pyrite	200-204		P5885	5	.20	.02	.11	
202.5-208	95		Pale green soft crumbly sheared ARG. with QTZTE lens. frags.			P5753 204-209	5	0.02	0.02	0.01	
208-225	80		(black fault) soft grey to black carbonaceous material, lens & frag. QTZTE.208-216 highly sheared			209-214 P5754	5	0.01	0.02	0.01	
			210-211.3 grey QTZTE. f.g. pyrite lens. lamin. common. Grey & milky white QTZTE with carbonaceous			214-219 P5755	5	0.01	0.02	0.01	
225-250	95		(graphitic)banded, laminated and contorted. as above. f.g. pyrite common in QTZTE.			219-225 P5756	5	0.01	0.02	0.01	
			END OF HOLE. CASING PULLED								

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NORANDA EXPLORATION COMPANY, LIMITED

Collared 9/6/75	Completed 10/6/75	Core Size BQ	Property Quartz Lake, Yukon	Project No 912	NTS No. 95D/1
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of 2
Lat.	Elev.	Dip	Lat. 101,633.0	Elev. 503.8	Dip -90°	Hole No. 107
Dep.	Depth	Bearing	Dep. 100,295.9	Depth 348	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Zn	% Pb	oz/T Ag
0-117			Overburden. Casing at 117'							
117-120	60		Pink green ARG. Core angle 50							
120-130	90		Interbanded pink grey QTZTE (silic.ARG?) Minor strgrs & specks f.g. pyrite	2+						
130-162	95		Green ARG. & minor grey qtzte.(laminated & narrow bands)Minor strgrs & specs. f.g. py	0.5						
162-164	95		Green & grey ARG.bands minor grey QTZTE bands minor fine py. C/A indistinct-deformation alteration of Argillite							
164-173	95		Green ARG. bands grey ARG. Minor pyrite specs.							
173-188										
188-189	95		Grey QTZTE fragments in soft crumbly sheared pale green ARG. Green ARG. - interbands laminations of grey QTZTE minor pyrite							
189-205										
205-206			Grey QTZTE frags in crumbly soft pale green ARG. sheared. C/A indistinct							
206-210	90		Frags & narrow bands grey QTZTE in green ARG. 208.5-1/8"-1/4" sphal.galena.209.0 1" band sphal. galena. c/a indistinct			208-209.8 P5886	1.8	4.20	0.34	0.15
210-228	95		Narrow bands, lens, frags. grey QTZTE in green ARG. Minor specs strgrs pyrite							

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NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Yukon	Project No	NTS No. 95D
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 107
Dep.	Depth	Bearing	Dep.	Depth	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	Pb	Zn	Ag
228-255	95		Interbanded green ARG. Minor py. gouge @ 244 1'. core angle 50-70							
255-257	95		sheared pale Grey QTZTE frags in soft crumbly green ARG.							
257-260	95		Grey QTZTE bands separated by pale green soft ARG. laminations							
260-264	95		Interbands grey & green ARG.							
264-279	95		Dirty grey QTZTE frags bands in soft crumbly sheared pale green ARG.							
279-282			Sooty fine gr. pyrite							
282-300	98		Grey QTZTE frags lens bands in dark grey to black carbonaceous material (black thrust fault?)	5		290-295 P5757	5	0.02	0.01	0.01
			Bands or strgrs fine gr. pyrite common							
300-302	98		Grey QTZTE - laminations graphitic pyritic material	5						
302-309	98		Interbands laminations grey QTZTE and graphitic ARG. pyrite common.	5						
309-311	98		Grey QTZTE frags & lens in black graphitic material							
311-314	98		grey to dark grey QTZTE							
314-348	98		Interbanded-laminated grey to black carbonaceous (graphitic) material and grey QTZTE. Pyrite strgrs common							
			END OF HOLE - CASING PULLED							

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NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Project No	NTS No.
11/6/75	12/6/75	BQ	Quartz Lake, Y.T.	912	95

FIELD COORDINATES			SURVEYED COORDINATES			Sheet	of
Lat. 19+80N	Elev. 497	Dip -90	Lat. 101,848.9	Elev. 497.7	Dip -90	Hole No.	
Dep. 0+08E	Depth 303	Bearing	Dep. 100,128.0	Depth 303	Bearing	108	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Zn	% Pb	oz/T Ag
0-113			Overburden Casing @113'							
113-135	95		Green Pink ARG. bands & frags QTZTE (grey). 127-128.5 pinkish Arg. QTZTE							
			~~130-131~~ 117-121 6", soft crumbly pale green ARG.(gouge?)							
135-137			purple ARG. minor narrow bands grey qtzte core angle indistinct							
137-155	98		Interbanded light purple, purple, pink, green ARG. with grey qtzte. core angle 60°							
155-162	95		Interbanded pink and green ARG. with narrow bands grey qtzte.minor py strgrs.(f.g.) c/a indistinct							
162-176.6	85		Green & pink ARG. minor grey qtzte. core badly broken.soft crumbly. c/a indistinct(deformed)banding							
176.6-179	90		Purple pink green ARG. minor narrow bands grey qtzte.							
179-180			soft crumbly							
180-193			Pink & green ARG. with narrow bands strgrs grey qtzte. Strgrs f.g. pyrite.c/a indistinct(deformation)							
193-220	90		Core soft crumbly 193-4, 198-200, 201,206-207.5, 210-210.3,210.5-211.6,214-214.5							
220-221			Grey qtzte with green ARG. laminations							
221-233	95		Green & grey ARG. minor grey qtzte. soft crumbly sheared, minor pyrite			232-237 P5887	5	3.50	1.00	0.46
233-237	95		Qtztes with some CO_3. massive sulfides sphal., galena,py.233^0-233^5,236^5-237^0							

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NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Y.T.	Project No 912	NTS No. 95D/
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No.
Dep.	Depth	Bearing	Dep.	Depth	Bearing	108

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	Pb	Zn	Ag
237-285	95		Grey to black carbonaceous with interbanded fragmented laminated grey qtzte and minor f.g. sooty pyrite.(Black Thrust Fault Zone)			255-260 P5758	5	0.02	0.01	0.01
285-303	95		Grey to black carbonaceous with interbanded fragmented laminated grey qtzte and minor f.g. sooty pyrite(Black Thrust Fault Zone)	5						
			END OF HOLE - Casing Pulled							

DATE LOGGED BY

NORANDA EXPLORATION COMPANY, LIMITED

Collared 13/6/75	Completed 14/6/75	Core Size BQ	Property Quartz Lake, Y.T.		Project No 912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES			Sheet 1 of 2
Lat. 16+48N	Elev.	Dip	Lat. 101,486.1	Elev. 526.2	Dip -90°	Hole No.
Dep. 3+40E	Depth	Bearing	Dep. 100,415.8	Depth 337	Bearing	109 109

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-130			Overburden				
130-132	100		Pale green compact unbanded few pale ARG. grey bds. @ 50°				
132-137	98		Grey green "spotted" ARG. small elliptic "boudins" to ½". long distinct contact (green to grey) at 15° to core. Small drag folds near par^{11}. 135-136 pyrite in drags & "boudins"				
137-167	98		Mostly pale green ARG. with narrow grey green bands generally 40-60°. Fairly compact to 141 than many micro-faults, breaks, small gashes with pyrite in gashes from near par^{11} to 30° to core. pyrite 1+%				
167-230	95		ARG. grey green slightly spotted with small drag folds 1" Ø @ 45° to core at 170-171,199, blocky broken parts with heavy gouge 213-215^{6}. 226' a bright striated "slick" 30° to core over 2". "Boudin" @ 203,217,217. usually in grey green ARG. @ 50° to core. Same as basic cleavage				
230-247	95+		Grades to bands grey to dark grey f.g. QTZTE with green ARG. and short gouge zones. fract. @ 45°,50°. Some white milky quartz veins (2" to 4") very broken. water return lost several times starting at end casing. 1 foot near solid py. @ 231-2.				
247-257	50		Faulted zone(?) 251-257 (4' lost core) Broken angular to sub ang. pcs. grey qtzte. Some grey green to creamy green gouge. Fine banded py. minor dissem. pyr.	2+			

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NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Quartz Lake, Y.T.	Project No	912	NTS No.	95D/1
FIELD COORDINATES			SURVEYED COORDINATES				Sheet	2 of 2
Lat.	Elev.	Dip	Lat.	Elev.	Dip		Hole No.	
Dep.	Depth	Bearing	Dep.	Depth	Bearing			109

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Zn	% Pb	oz/T Ag
257-266			Faulted zone(?). Broken angular to sub angular pcs. grey qtzte. Some grey green to creamy green							
			gouge. Fine banded py. minor dissem. pyrite. with fractured grey QTZTE and Argillaceous							
			gouge(?) (no water return)							
266-277			Grey QTZTE - some milky white qtzte. Minor green arg.partings							
277-279			Dark grey arg. qtzte. well min. fine py	5±						
279-296	100		Grey f.g. qtzte. Some chunks & strgrs white quartz. Minor pale green arg. partings. Parts sl.							
			contorted-fract.-x fract.-py, minor in fract. more compact more white qtz 287. c/a 45° steepens to							
			80° @ 287.			297-303 P5888	6	6.60	2.64	1.06
296-308	100		Grey qtzte. Well min. to near solid Zn Pb. very banded (@ 80°). 296-304 (combined) →	10		P5889 303-305	.5	0.12	0.28	0.20
			(no water return) 304-308 (combined) →	5						
308-311	100		Grey green ARG. Few bands white qtzte, parts phyllitic, occasional creamy dolomite (309-311)	2-		305.5-310.5 P5890	5	2.80	1.92	0.68
			coarsely banded and disseminated Pb,Zn,Py							
311-319	100		Grey green ARG. soft gouge. some sub angular white quartzite							
319-337	100		Quartzite - graphite (Black Thrust) much sooty py. as typ.previously(pyrite only) →	5		320-325 P5759	5	0.01	0.02	0.01
			core angle 90°							

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NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size BQ	Property Quartz Lake Y.T.		Project No 912	NTS No. 95D/
FIELD COORDINATES			SURVEYED COORDINATES			Sheet 1 of 2
Lat.	Elev.	Dip	Lat. 100,932.4N	Elev. 557.0	Dip -90°	Hole No.
Dep.	Depth	Bearing	Dep. 100,405.9E	Depth 298	Bearing	110

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz/T Ag
0-130			Overburden - Casing (gravel,sand,boulders)							
130-156	95		ARG. purple, pink, minor green to silif.Arg. bands grey, minor. c/a 50-60°. Grey green ARG.							
			to sil. Arg. to QTZTE. - some fine sil. fract. x fract. badly broken parts 160 - mud seam - 4'							
			lost core reported 168-172							
156-172	90		as above. contorted, brecciated, some 'slicks' fault(?) 60°							
172-190	95		Gashes. Boudins @ 177. Brown fr. fills @ 180 par^{ll} to core							
190-227	95		Interbands pale green ARG. & grey QTZTE - more compact & widely banded - few x fract.70-80°							
			- small drag @ 195 "boudins" @ 199 @ 70° - generally less silic.							
227-248	95		ARG. grey green- gashes & fract.230-235 small drag par^{ll} at 240							
248-252			gouge - green argillaceous							
252-258			green ARG. & QTZTE							
258-260			QTZTE - grey fractured							
260-261.5			Gouge Dr.green Arg. &Qtze with fine py							
261.5-263.5	90		solid to near solid sulfide ZnPbPy,compact with creamy buff dolomite,Est.15% comb.			261.5-267.5 P5891	6	3.76	8.80	1.52
263.5-265.5	60		- well min. to mod. Zn,Pb.Py very broken,shattered.Core angle 75° 260-270.QTZTE pebbles &							

continued over

D.F.P.

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No.
Dep.	Depth	Bearing	Dep.	Depth	Bearing	11

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz/T Ag
263.5-265.5	(cont'd)		gouge - much gouge missing(?)(Note, no water return after 151)							
265.5-267	95		Banded n.s.sulfide Pb,Zn,Py with arg.& creamy dolomite.distinct 20° graphitic slick at 267 Est.10% +							
267-270	60		Broken dk grey arg.shears & gouge.some buff dol. bands & grey QTZTE pebbles. Est.5%			267.5-271.0 P5892	3.5	2.08	5.30	0.76
270-273.5	15		Grey to milky white QTZTE very broken, shattered pieces with Zn, much py.(271-272) handfull of			271-272 P5893	1	1.00	1.80	0.38
			pebbles 15% recovered with chunks sphal,gal. fine py,major to sparse.Fract.par[11] to core			272-273 P5894	1	0.48	2.40	0.28
273.5-274			white QTZTE							
274-293			green to dk grey phyllitic ARG gouge parts fine py, bands 267. c/a 75°							
293-296	98		grades to pale green ARG. Highly sheared many fine partings							
296-298			as above with some grey QTZTE, milky QTZ, much pyrite as bands & dissem. Est. 5%							
			(Note: hole not bottomed in Black Thrust)							
			END OF HOLE - Casing Pulled							

DATE LOGGED BY

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Project No	NTS No.
			QUARTZ LAKE	912	95D/12

FIELD COORDINATES			SURVEYED COORDINATES			Sheet 1 of 2
Lat. 7+08N	Elev.	Dip	Lat. 100,542.2	Elev. 510.9	Dip -90°	Hole No. 111
Dep. 3+94E	Depth	Bearing	Dep. 100,353.6	Depth 203	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	%Zn	oz/T Ag
0-70			Overburden. Casing to 90'							
70-113.8	95		Pink ARG. with minor bands green Arg. Grey QTZTE deformation common. minor py- partings & stringers							
			Purple 92-93, 113-113.7, core angle 50-70° indistinct							
113.8-117.5	95		Grey to pinkish QTZTE - interbands & laminations of green & pink ARG. minor py specks c/a 50-70°							
117.5-125.0	95		Purple ARG. minor interbands & laminations grey QTZTE. 6" pink Arg.@120 deformed bands c/a 60°							
125.0-127.5	95		Soft crumbly sheared green & pink ARG. minor frags & bands grey qtzte. c/a 60°							
127.5-129.5	95		Purple ARG. minor bands (deformed) grey QTZTE c/a 60°							
129.5-131	95		Pink ARG. with minor bands & laminations grey quartzite c/a indistinct							
131-136	95		Purple ARG. minor bands, laminations of pink green ARG. & grey QTZTE. c/a indistinct							
136-139	93		Pink ARG. with minor bands & laminations of grey QTZTE & green ARG. minor py specs. deformation common. c/a 70-80°,							
139-141	95		Soft green crumbly sheared green ARG. minor grey QTZTE frags. minor py specs. c/a 70-80°							
141-160	98		Green ARG. with interbands. lam. grey ARG. & grey QTZTE 2"-4" gouge 154&155' c/a 70-80°							
160-164	30		Cave? green & pink Arg. (from above?)			164-169 P5895	5	1.52	8.00	0.64
164-173.5	95		Moderate mineralization. sphal. galena, pyrite. Est. 8% c/a combined Pb-Zn.			169-173.5 P5896	3.5	2.96	8.20	1.18

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NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No.
Dep.	Depth	Bearing	Dep.	Depth	Bearing	111

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.			
173.5-188	75		Footwall carbonaceous zone with lam. & bds of green ARG. soft crumbly, sheared. minor grey Quartzite frags. c/a indistinct							
188-192	95		Green and grey ARG. bands & laminations with minor grey QTZTE bands							
192-203	95		Green ARG. with minor grey qtzte bands & lam. core soft crumbly, highly sheared esp. 192,195, 200							
			END OF HOLE - Casing Pulled							

DATE LOGGED BY

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property QUARTZ LAKE, Y.T.		Project No 912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES			Sheet 1 of 2
Lat. 14+00N	Elev.	Dip	Lat. 101,223.2N	Elev. 549.5	Dip -90°	Hole No. 112
Dep. 4+00E	Depth	Bearing	Dep. 100,435.2E	Depth 347	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	%Pb	% Zn	oz/T Ag
0-145			Overburden. Casing reamed to 160'							
145-157	25		Green ARG. & grey QTZTE pebbles. Cave? c/a indistinct							
157-203	95		Green & grey ARG. Interbands. occ. grey qtzte band with f.g. py specs. core soft crumbly							
			189-191 soft crumbly shd 195.8-196.5, 201-203 c/a 50-60°							
203-248.5	95		Grey QTZTE with bands & laminations grey & green ARG. soft, crumbly, sheared 228-229 c/a variable							
			indistinct 60-80°							
248.5-278	98+		Interbands grey QTZTE & green ARG. with laminations & partings gr. ARG. c/a indistinct							
			with deformation							
278-296	98		Grey QTZTE with bands, laminations green and grey ARG. c/a 65-75° deformation							
296-321	95		as above. c/a 60-80° deformation			317-321 P5897	4	0.02	0.31	0.06
321-327	97		moderate to well min. Zn,Pb,Py. Est.8% comb.			P5898	6	2.68	8.40	1.06
327-329	97		Grey to black carbonaceous Arg. sparse py.							
329-330	97		Soft, crumbly, sheared sooty fine-gr. py - minor Zn,Pb 3% Est. 2% comb.							
330-339	95		Green & light pink Arg. with minor grey qtzte bands and fragments. Soft, crumbly sheared							
			minor py stringers & partings							

DATE LOGGED BY DP

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Y.T.	Project No 912	NTS No. 95D/1
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of 2
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 112
Dep.	Depth	Bearing	Dep.	Depth	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
339-347	97		Dk grey to black carbonaceous footwall with fragments and bands of grey quartzite				
			END OF HOLE - Casing Pulled				

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NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size BQ	Property Quartz Lake, Y.T.		Project No 912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES			Sheet 1 of 2
Lat. 16+00N	Elev.	Dip	Lat. 101,394.5	Elev. 559.3	Dip -90°	Hole No.
Dep. 6+00E	Depth	Bearing	Dep. 100,668.9	Depth 416	Bearing	113

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	% Pb	% Zn	oz/T Ag
0-203			Overburden. Casing reamed to 220 - v.blocky grnd							
203-204	100		grey contorted QTZTE - fract. w. brown gashes shear 70°							
204-208	10		mud seam(?) bands sheared grey ARG.							
208-218	60		Pale green ARG. v. broken. some mud seams c/a ind.							
218-222	25		Grey QTZTE & white QTZ grey green ARG. as chips minor py in qtzte. c/a indistinct							
222-226	95		Gouge(?) sheared grey blue ARG. and round to sub ang. sil. fragments							
226-228	50		Chips & pcs grey green ARG. & grey QTZTE. 10% of pcs. well min. py & galena(Zn?)	3+						
			228.4 sh.gougy grey arg. qtz w. min. py 228.7 white qtz vn	3+						
			228.9 sheared gougy grey green Arg.							
228-231.5	95		Grey green ARG. to grey QTZTE. mod.py c/a 60-75°	3+						
231.5-232.5	98		well min. to nearly solid sulfides Py,Pb,Zn. 60% sulfides. est. 10% comb. in gougy grey green ARG.			P5899	1	9.60	14.4	2.80
232.5-238	98		& QTZTE. milky white grey fract. QTZTE. Arg. partings. Py	5						
238-238.5	98		4" Irreg. vn. solid sulfide Py,Pb,Zn c/a 30°			237.5-238 P5900	.5	19.6	12.2	17.6
238.5-276	95		Grey green ARG. & grey QTZTE to sil. ARG. parts well min. fine py. calc. vnlts. 248. Drags & cont.							
			@ 250 269 yellow weathered fract. c/a 60-80° to 30° @ 276							

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NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property Quartz Lake, Y.T.	Project No 912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No.
Dep.	Depth	Bearing	Dep.	Depth	Bearing	113

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	%Pb	% Zn	oz/T Ag
276-304	95		same.							
304-335	95		gouge @ 296,304. c/a to 60°@ 300,70°@306,80°@ 315. w. milky white qtz veining @ 335 w Bx							
335-360	95		Grey green ARG. & grey QTZTE minor, very broken sparse.coarse diss. sphal. galena 354-360 w 1" vn well min. Pb,Zn @ 358			354-360 P5776	6	0.92	2.20	0.42
360-366.5	95		as above. Limy parts 363-6 well min. pyrite			360-366.5 P5777	6.5	0.02	0.20	0.06
366.5-368.5	95		solid sulfide pyrite.few dk gr.Aug.partings			P5901	2	0.16	0.10	0.28
368.5 371.5	95		well min. to s.s. pyrite in grey ARG. - QTZTE			P5902	3	3.12	6.20	1.12
371.5-372			s.s. pyrite			P5903	.5	0.08	1.13	0.20
372-375	75		dark graphite sheared ARG. soft broken			P5760	3	0.36	0.84	0.18
375-377	60		as above. Partly s.s. pyrite few bands minor sphal. galena			P5904	2	1.12	2.40	0.48
377-394			ARG. pale green sheared contorted - gougy broken few bands (½") grey QTZTE with pyrite. occ. Zn 391-4 well Bx with fine diss. pyrite	3+		382-387 P5761	5	0.16	0.79	0.12
						387-394 P5778	7	0.02	0.01	0.02
394-401	95		goes to grey green sheared well mineralized to nearly solid pyrite	5		P5905	3	0.36	0.86	0.20
						P5906	2	0.64	2.40	0.32
401-416			Carbonaceous zone (Black Thrust). sheared mottled grey QTZTE with graphitic partings. Parts well minerlized. fine pyrite			399-403 P5762	4	0.02	0.01	0.04
			END OF HOLE - Casing Pulled							

DATE _____ LOGGED BY _____

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size BQ	Property Quartz Lake, Y.T.		Project No 912	NTS No. 95D
FIELD COORDINATES			SURVEYED COORDINATES			Sheet 1 of
Lat. 16+00N	Elev.	Dip	Lat. 101,064.5N	Elev. 568.9	Dip -90°	Hole No.
Dep. 6+00E	Depth	Bearing	Dep. 100,612.3E	Depth 368	Bearing	114

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	Pb	Zn	Ag
0-190			Overburden. Casing to 190							
190-216	90		Green ARG. minor interbands grey Arg. & grey QTZTE. numerous soft crumbly zones.c/a indistinct							
216-260.5	90		Interbanded green and grey ARG. with grey QTZTE numerous soft crumbly zones with QTZTE frags.			255-260 P5779	5	0.02	0.01	0.04
			Folding prevalent							
260.5-263	95		QTZTE & massive sulfides also minor CO_3 mod. sphal. galena, py.261-265 Est.8% comb.Pb-Zn			260-265 P5780	5	2.04	4.60	0.68
263-266	95		QTZTE & CO_3 with stringer sulfides mod. sphal. galena, pyrite			265-270 P5781	5	0.02	0.01	0.06
266-313	95		Siliceous limestone,hard good quality core							
313-328	95		Green Arg. with minor grey qtzte and pink arg. bands							
328-337.5	95		Interbanded green & grey Arg. with qtzte. Numerous zones soft crumbly sheared. c/a indistinct							
337.5-302	92		Greyish black soft crumbly sheared ARG.							
302-359.5	95		Interbanded green & black ARG. with minor grey QTZTE. c/a 70-80. numerous soft crumbly zones							
359.5-368	95		Grey to black footwall carbonaceous zone with grey QTZTE frags & bands. Also f.g. sooty py bands							
			END OF HOLE - Casing Pulled							

DATE LOGGED BY

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size BQ	Property Quartz Lake, Y.T.	Project No 912	NTS No. 95D/1
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of
Lat. 9+15N	Elev.	Dip	Lat. 100,727.0N	Elev. 597.9	Dip -90°
Dep. 6+16E	Depth	Bearing	Dep. 100,602.4E	Depth 413	Bearing

Hole No. 115

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.	Pb	Zn	Ag
0-206			Overburden sand clay boulders Casing reamed to 202							
206-228	98		Purple, pink, maroon ARG. minor green inclus. bands & fract. QTZTE. small faults drags (215 etc) compact exc. 223-8 chlorite 'slicks'							
228-263	95		Green ARG. partings in grey shattered highly fract. QTZTE. very broken.minor fine py c/a@250	85°						
263-276	98		same as above with grey green ARG. c/a@265 65°							
276-290	98		grey green ARG minor QTZTE small drag folds @ 278 near par^{ll} c/a 280' 45-60°,c/a 288'80°							
290-298	95+		Increase grey QTZTE 1" qtz vn @ 298. sparse pyrite			293-298 P5763	5	0.16	0.84	0.06
298-303.5			Grey QTZTE & creamy buff dolomite(?) minor to mod. Zn Pb, mainly as course diss. and fine			298-303 P5764	5	0.12	1.48	0.10
			stringers. parts fair fine pyrite. Est.gr.4%							
303-5-308			Grey siliceous with white veining 1"-3" Arg. partings c/a 70°+			303-308 P5765	5	0.02	0.08	0.06
308-319	95		Siliceous Limestone greyish with white limy to silic veining							
319-366	95		Grey ARG. minor bands grey qtzte and grey to black arg. numerous soft crumbly zones							
			355-366 brown stained partings. c/a 65-85							
366-378	95		Interbanded green & pale pink ARG. minor bands QTZTE. Rsy stain partings. occ. py stringers							
378-400.5	95		Green ARG. minor qtzte grey bands - rusty stain partings - minor py stringers c/a 50-80°							

DATE LOGGED BY D.P./G.L.

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Quartz Lake, Y.T.	Project No	912	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES				Sheet 2 of 2
Lat.	Elev.	Dip	Lat.	Elev.	Dip		Hole No.
Dep.	Depth	Bearing	Dep.	Depth	Bearing		11

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
400.5 413	95		Dark grey to black footwall carbonaceous zone with grey QTZTE bands & fragments. Numerous py bands.				
			END OF HOLE - Casing Pulled				

DATE _____ LOGGED BY _____

NORANDA EXPLORATION COMPANY, LIMITED

Collared 26/6/75	Completed 28/6/75	Core Size BQ	Property QUARTZ LAKE, Y.T.	Project N912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of
Lat. 5+04S	Elev. 645.3	Dip -90°	Lat. 99,332.0N	Elev. 645.3	Dip -90°
Dep. 4+15E	Depth	Bearing	Dep. 100,234.8E	Depth 549	Bearing

Hole No. 116

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-94			Overburden - sand, clay, gravel, boulders. Casing to 94				
94-112	95		Limestone dark grey with calcite vns & strgrs. c/a indistinct				
112-119	95		LIMESTONE & GREEN ARG. - interbands. some rusty stain in strgrs & fractures				
119-190	97		ARG. interbanded green & grey minor QTZTE minor rusty stain in fract. & partings 119-150				
			soft crumbly sheared 146-147, 148-148.5, 150-151, 184-184.3, 189-190. Folding common c/a 70-80°				
190-205	95		Interbanded green ARG, grey QTZTE c/a indistinct				
205-213	95		Green ARG. minor grey QTZTE interbands. c/a indistinct 80°				
213-216	95		as above c/a 70-80°				
216-250	95		Green & grey ARG. minor grey QTZTE, soft, crumbly, sheared 241-242. c/a 70°				
250-255	95		Interbanded green ARG. & grey QTZTE c/a 70°				
255-362	95		Intbdd grey, black & green ARG. minor grey QTZTE numerous sections soft, crumbly, sheared c/a 60-80°				
362-400	95		Green ARG. with minor laminations and bands of opaque green silic. Arg. minor rusty fract. & strgrs. c/a 80°				
400-425	95		Interbands pale pink & green ARG. Qtzte @ 414.5-416.5, 422-423 c/a 80°				
425-439	95		Green ARG.				

DATE LOGGED BY

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Project No	NTS No.
			Quartz Lake, Y.T.	912	

FIELD COORDINATES			SURVEYED COORDINATES			Sheet 2 of 2
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No.
Dep.	Depth	Bearing	Dep.	Depth	Bearing	116

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.				
439-441.50	95		ARG. pale green & pink, soft crumbly, sheared								
441.50-452	95+		Interbands green & pale pink ARG. minor pale green narrow silic.ARG. bands c/a 80°								
452-487	95		as above. occasional grey QTZTE bands								
			@ 482 1" band massive pyrite. c/a 70-80°								
487-517	95		ARG. green c/a 70-80°								
517-528	95		Interbanded grey,green,pink - minor grey ARG. Qtzte bands CO_3 stringers present minor folding. c/a 70°								
528-549	95		Dark grey to black footwall carbonaceous zone with qtzte fragments & bands.minor py bands								
			(Black Thrust Quartz Graphite)								
			END OF HOLE - Casing Pulled								
			(No samples)								

DATE LOGGED BY

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size BQ	Property Quartz Lake, Y.T.		Project No 912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES			Sheet of
Lat. 5+00S	Elev.	Dip	Lat. 99,388.2N	Elev. 608.4	Dip -90°	Hole No.
Dep. 1+00E	Depth	Bearing	Dep. 99,936.8E	Depth 405	Bearing	117 - 11

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-65			Overburden. Sand clay boulders Casing to 65'				
65-97	95		Dk grey to grey limestone bds stringers calcite				
97-111	95		minor rusty stain along fractures ½" py strgr @ 97'. Green ARG. Interbanded w. minor grey ARG.				
			and grey QTZTE c/a 60-80				
111-204	97		Interbands green ARG. & grey QTZTE 151-170 numerous zones soft crumbly shd Arg. c/a 60-70° indis.				
204-208.50	95		Pale green soft crumbly sheared ARG.				
208.50-239	95		Interbands black & green ARG. minor QTZTE partings & frags. 220-240 num. crumbly shear zones				
			Arg. c/a 75-85°				
239-258	95		Green Arg. minor bands black Arg. grey QTZTE numerous zones green sheared Arg.				
258-270	95		Interbands & laminations grey, black and green Arg. & grey QTZTE. c/a 75-85°				
270-277	95		Soft green crumbly sheared ARG. minor pyrite				
277-279	95		Interbanded green ARG. and light green silic. Arg. c/a 70°				
279-289	95		Interbanded & lam. of pale pink & green ARG. with minor grey silic. ARG. bands c/a 70-85°				
289-319	95		Green ARG. interbanded occ. QTZTE bands grey qtzte 294-5				
319-339	95		Interbanded green & pale pink ARG. occ. grey QTZTE band				

DATE _____ LOGGED BY _____

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Quartz Lake, Y.T.	Project No	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES			Sheet 2 of
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No. 117
Dep.	Depth	Bearing	Dep.	Depth	Bearing	

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
339-343	95		Purple ARG. with minor bands pink & green ARG. & grey qtzte c/a 80-90°				
343-374	95		Interbands pink & green ARG. occasional grey QTZTE bands. 368-9 pale green soft shd Arg. c/a 75-85°				
374-405	95		Dk grey to black F.W.carbonacaous zone with qtzte frags & bands.				
			END OF HOLE:Casing Pulled				
			(No samples)				

DATE LOGGED BY

NORANDA EXPLORATION COMPANY, LIMITED

Collared 3/7/75	Completed 5/7/75	Core Size BQ	Property QUARTZ LAKE, Y.T.	Project No 912	NTS No. 95D/12
FIELD COORDINATES			SURVEYED COORDINATES		Sheet of
Lat.	Elev.	Dip	Lat. 101,194.6N	Elev. 584.6	Dip -90°	Hole No.
Dep.	Depth	Bearing	Dep. 100,831.6E	Depth 479	Bearing	DDH 118

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-205			Casing sand, gravel, boulders				
205-270	90		Purple, pink maroon ARG. few pale green zones. Very broken parts. c/a 60-80°				
270-327	95		Grey green ARG. broken. more strgrs and narrow gouge zones. Minor QTZTE. Broken gouge(318-320)				
			c/a indistinct. gen. shallow 30°+				
327-370	95		same. Increase in grey QTZTE: fract. x-fract. sl contorted.10" Qtz vn @ 339.c/a 40°distinct				
370-394	95		same. sl. more ARG. broken. "boudins" @ 371-2. Ls.incl.@ 382-4 c/a 70°+				
394-416	95		Grey f.g. limestone				
416-446	95		Interbanded grey green to pinkish green ARG. phyllitic. few chl. slicks and dark bands c/a 70°				
446-457	95		Interbanded green & dk grey shaly ARG. some soft and highly sheared parts				
457-462	95		Green to greenish-pink ARG.				
462-479	95		Footwall carbonaceous zone. graphite and white quartzite bands & fragments c/a 60-75°				
			END OF HOLE - Casing Pulled				

DATE LOGGED BY D.E.P.

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Project No	NTS No.
5/7/75	7/7/75	BQ	QUARTZ LAKE. Y.T.	912	95D/12

FIELD COORDINATES			SURVEYED COORDINATES			Sheet
Lat.	Elev.	Dip	Lat. 100,877.9N	Elev. 594.6	Dip -90°	Hole No.
Dep.	Depth	Bearing	Dep. 100,811.4E	Depth 446	Bearing	119

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-200			Casing				
200-315	95		grey to green interbanded ARG. very broken parts. frequent chloritic slicks in breaks. Boudins w. fine py @ 212 same as c/a 40°.small drag.(½") @ 232. occl narrow qtz vn 4" qtz vn @ 240,245				
315-335	95		green, grey interbanded ARG. parts sl. more siliceous except broken soft 323-5. 3" Bx @ qtz carb vn at 319 with visible pea size specs galena, some small py cubes				
335-350	95		grey green interbands ARG & QTZTE few narrow qtz vns & qtz carb vnlts.				
350-355	95		grey f.g. limestone with calc. fract & calc. with grey green arg. inclusions calc. fract 40-60°				
355-362	95		grey green sl. platy ARG.				
362-367	95		grey green sl. platy ARG. very broken				
367-381	95		limy contorted with phyllitic ARG. very broken parts minor Bx. minor to mod. pyrite, minor scatt. sphalerite,galena. slick @ 37'@ 65°				
381-389			green platy ARG. many fine chlorite slicks and partings @ 70°+				
389-391.5			grey fine bdd. QTZTE minor pyrite core angle 85°				
391.5-401	95		grey green gougy ARG w qtz veining and fragments mod.py parts.Bx(?) core angle 65°				

DATE July 75 LOGGED BY D.E.P.

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property QUARTZ LAKE	Project No	NTS No.
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 2 of 2
Lat.	Elev.	Dip	Lat.	Elev.	Dip	Hole No.
Dep.	Depth	Bearing	Dep.	Depth	Bearing	119

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
401-404			pale green ARG. core angle 50°				
404-433			Intband. maroon, pink, green ARG. core angle to 90°				
433-437			green to grey ARG. parts considerable calc. fractures				
437-441			carbonaceous zone with QTZTE fragments				
441-446			grey green contorted ARG.				
			END OF HOLE				
			Note: not deep enough into carbonaceous zone -				
			just at start of it)				
			Casing pulled: 70' lost when casing blasted.				
			Core Angles 210=40°, 235=65°, 255=55°, 270=55°,				
			305=65°.				

DATE _____ LOGGED BY _____

NORANDA EXPLORATION COMPANY, LIMITED

Collared	Completed	Core Size	Property	Project No.	NTS No.
7/6/75	7/16/75	BQ	QUARTZ LAKE, Y.T.	912	95D 11

FIELD COORDINATES			SURVEYED COORDINATES			Sheet
Lat. 18+00N	Elev.	Dip	Lat. 101,579.9	Elev. 589.6	Dip -90°	1 of 1
Dep. 8+00E	Depth	Bearing	Dep. 100,901.2	Depth 481	Bearing	Hole No. 120

Footage	Rec'y	Graphic Log	Description	% Sulp.	Est. Grade	Sample No.	Lt.
0-250			Overburden. Sand clay boulders - difficult boulders (230-250)				
			Note: Tri-cone broke in hole @ 240 but drilled out and recovered.				
250-269	95		Pink to maroon Argillite banded moderately sheared and broken parts.				
269-290	95		Mainly green ARG. interbanded grey-green drk grey boudins w py @ 287. c/a 70°±				
290-330	95		QTZTE minor arg. interbands grey-green qtz veining @ 294-5, broken pts 'slick' @ 302 etc. 70°				
330-341			Interbanded grey-green dk grey ARG.- minor QTZTE c/a 60-70°				
341-342			Grey limestone				
342-344			Green ARG.				
344-410			Grey limestone Calc. fract. @ vns esp. 402-408 with micro faults. Arg. partings 354-68				
410-470			Grey-green ARG. minor grey bands QTZTE, few chl 'slicks' lightly sheared & phyllitic, gouge @ 427-9. very soft parts 458				
470-481			Drkgrey to black F.W. carbonaceous zone with qtzte frags & bands. (Quartz Graphite)				
			END OF HOLE. Casing Pulled 10' casing with shoe				
			left in hole. Broke off. No samples.				

DATE July 20/75 LOGGED BY D.E. Pegg

Quartz Lake Property - Final Survey

DDH#	Collar Elevation	Coordinate North	Coordinate East	Hole Depth	Overburden	Top of Zone	Width	Pb+Zn %	Oz/T Ag
111	510.9	100,542.2	100,353.6	203		164	9.5	10.29	0.90
112	549.5	101,223.2	100,435.2	347	145	321	6	11.08	1.06
113	559.3	101,394.5	100,668.9	416	203	231.5	6.5	6.13	1.78
						368.5	3.0	9.32	1.12
						375.0	2.0	3.52	0.48
						397.0	2.0	3.04	0.32
114	568.9	101,064.5	100,612.3	368	220	260	5.0	6.64	0.68
115	597.9	100,727.0	100,602.4	413		298	5.0	1.60	0.10
116	645.3	99,332.0	100,234.8	549	-	nil	-	-	-
117	608.4	99,388.2	99,936.8	405	-	nil	-	-	-
118	584.6	101,194.6	100,831.6	479			-	-	
119	594.6	100,877.9	100,811.4	416	200	372	5	3.21	0.10
120	589.6	101,579.9	100,901.2	481	250	nil	-	-	-

TOTAL # DDH - 27

TOTAL FOOTAGE - 8299

AU DDH [redacted]
DEPTH - 307.37

DEEPEST DDH - 549

QUARTZ LAKE PROPERTY - FINAL SURVEY July 2, 1975 All holes vertical measurements in feet

DDH #	Collar Elevation	Coordinate North	Coordinate East	Hole Depth	Overburden	Top of Zone	Width	Pb+Zn %	Oz/T Ag	% Pb	% Zn	Grade x Thickness
94	508.9	100,496.8	99,967.6	380	55	60.3	3.7	8.52	1.29	3.12	5.40	
						67.4	1.6	7.08	0.89	1.28	5.80	
						100	45	21.35	3.33	6.69	14.66	960.75
95	507.3	100,686.5	99,976.8	177	61	104	23	20.03	1.84	4.63	15.40	460.69
96	517.0	100,875.1	99,997.5	178	64	135	5	3.04	0.29	0.74	2.30	15.20
97	518.6	100,975.3	100,117.4	194	92	113	15	15.42	1.70	4.23	11.20	231.30
98	537.5	101,162.9	100,155.4	268	117	202	15.5	10.71	1.09	2.79	7.92	166.91
99	541.3	101,048.5	100,238.5	250	110	nil	nil	nil	-	-	-	—
100	517.9	100,851.7	100,224.7	175	98	143	5	8.12	1.08	3.12	5.00	40.60
101	508.6	100,660.2	100,194.5	150	73	105	15.5	18.23	2.00	4.11	14.12	282.57
102	508.7	100,564.5	100,065.6	152	47	113	8	7.76	0.45	1.24	6.52	62.08
103	512.1	100,366.2	100,049.5	175	46.5	nil	nil	-	-	-	-	—
104	533.8	101,291.7	100,238.3	265	120	nil	nil	-	-	-	-	—
105	521.6	101,393.2	100,184.2	292	114	246	5	6.80	0.93	2.32	4.48	34
106	500.3	101,467.4	100,063.5	250	86	195	5	17.92	2.21	4.92	13.0	89.60
107	503.8	101,633.0	100,295.9	348	117	208	1.8	4.54	0.15	.34	4.20	8.17
108	497.7	101,848.9	100,128.0	303	113	232	5	4.50	0.46	1.00	3.50	22.50
109	526.2	101,486.1	100,415.8	337	130	297	6	9.24	1.06	2.64	6.60	
						297	13.5	5.92	0.76	1.93	3.99	79.92
110	557.0	100,932.4	100,405.9	298	130	261.5	12.0	9.02	1.04	2.63	6.39	108.24

SOUTH [illegible], Y.T.

Diamond Drill Log

HOLE No. 1.

Logged by H.C.G.

Depth From	Depth To	Dist.	Recovery	Angle	Rock Type and Description
0	21.5		0		Casing
	23.5	2'			Limest. Blue gray, f.g. veined by white calcite, barren. breccia ? for 1st 4 or 5 ft.
	24.5	1'	1'		Argillite - pale grey, olive, dark streaking at large angle.
	32.3	7.8	2.5'		Silicified grey limestone, minor pyrite.
	45.0	12.7	9'		Sulphides - nearly all pyrite & some sid. & shines Pb-Zn
	59.0±	14.0	6.5'	75°	Argillite - pale to dark grey, few narrow siliceous pyrite layers poss. basement contact @ 45'
	61.0	2.0	1'		Argillite with 4 narrow pyritic layers carrying some ZnS
	61.5	0.5	6"		White quartz well mineralized pyr. galena, some blende.
	62.5	1.0	1'		Argillite, pyritic bands and 3 inches white quartz
	66.0	3.5	2.5'		Argillite, olive grey, one veinlet ¼" blende & galena at 62.6
	75.0	9.0	3.0'		Argillite, veined by minor blende with several siliceous pyrite layers
	87.5	12.5	8.0'		Argillite with minor siliceous sulphide layers, some ZnS
	88.0	0.5	6"		Quartz, white, with pyrite seams
	93.0±	5.0	3'		Well mineralized silic; minor arg; fair pyr & ZnS; some PbS
	104	11.0	8'		Argillite, few pyritic layers, very little ZnS
	114.3	10.3	5'		Argillite, much more mineral, pyr. minor ZnS, in bands with silica.
115.4	127	11.6	8'	80°	Argillite, pale olive grey, with few hard quartzitic layers, color banding - ⅛" - ¼" esp. @ 120' - 124'
84.0	88.7				Better mineralization here than in following section.

Notes - sand grains 125' - 128' small - see if correlat. poss & if confined to def. horiz. don't confuse with pyr. blobs.

SOUTH DAVENPORT GROUP, Y.T. — HOLE No. 2.

Diamond Drill Log. — Logged by H. C. G.

From	Depth To	Dist.	Recovery	Angle	Rock Type and Description
0	13.5	13.5	0		Casing
	15.1	1.6	3" chips		Qtz. A,ore Silicified argillite & dolo. mineral pyr.& galena weakly
	20.3	5.2	3' 5'		Arg.Qtz.ore.Silicified Arg.& some grey limestone, modest f.g.pyr. and some Pb Zn
	21.0	0.7	6"		
	27.5	5.5	1'		Argillite - Olive to pale grey, some white silica, nearly barren.
	36.0	8.5	5'		Silicified rock, some argillite partings probably after a partly dolomitic f.g. Q.
	42.0	6.0	6"		Pyrite - fine grained.
	42.5	0.5	2"		Silicified rock and disseminated sulphides.
	44.5	2.0	1'	65° ±	Argillite - pale grey to cream. - basement arg. @ 42.5
	50.5	6.0	2.5'	55°	Argillite and f.g.Q with silicification, dolo. seams.
	51	0.5	2"		Carbonate sand, dolomitic,with some pyrite Ground
	55	4	0		No core
					Note: . . . impression that color banding appears sooner below L.S. than in D.D.H. #1
33 ?	42.5				Ore zone could have been in this zone, prob. from 36' - 42.5 (no marker for 36')

SOUTH NAMAMA GROUP, N.Z.
Diamond Drill Log

HOLE No. 3
Logged by H.C.G.

Depth From	Depth To	Dist.	Recov.	Angle	Rock Type and Description
0	16.5	16.5			Casing.
	30	13.5	13.5	75°	Limestone - grey, f.g. to dense, calcite vlets - barren.
	35	5.0	5.0		" - brecciated ¼" dk. Arg. at 34.5'
	37.2	2.2	2.2		Dolomite - pale to dk. grey, white calc. strs. very minor py. Pb, Zn (siliceous dolom.)
	41.5	4.3	4.0		Ore - f.g. pyr. ZnS, PbS & dolo. or ankerite vs. (minor quartz)
	43.5	2.0	1.5		Low grade - ankerite, veined by py, zn. & pb.
	44.0	0.5	0.5		Pyrite - minor Zn & Pb
	44.9	0.9	5"		Pale argillite, banded by repl. Zns & Py & Pb - low grade)Basement
	46.0	1.1	1'		Argillite, several Xcutting vns Zn & Pb, little pyr.)color banding 44-
	59.9	13.9	90%	65°	Argillite and thin beds dolomitic argillite, dker grey than pale arg.)ol.grn.occas
					WITH SOME HARDER , dk.grey siliceous layers of irp. f.g.q.)sand grain
					sand grns.@ 55½; ZnS Xcut fract.57½' - less than ½")46-48
	63.2	3.3	0.5		Argillite - crushed and ground core.
	69.4	6.2	5.5		Ore zone - argillite, with siliceous dolo. layers repl. by pyr. some Pb Zn
	79.3	9.7	8'	65°	Argillite, pale grey soft, minor layers of hard silic. dolomitic Q,few py.vs. and dissem. pyr.
	82	2.7	1.5		Quartzite - white, fine grained, hard, probably slightly dolomitic (perhaps med. grained qtz. calc.) interbedded with minor pale argillite.
	86.9	4.9	3.5		Quartzite and argillite, sparsely mina'd in few bands and veinlets, pyr. dns.
	91.0	4.1	3.0	70°	Argillite pale grey laminated, minor py.in gen.siliceous layers with carbonate
	93.5	2.5	2.0		Quartzite - minor arg. layers - minor f.g. pyrite.
	94.1	1.4	1.0		Argillite - minor pyr. repl.
	95.1	1.0	1.0		Calcareous quartzite or sands. f.g.quartz grains in lime cement. interbedded with argillite.
	117.5	21.6	18.0		Argillite - pale to dk. grey, few hard quartzitic layers @ 113'-113.5' minor pyrite repl. Graded bedding. espec. @ 104' with ZnS close by; barding - grey & light,some are disseminated; pyr.& ZnS @ 117.5' few grns
	118.5	1.0	8"		Quartz, white, pyrite seams.
	119.1	1.4			No core - ground.
	131.5	11.6	9'	75°	Argillite, pale, banded by dk. grey at120' - 1 sand grain.
	119.1 - 121.4				Quartz, argillite, siderite py -ZnS vein, crumpled argillite
	132.2	.0.7	8"		Pyrite & some ZnS dissem. in granular quartz after dolo' quartzite -granular pyr.

132.7	7.5	5.5	Argillite, minor Q layers, few vs. Pb Zn in first one foot - at 135 ½' contain many qtz. sand grains also 133
142.5	2.8	2.5	Mineralized quartzite layers - py, Zn, in pale grey argillite - low grade.

Note: except for vs. in arg. ore seems to be a dissem. replacement of impure sandy or quartzitic layers, possibly with a dolomitic matrix.

From 16.5 to 30 - int.bed. ls. and siliceous (i.e. clastic(?) qtz.grains) Ls - note textural diff.

SOUTH KANANGRA SHOOT, N. T. HOLE No. 4

Diamond Drill Log. Logged by R. A. D.

Depth From	Depth To	Dist.	Recov.	Angle	Rock Type and Description.
0	3.0				Casing
	13.3	10.3	4.5	65°	Olive green Arg. and pred.Q. 9-10½ veined by siderite and with pyrite abund. @ 9' & dissem. elsewhere, some sm.vlets.sphal @ 11.5' 2 specks PbS
	17.0	3.7	3.2		As above with more small veinlets ZnS; some as PbS and Pyr.
	17.8	0.8	0.8		White qtzite with siderite stringer & little dissem. ZnS
	19.2	1.4	1.4	60°	Green & silic. grey Arg. dissem. pyr. some specks ZnS
	19.8	0.6	0.1 +		much pyr. in silic. rock
	22.3	2.5	2.0		Qtzite replac. by much pyr. and fair ZnS - med. grained.
	30.0	7.7	5.5		green & grey arg. 29'-30' 1' quartz with side. & several specks ZnS & PbS
	32.8	2.8	2.4		Predom. f.g. Q. veined by siderite, 28½-3" Qtzite just before 29'
	41.0	8.2	8.0	70°	olive green A sme. sider. veinlets - U minor pyr.
	45.6	4.6	3.3		as above - more siliceous with a little Pyr.little PbS & ZnS,dissem. in fract.
	48.0	2.4	2.0		Olive green & grey A some siderite, some dissem.pyr. and several ZnS stringers (Ca 1/16") @ 46.½
	60.2	12.2	3.5		Mainly fg X'lline quartz;Mn. A coatings qtz. intergrown with fair amt. pyr. and fair ZnS espec. 52.7 to 57.2 minor PbS (much chopped & ground core
	61.9	1.7	0		Lost core
	64.3	2.4	0.2		Several pieces as above 1 @ ½" piece massive pyr. & ZnS
	73.9	9.6	2.0		Ol. green A with a few veirlets of pyr.& sphaler. intgrn. with qtz. 1 ZnS. stringer of 3/16" at 73.9
	77.7	3.8	0.5		Chopped silic. rock and quartz and sand.
	Bottom hole				

Note: 48 - 64.3 fair mineraliz. recov. 23% N.B. - No Ls noted
mineraliz. - blebs & dissem. of sphaler. in qtz. and also ZnS.veinlets Xcut bedding

- key bed - sand grains somewhere between 64.3 - 73.9 some; silica is fragmental along with introd. silica - this is about the expected or predetermined horizon.

SOUTH MAMAMI GROUP, Y.T. HOLE No. 5

Diamond Drill Log Logged by H. C. G.

Depth From	Depth to	Dist.	Recov.	Angle	Rock Type and Description
0	20.5				Casing
	33.0	18.5	12.0		Limestone, light grey first 2' then dk. grey mottled, few rusty carb. vs., weak ZnS. dissem. repl. in dolomitic ls. pale grey alteration, for 6" at 33'
	35.8	2.8	2.5		Limestone, carb. stringers, rusty
	46.7	10.9	5.5	0°-15°	Argillite and sandy ls. interbedded - rolling dip down hole ± barren - sand Ls @ 42½', 45.6
	62.7	16.0	12.0		Ore - dissem. & mass. ZnS, py, Pbs, in siderite and sandy dolo.? rock.
	64.9	2.2	2.0		Low grade py. & Zns. in siliceous dolomite and dolo. limestone.
	92	27.1	21.0	60° ?	Ore - high grade Zn, Pb. Py & dolo. vugs. & sid. areas; 73-74 low grade dolo.
	93.9	1.9	3"	45° ?	Argillite, pale grey, some py. & Zn. veining.
	100.4	6.5	8"	45° ?	Argillaceous, hard, silicified, minor. pyrite.
	101.6	1.1	4"		Pyrite - f.g. replacement.
	103.7	2.7	3"		Cherty silicified, barren, pale grey
	106.2	2.5	2"		Pyrite & zinc in siliceous rock, cherty & argillite partings.
	109.0	2.8	1'	70° ?	Pyrite, minor Zn, in cherty silica and argillite partings.
	112.0	3.0	8"		Pyrite, f.g. cherty silica, 2" pale arg. at end.

NOTE: 35.8 - 46.7 - radical angular diff. between argillaceous struct.(?) and color banding, the latter at 0° - 25° to axis of core - angle between struct. 60° ±

- note - in this section sandy Ls = siliceous Ls.

cf. hole #7 - doubt as to use to indicate warping of rock - is it a soft rock struct.?

SOUTH KARAKAKI GROUP, N.Z.

HOLE No. 7

Diamond Drill Log

Logged by R.A.J.

From	To	Dist.	Recov.	Angle	Rock Type and Description
0	63.0				Casing.
	65.0	2.0	1.5		U.F.G. limey qtzite & silic.dol. with fine grain. dissem. pyr. repl. aspec. at 64ft. Broken core.
	81.0	16.0	8.5		Ore, silic. dolom.(?) with pyr. ZnS & PbS replac. also fair siderite.
	87.1	6.0	5.0		Lt. to dk. grey f.g. l.s. with calcite stringers and some dolom (?) towards 87, breccia in part.
	100.1	13.0	9.0		Ore type rock, fg grey & white silic. & dolom.(l.s.) with in places much "siderite" some pyr. PbS & ZnS, ZnS @ 88
	130.3	30.2	16.0	70° ±	Intbed. pale green arg. & f.g. light col. l.s. with dark silic. laminated layers - some sider.
	Bottom				Replac. with assoc. & v. sparse ZnS & less PbS - no l.s. past 114'; Zn @ 129; pyr. at end. Grey bands towards bottom.
					Note - 83-84 Ls conglomeratic with thin arg.+ partings X to core 65° effen. but hard to scratch - R.B. minute black specks - silica (?) @ 68.5. Fine black dots - silica (?) in the ore.
					87 to 90 - black silica (?) grains - a hard rock.
Addend					
	87.1	90.0			
	90	91.6			Denser darker - chunky (?) dolom. v. slow fizz.; specks of pyr. locally
	91.6	93.5		70°	v.f.g. hard (siliceous ?) dolomitic arg. (R.C.M.) - @ 92 -93.5 = conglomeratic- fine few minor pyr. grains, v.minor, PbS (1 shine) at 92.5
					Note - "Siderite" = carbonate but not known def. Some of the "stylolitic" type banding at small angle to core = apparent diag. at 122½' may not be bedding. Banding at 129' (angle 25°) may be stylolitic.

ZONE				SLUDGE						REMARKS	Grade x Thickness	
Comb. Metal	Footage Range	Recov. Minz. [illegible]	Ratio [illegible]	Footage From	Wt. Feet	Oz/Ag	% Pb	% Zn	Comb. Metal			
7.1											—	①
2.2											14.95	②
				[illegible]-44.0	6.0	2.6	—	[illegible]	15.8		131.71	③
16.26	5.0	41.7	0.45	[illegible]-47.0	17.3	0.52	0.51	4.56	5.07	No core sample taken in zone	—	④
23.77	32.5	71.4	0.40	[illegible]-82.0	43.0	2.41	5.47	13.05	18.52		1081.54	⑤
10.29	8.0	50.0	0.45	[illegible]-80.0	15.0	2.46	2.46	10.1	12.76	No sludge taken between 80.0 – 85.0	314	⑦
12.56	14.0	56.0	0.47									
13.76	54.6	68.1	0.44	[illegible]-118.5	81.5	3.5	5.43	8.42	13.85	No corresponding core sample 118.5 – 146.7'		
4.83	≑62.0	≑50.0	0.63	85-145.0	26.5	0.83	2.02	3.41	5.43			
				[illegible]-160.0	15.0	1.36	0.79	3.17	3.96		1100.80	⑧
				370-160.0	123.0	2.66	4.13	6.70	10.83			
12.32	≑17.3	≑82.4	0.43	930-1090	21.0	1.93	3.30	7.10	10.40		258.72	⑨
3.10			0.64								11.47	⑩
											—	⑪
											—	⑫
											5.48	⑬
3.6[illegible]											—	⑭
											4.69	⑮
5.90											4.94	⑯
[illegible]											231.13	⑰
7.97	[illegible]	[illegible]	[illegible]	[illegible]	24.0		1.14	3.38	5.72		1348.50	⑱
31.00	[illegible]	[illegible]	[illegible]	[illegible]	44.0		1.31	9.36	[illegible]	106.8 – 130.0 drilled with plug bit	143.73	⑲
15.97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	3.72	7.52		391.13	⑳
8.93	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	4.05	[illegible]		—	㉑
7.08	13.6	52.9	0.54	[illegible]	25.0		2.22	4.86	7.08		313.29	㉒
[illegible]	19.2	[illegible]	0.50	[illegible]	30.0		1.97	4.30	5.27		15	㉓

D.D.H.	Year Drilled	Drilled By	Type of Core	Co-ordinates	Bearing	Dip Angle	Hole Length (Feet)	Overburden (Feet)	[illegible] (Feet)	Core (%)	Elev. Collar (Feet)	Depth of Min. Below Collar (Feet)	Elev. Top Min. (Feet)	Elev. Bottom Min. (Feet)	MINERALIZ… Footage From – To (Feet)	W.D. (Feet)	% [illegible]	% [illegible]	% [illegible]
1	1945	Noranda	X-Ray	100,177N 99,872E	S41°W	-80°	130.0	2.5	56.0	48.4	497.1								
(2)	"	"	"	100,030N 99,856E	S80°E	-80°	550	13.4	25.3	39.2	472.0	13.5	459.5	452.0	13.5-22.0	6.5	[illegible]	1.0	1.
(3)	"	"	"	99,850N 99,947E	S41°W	-80°	142.5	[illegible]	38.3	69.6	497.0	38.5	459.0	452.9	38.5-44.1	8.1	[illegible]	3.58	12.
4	"	"	"	100,015N 99,711E	S21°E	-87°	71.8	3.0	40.8	45.5	436.7								
(5)	"	"	"	100,018N 100,010E	S41°W	-85°	112.0	20.5	38.0	58.4	504.0	46.6	457.4	412.0	46.6-92.0	45.4	3.9	8.15	1-
(7)	"	"	"	99,986N 100,115E	S41°W	-87°	134.4	58.0	31.3	52.5	514.6	65.0	449.6	424.2	65.0-81.0 65.0-90.0	16.0 25.0	2.30 1.54	4.96 3.26	12. 9
(8)	1951	AS+R	EX	100,076N 100,005E	S5°30W	-70°	200.0	37.0	71.0	56.4	510.6	38.5	475.1	395.1	38.5-118.5 146.0-159.0	80.0 12.3	1.38 0.56	4.41 0.81	9. 4.
(9)	"	"	"	100,277N 100,030E		-90°	134.0	47.0	50.9	41.5	513.1	88.0	425.1	404.1	88.0-109.0	21.0	1.48	3.41	8.
10	"	"	"	100,477N 100,050E		-90°	225.0	69.0	28.3	35.1	510.5	119.0	391.5	387.8	119.0-123.0	3.7	1.10	1.70	1.
11	"	"	"	100,030N 100,105E		-90°	199.0	65.0	90.3	32.6	522.5								
12	"	"	"	99,851N 100,178E		-90°	36.0	36.0	38.5	61.5	528.9								
13	"	"	"	99,660N 100,149E		-90°	128.0	30.0	42.0	57.1	547.3	103.0	443.4	442.1	103.0-104.5	1.5	[illegible]	[illegible]	3.
14	"		"	99,903N [illegible]E		-90°	135.0	[illegible]	77.1	29.9	515.8								
15	1952	"		99,551N 99,955E		-90°	[illegible]	40.0	48.2	72.6	536.1	121.4	[illegible]	[illegible]	[illegible]	6.8	[illegible]	3.00	2.
16	"	"	"	100,245N 100,225E		-90°	199.0	78.0	18.5	24.7	518.4	167.3	[illegible]	346.7	167.3-169.7	1.9	[illegible]	Tr	[illegible]
(17)				100,2[illegible]N 99,93[illegible]E		-90°	[illegible]	37.5	46.2	46.8	503.7	[illegible]	[illegible]	[illegible]	[illegible]	29.0	[illegible]	[illegible]	[illegible]
(18)	"	"		100,437N 99,8[illegible]E		-90°	130.0	6.0	30.6	65.6	470.9	[illegible]	[illegible]	[illegible]	[illegible]	43.5	[illegible]	[illegible]	12.
( )				100,[illegible]N 99,[illegible]E		[illegible]	500	2.0	43.0	[illegible]	461.6	52	[illegible]	[illegible]	52-[illegible]	9.0	[illegible]	[illegible]	[illegible]
( )	"			100,931N 99,795E		-90°	195.0	38.0	77.7	52.8	514.7	[illegible]	[illegible]	344.9	126.0-[illegible]	43.3	[illegible]	1.53	[illegible]
21	"	"	"	101,119N 99,644E		-90	151.0	[illegible]	78.1	40.1	473.3		[illegible]	[illegible]					
(22)	"	"	"	101,103N 99,887E		-90°	243.0	103.8	49.2	64.7	537.1	184	[illegible]	[illegible]	192.0-217.7 184.0-217.7	25.7 33.4	1.63 1.37	2.95 2.41	8 [illegible]
				101,312N															

	% comb										Grade x Thick...	
					[illegible]-11.3	4.3	0.93	1.09	2.77	3.86		
.03	13.22	4.0	43.9	0.35	[illegible]-11.4	9.3	0.93	1.66	4.16	5.82	152.60	25
.2	9.7	6.0	34.3	0.35	[illegible]-120.5	15.5	0.91	1.49	3.52	5.01		
.59	11.75	2.7	19.0	0.31	[illegible]	17.0	1.30	3.42	9.59	13.01	176.25	26
.19	10.26	9.1	49.7	0.4	47.1-105.2	17.3	1.31(?)	3.08	8.36	11.44	198.02	
1.41	13.09	22.3	56.0	0.35							727.60	
5.2	19.7	2.2	47.0	0.21							105.34	
.35	10.36	2.7	23.0	0.2							—	
											256.65	
.12	17.73	5.9	70.[illegible]	.29							13.61	
2.7	3.24	2.0	47.6	—							—	38
											—	
											108.20	
.71	7.21	6.1	40.5	0.4							58.05	
0.6	12.9	2.8	62.5	0.3							202.50	
5.4	22.5	5.7	53.8	0.1							—	
											—	
											—	
											—	
											—	41
											24	
6.1	7.5	3.2	100.0	0.							—	
											—	
											—	
											—	

											MIN	ELEV MIN	BOTTOM MIN						% Comb	
(25)	"	"	"	101,530N 99,675E	-90°	1330	240	71.6	34.5	404.3	103.4	[illegible]	[illegible]	103.0-112.1 103.0-120.5	9.1 17.5	1.08 0.90	3.19 2.5	10.03 6.2	13.22 9.7	4.0 6.0
(26)	"	"	"	101,192N 99,944E	-90	2150	93.0	65.4	46.4	515.8	184	[illegible]	316.8	184.0-199.0	15.0	1.32	4.17	7.59	11.75	2.7
(27)	"	"	"	100,992N 99,918E	-90°	1820	71.0	59.9	45.7	514.2	147.1	357.1	343.3	147.1-165.4	19.3	1.33	3.07	7.19	10.26	9.1
(28)	1953	"	"	102,790N 99,382E	-90	1650	55.0	59.1	45.8	506.0	134.5	401.5	[illegible]	134.5-144.5	10.0	2.37	6.19	11.91	19.09	22.3
(29)	"	"	"	100,738N 100,079E	-90°	1870	73.0	72.9	33.1	520.6	133.3	387.2	[illegible]	133.3-138.0 133.3-143.2	4.7 9.7	0.8 0.52	3.50 2.31	15.2 8.55	19.7 10.36	2.2 2.7
(30)	"	"	"	100,815N 99,993E	-90	570	5.0	34.8	33.0	425.7										
(31)	"	"	"	100,730N 100,120E	-90°	1510	92.0	41.3	29.2	519.7	113.[illegible]	414.2	[illegible]	113.5-123.0	14.5	2.50	2.58	9.12	17.73	5.9
32	"	"	"	101,232N 99,997E	-90°	2170	100.0	72.8	37.9	507.3		325.5	321.3	181.3-[illegible]	4.2	Tr	0.54	2.7	3.24	2.0
33	"	"	"	101,717N 99,743E	-90°	1500	21.0	56.8	17.2	463.2										
34	"	"	"	100,731N 100,397E	-90°	1730	91.0	30.7	53.3	518.5										
(35)	"	"	"	101,075N 100,103E	-90°	2180	96.0	80.0	34.4	534.0	157.[illegible]	377.0	362.0	157.0-172.0	15.0	10.6	[illegible]	[illegible]	7.[illegible]	[illegible]
(36)	"	"	"	101,3[illegible]N 99,395E	-90°	220.5	38.0	93.7	24.8	502.5	202.[illegible]	[illegible]	[illegible]	220.5-[illegible]			2.7	1.6	12.9	2.9
(37)	"	"	"	101,500N 99,383E	-90°	2060	53.0	97.9	29.1	504.2	171.0	333.0	324.0	171.0-180.0	9.0	1.5	[illegible]	15.0	22.5	[illegible]
38	"	"	"	102,160N 99,545E	-90°	114.0	20.0	72.1	23.3	441.0										
39	"	"	"	102,363N 99,550E	-90	176.0	22.0	124.1	19.2	477.2										
40	"	"	"	101,540N 99,425E	-90	160.0	22.0	87.0	36.9	419.3										
41	"	"	"	100,547N 99,361E	-90	187.0	17.0	101.4	40.3	496.0										
(42)	"	"	"	100,328N 99,540E	-90	92.0	16.0	20.9	72.5	503.0	64.8	144.2	441.0	64.8-68.0	3.2	0.8	1.7	6.1	7.5	3.2
43	"	"	"	99,945N 99,433E	-90	147.0	50.0	47.0	51.5	542.3										
44	"	"	"	99,837N [illegible]2E	-90	172.3	25.0	56.9	61.3	563.0										
45	"	"	"	99,231N 99,360E	-90	318.[illegible]	30.0	122.4	48.5	658.5										
46	1953-1954	"	"	103,123N 99,742E	-90	2570	30.0	164.8	37.9	532.7										

Grade x Thickness

OPTION

MINERALIZED ZONE / SLUDGE / REMARKS

(From)	Wt (Ft)	Oz Ag	% Pb	% Zn	Comb Metal	Footage Rec'd	Rec'y in Minz Zone %	Sludge Footage From	To	Wt (Feet)	Oz (Ag)	% Pb	% Zn	Comb Metal	Remarks	Grade x Thickness	
															126.0' drilled in 1953 / 141.0 " " 1954 Footwall rocks	—	(46)
															Drilled in footwall rocks	—	(47)
															Possible ore horizon 136.0' from collar	—	(48)
															" " " 326.0 " "	—	(49)
.0	5.	1.3	0.1	4.9	5.0	3.6	72.0								Massive pyrite 149.5' to 155.4' from collar	25	(50)
															" " 320.5' to 342.5 " "	—	(51)
															Possible ore horizon 110.0' from collar	—	(52)
															" " " 75.0 " "	—	(53)
134.5	4	0.4	1.4	4.3	5.7	3.2	71.7								Ls from 177.9 to 198.0 from collar	25^{65}	(54)
252.2	5	0.5	0.9	4.9	5.8	2.0	35.1								Ls from 200.0 to 226.5 " "	33^{06}	(55)
28.0	4	0.8	1.9	6.1	8.0	2.9	72.5										
125.0	4.	1.2	3.4	3.3	6.7	2.2	50.0								Massive pyrite 130.0 to 140.5 from collar	30^{15}	(56)
															Ls from 408.0' to 413.5' " "	—	(57)
															No massive pyrite / No Ls.	—	(58)
															Ls. from 15.0-48.4 & 79.6-81.5 from collar / Dolomite 122.6-125.2 from collar / Massive Pyrite - 171.4-174.0	—	(59)
																—	(60)
747	3	2.7	4.8	3.3	8.1	2.9	73.4								Ls. 344.5-355.0 from collar Also some limy argillite sections in the hole.	63^{93}	(61)
3747	9'	1.5	3.5	2.4	6.9	6.6	68.0										
															Rods sanded at 503. Unable to deepen unless reamed with EX & AX casing. No Limestone.	—	(62)
															Hole drilled in fault zone	—	(63)
															Abundant stringery pyrite from 148.0-152.5. Rock brecciated from collar to 200.0 feet. Minor Po filled fractures at 200.0'	—	(64)
																—	(65)

Mc MILLAN

D.D.H.	Year Drilled	Drilled By	Type of Core	Claim	Co-Ordinates	Bearing	Dip Angle	Hole Length	Over Burden	Shorts	Core Rec (%)	Elev Collar	Depth Minz Below Collar	Elev. Top Minz.	Elev. Bottom Minz.	M… Footage	W…
46	1953 1954	AS+R	EX	South Nabanni #2	103,103 N 99,740 E		-90°	267.0	30.0	161.4	51.8	542.7					
47	1954	"	"	South Nabanni #4	101,938 N 99,578 E		-90°	538.0	24.0	209.0	59.5	394.3					
48	1954	"	"	South Nahanni #3	102,333 N 100,511 E		-90°	352.0	26.0	179.3	45.0	427.7					
49	"	"	"	" "	101,898 N 100 525 E		-90°	352.0	156.0	112.9	42	521.1					
50	"	"	"	" #4	97,120 N 98,915 E		-90°	219.0	21.0	75.5	60	617.6	105.0	512.6	507.6	105.0-110.0	5.0
51	"	"	"	" #49	97,110 N 99,105 E		-90°	407.0	134.0	12[illegible].9	53.5	730.9					
52	"	"	"	" 4	102,112 N 100,035 E		-90°	251.0	14.0	123.3	34	379.1					
53	"	"	"	" 4	101,909 N 99 915 E		-90°	168.0	30.0	82.1	40.5	394.6					
54	"	"	"	" 5	100,223 N 100,422 E		-90°	228.0	71.0	8.4	481	513.1	190.0	328.1	323.6	190.0-194.5	4.5
55	"	"		" 6	99,993 N 100 577 E		-90°	252.0	71.0	73.5	56.6	555.0	226.5	328.5	322.8	226.5-232.2	5.7
56	"	"	"	" 49	97,311 N 99,950 E		-90°	243.0	21.0	74.1	66.6	612.0	24.0 120.5	589.0 491.5	584.0 487.0	24.0-28.0 120.5-125.0	4.0 4.5
57	"	"	"	" 5	100,001 N 101 180 E		-90°	458.0	93.0	132.8	64.2	616.0					
58	"	"	"	" 49	97336 N 98543 E		-90°	170.0	49.0	82.0	32.2	629.0					
59	"	"	"	" 49	97,908 N 98,938 E		-90°	243.0	15.0	83.4	60	617					
60	"	"	"	" 5	100,697 N 100,694 E		-90°	351.0	176.0	101.1	42.2	608.					
61	"	"	"	" 7	98,666 N 99,363 E		-90°	396.0	35.0	122.5	66.	626.0				371.0-374.7 365.0-374.7	3.7 9.7
62	"	"	"	SN-26	101353 N 108342 E		-90	503.0	9.0	162.3	67.1	794.0					
63	"	"	"	SN 29	100495 N 109075 E		-90.0	356.0	14.0	102.9	69.5	895.0					
64	"	"	"	M-1	99373 N 123151 E		-90.0	400.0	36.0	[illegible]	72.[illegible]	334.[illegible]					
65	"	"	"	SN-62	100527 N 111065 E		-90.0	340.0	3.0	[illegible]	[illegible]	[illegible]					

EXPLORATION

SUMMARY OF 1956 DIAMOND DRILLING

Hole	Coordinates	Claim	Length Recom. Max.	Length Actual	Over-burden	Elev. Coll.	% Core Recovery	Footage	Length	Assays Au.	Pb.	Zn	% Recovery	Calc. Thickness	REMARKS
74	93950N,99517E	M-25	350'	299.0	25.0	788'	64.3	25.0- 28.6	3.6'	Tr	Tr	Tr	50.0		E.M. explained by massive pyrite (25-73) and minor pyrite to 289';
								38.0- 43.0	5.0	Tr	Tr	Tr	40.0	0.	
								43.0-48.0	5.0	0.30	Tr	Tr	20.0	0.	
								48.0- 53.0	5.0	Tr	0.1	Tr	24.0	Tr	
								53.0- 58.0	5.0	3.30	Tr	Tr	30.0	5.	
								58.0- 63.0	5.0	0.60	Tr	2.9	28.0	2.	
								63.0- 68.0	5.0	0.50	7.1	Tr	52.0	1.	
								68.0- 73.0	5.0	0.50	3.2	Tr	46.0		
								73.0- 78.0	5.0	1.80	2.5	0.8	38.0		
								78.0- 83.0	5.0	0.20	Tr	0.1	70.0		
								83.0- 88.0	5.0	0.20	Tr	Tr	34.0		
								53.0- 88.0	35.0	.31	1.82	0.5	42.6	81.20 (74)	
75	7593,324N,99890E	M-23	400	380.0	13.0	837	46.8	161.0-167.0	6.0	0.20	0.1	0.6	63.3	4.2 (75)	E.M. explained by scattered minor pyrite and scattered heavier pyrite (284-351)
76	7694,348N,99164E	M-20	300	322.0	50.0	750	49.7	50.0- 54.5	4.5	3.30	5.6	0.5	77.8		E.M. explained by scattered bands etc., and Pb Zn (50-63)
								54.5- 60.0	5.5	1.40	2.7	Tr	27.2		
								60.0- 63.0	3.0	1.10	2.3	Tr	26.7		
								50.0- 63.0	13.0	1.99	3.62	0.18	44.6	49.49 (76)	
77	7794,348N;100,040E	M-18	300	309.0	79.0	779	29.4	181.0-189.0	8.0	0.30	5.3	Tr	33.8	42.10 (77)	E.M. explained by scattered minor pyrite and local Pb Zn (181-[illegible]).
								215.0-220.0	5.0	0.04	Tr	Tr	38.0		
78	7894779N;100394E	M-18	500	213.0	213.0	823.0								— (78)	Abandoned due to deep overburden. Drilled twice, first to 15[illegible] later to 213'.
79	7995167N;99507E	M-20	400	163.0	163.0	821								— (79)	Abandoned due to deep overburden.
80	8095375N;98820E	M-20	300	318.0	90.0	748	45.8	295.0-298.0	3.0	0.4	1.0	Tr	80.0	3 (80)	E.M. explained by minor scattered pyrite.

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SUMMARY OF 1956 DIAMOND DRILLING

Hole	Cordinates	Claim	Length Recom. Max.	Length Actual	Over-burden	Elev. Coll.	% Core Recovery	Footage	Length	Assays Ag.	Pb.	Zn.	% Recov.	Cu	Remarks
81	95955N;98942E	M-19	300	286.0	108.0	725	42.0								No pyrite concentration.
82	96540N; 98814E	M-19	300	319.0	75.0	650	49.8	171.0-173.0	2.0	0.1	0.6	Tr	26.7		E.M. explained by mineralization and pyritization
								190.5-191.5	1.0	5.5	0.4	Tr	80.0	0.45	
								191.5-195.0	3.5	1.3	Tr	Tr	68.5	0.20	
								195.0-200.5	5.5	3.8	4.6	Tr	65.2	Tr	
								200.5-201.5	1.0	11.3	Tr	0.9	90.0	15.2	
								201.5-210.5	9.0	17.1	0.9	Tr	73.0	2.1	
								(190.5-210.5)	20	9.8	1.7	.05	71.3	1.8	
83	93953N; 98050E	M-22	300	244.0	44.0	750	34.6								E.M. explained by pyritization (140.0 - 244.0')
	TOTAL			3007.0'											

1968

Grand Total - 22,974'

84 } - Pyrite only
85 }

86 - 0.01 Zn, 0.01 oz Ag

87 }
88 } - Failed to reach bedrock
[redacted] }

89 - 35' : .22% Pb, 0.28 Ag

(90) - 16' : 6.43 Pb, 0.40 oz Ag (111' and 127')

91 - less than 0.05 oz Ag

92 - 320-360' ; 420-490' Scattered sulphides - assays (3) sub ore grade.

93 - failed to reach bedrock

All holes vertical
EX core.

Total - 3404 feet

54
85
86
87
88
89
90
91
92
93

OPTION (1?55)

MINERALIZED ZONE: WD. (FEET)	OZ AG	% Pb	% Zn	% Cu	COMB METAL	FOOTAGE REC'D	REC'Y IN MINZ. ZONE	RATIO Ag/Pb	SLUDGE: FOOTAGE FROM	TO	WD. (FEET)	OZ (AG)	% Pb	% Zn	COMB METAL	REMARKS	
																Hole cemented twice.	(66)
																?s from 75.0 – 47.5 Some minor disseminated pyrite in [illegible]	(67)
																Possible fault between 263.0 – 268.6 Massive pyrite 7?.? – 96.0; 231.5 – 232.0; 230.? – 301.	(68)
5.0	814	1.3	0.5	2.1												No pyritization.	98° (69)
																Massive pyrite 54.? – 110.? No other sulphides seen	(70)
																Massive pyrite 122.5 – 124.5; 143.3 – 152.0	(71)
																No pyritization	(72)
																Massive Pyrite 209.? – 221.? Massive to nearly pyrite 253.5 – 323.?	(73)

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D.D.H.	Year Drilled	Drilled By	Type of Core	Claim	Co-ordinates	Bearing	Dip Angle	Hole Length	Over Burden	Shots (Ft)	Core Recov. (%)	Elev. Collar	Depth of Mine Below Collar	Elev. Top Mine	Elev. Bottom Mine	Mineralization Footage From	Mineralization Footage To	Mineralization Width (Feet)
66	1955	ADAIR	EX	South Nahanni 43	93,101N 99,342E	—	-90°	531.0	152.0	174.4	54	732.8						
67	1955	"	"	M-23	93701N 100178E	—	-90°	3030	22.0	142.7	48	736.0						
68	"	"	"	M-25	93748N 99748E	—	-90	4056	22.0	135.1	54	799.0				1030 - 1080	5.0	
69	"	"	"	M-25	93732N 99410E	—	-90°	325.0	32.0	133.3	54	810.0						
70	1955	"	EX	M-25	93737N 99100E	—	-90	303.0	45.0	106.2	53	0.0						
71	"	"	"	M-20	94737N 99354E	—	-90°	252.0	43.0	116.3	42	753.0						
72	"	"	"	M-20	94752N 99350E	—	-90°	301.0	67.0	102.2	56	756.0						
73	"	"	"	M-20	94750N 99725E	—	-90°	399.0	117.0	121.2	57	793.0						

78769-

QUARTZ LAKE CORE - ASARCO - BRIEF LOGS, BOX 78857

hole #		
1	0-51.5	light to dark gray siltstone
		minor ls
		minor pyrite cpy + galena (galena in veinlets)
	51.5-114.5	light gray siltstone
		minor med. gr. sst
		minor pyrite, + cpy.
2	0-55.0	light gray siltstone
		minor pyrite, + galena assoc + calcite in veinlets.
3	0-35	light gray limestone
	35-38	gray siltstone
	38-40	f-c. gr. galena
	40-42	gray siltstone, minor sulphides
	42-43	pyrite (6") + galena (6")
	43-48	grayish green lam. calc siltstone.
	48-96	grayish green lam siltstone, a few sections weakly calcareous. minor py-gal-sp? at 64' and 69'
	96-118	siltstone as above, minor sulphs in veinlets - gal, chalco, + cpy
	118-143	siltstone, as above. also in box 4, hole 3 in a section marked 73.4' to 81' of siltstone + f.g. sst.
7	109-130	light gray to buff finely lam siltst.
8	37-38	gray ls
	38-81	med to f.g. sst with dissem to massive galena
	81-112	as above, with galena + lesser py, sph + cpy
	112-121	finely laminated grey siltstone, minor f.g pyrite as lenses? + gal + sph in veins.
	121-200	finely lam grey siltstone, several limestone beds ~6" thick, minor sulphides - dissem.

HOLE #		
9	47-75	siltstone, fine grained sandstone - weakly calcareous, minor grey sandstone
	75-88	siltstone, fine grained disseminated sulphides - py, gal, sph
	88-95	massive & almost massive gal, sph, ? py.
	95-109	siltstone & f.g. sst with disseminated sph, gal & py.
10	69-113	light to dark grey & buff finely lam. siltstone, minor qtz veining
	113-115	fine gr. lam py sph, gal.
	115-225	light grey siltstone & fine gr. sandst, minor quartz veining.
11	65-[illegible]	light to dk grey and buff laminated siltstone &
	-199	fine grained sandstone, minor qtz veining.
12	37-48	light grey limestone
	48-60	buff to grey finely lam. calc siltstone
	60-84	light grey limestone
	84-100	light grey limestone with autobreccia/intra-formational breccia - lst clasts, calc matrix
	100-104	light grey f.g. lst
	104-107	light grey to buff finely lam. siltstone
	107-108	light grey f.g. lst
	108-114	light grey to buff finely lam. siltstone
	114-115	light grey f.g. lst
	115-124	light grey to & buff finely lam siltstone
	124-125	med gr grey calc sst
	125-136	light grey to buff finely lam siltstone

Hole #		
13	30-38	light grey lst, minor calcite veining
	38-70	light grey lst, intermittent autobrecciation/intraformil brec.
	70-74	light grey lst
	74-75	light buff finely lam. siltstone
	75-96	light grey limestone - fine grained - appears detrital - laminated.
	96-129	light grey to buff finely lam siltstone.
14	25-49	light to dark grey & brown lam siltstone
	49-57	fine to med gr quartzite
	57-126	light to dark grey and buff siltstone, minor f.gr. sandstone interbeds.
	126-?	siltstone sandstone, minor py-sph interbeds.
15	43-53	light grey limestone
	53-111	light grey to buff finely lam. siltstone and fine grained sst. non calc.
	111-116	med gr light grey subgreywacke
	116-150	light grey finely lam. siltstone
	150-215	light to dark grey finely lam siltstone.
16	78-136	light to med grey and buff finely lam siltstone, & minor fine grained sandstone -note footages.
	103-103.5	coarse gr. sandstone
	103.5-122	pink to light grey finely lam siltstone
	122-133	pale greenish grey mudstone note footages.
	155-157	light grey limestone
	157-162	brown siltstone, minor sulphs
	162-174	light grey limestone
	174-178	grey siltstone

Hole #		
16	178-181	buff siltstone & fine gr. sandstone,
	181-199	light grey-green siltstone, finely lam, non-calc
17	37-68	light grey to pink fine grained non-calc sst. box # 2 missing, some core from box 3 gone
	111-118	light grey to pink siltstone with pink fine grained sandstone. Minor gal, py, & Sph from 114 to 118
	118-167	finely lam. light grey siltstone.
19	10-60	light grey finely lam. siltstone to f.g. sandstone, minor mudstone/mud seams.
	60-63	light grey limestone
	63-68	light grey siltstone
	68-69	light grey limestone
	70-74	light grey siltstone
	74-79	light grey limestone, minor siltstone at 75'
	79-86	brown to dark grey calc siltstone, ~~minor~~ dissem to massive py, gal, & sph
	86-150	light grey siltstone; minor calcareous patches. sulphides at 97' and 103.
20	104-126.5	grey finely laminated siltstone
	126.5-177	dissem. to massive sulphides - py, sph, gal, in siltstone.
	177-191	light to dark grey siltstone & fine gr. sandstone
21	20-80	light grey siltstone to fine gr. sst, minor mud seams. non-calc,
	80-109	dark grey to dark brown siltstone to fine grained sandstone
	109-135	as above, but mud seams form most of core.

HOLE #		
22	59-152	light grey to buff siltstone to fine gr sandstone, laminated
	152-191	grey to brown laminated siltstone and fine grained sandstone.
23	69-108	grey and pink siltstone
	108-164	light grey and light pink siltstone & fine grained sandstone, laminated
	164-180	fine grained grey sandstone disseminated pyrite
	180-218	fine grained sandstone & siltstone, a few mud seams.
24	56-65	pebbles?
	65-152	light grey to pink finely lam siltstone to fine grained sandstone.
	152-168	grey siltstone, py, gal & sph. disseminated to massive. Minor vein quartz.
	168-174	grey siltstone, minor disseminated pyrite
	174-175	massive py, sph, gal.
	175-179	light grey siltstone, minor disseminated pyrite
	179-188	mud seam
	188-209	fine grained sandstone, minor disseminated pyrite.
25	24-133	grey to pink siltstone, badly decomposed, with mud seams. Disseminated py & gal. at 101 to 104
26	74-180	light grey to pink finely laminated siltstone
	180-184	dark brown siltstone
	184-188	light grey siltstone
	188-190	disseminated to massive gal, sph and py
	190-215	light grey siltstone and fine grained sandstone, mud seam at 208.

Hole #		
27	70-144	light grey siltstone and fine grained sandstone, laminated in part
	144-146	dark brown siltstone dissem to abdt pyrite + sph
	146-155	dark grey siltstone, dissem to abdt py, galena, and sph.
	155-156	~~massive sulphs py, sph, gal~~ grey siltstone
	156-158	massive sulphs - py, sph, gal
	158-163	grey siltstone, minor dissem py
	163-165	massive sulphs py, sph, gal
	165-171	mud seam?
	171-182	light grey siltstone
28	99-104	brown siltstone, dissem sulphides
	104-115	massive sulphs - py sph + gal
	115-118	grey siltstone, dissem. sulphides
	118-127	massive sulphs - sph, gal + py.
	129-135	dark grey siltstone, minor dissem sulphs.
	135-138	massive sph, minor py + gal
	138-141	dark grey siltstone dissem py.
	141-142	massive sphalerite
	142-145	grey siltstone
	145-155	mud seam
	155-165	light grey laminated mudstone
29	78-80	pebbles. "basal till"
	80-122	grey finely lam. siltstone
	122-127	coarse gr- silt stone to congl. - dark brown
	127-132	brown siltstone, minor dissem sulphs
	132-134	massive sulphs - sph, py, gal.
	134-187	grey siltstone fine grained sandstone, minor mudstone Massive sph 137'-138'

Hole #		
31	99-114	light grey siltstone
	114-118	massive sulphs - galena, sph, py.
	119-125	dissem to massive sulphs gal & sph & py in grey siltstone
	125-132	mud seam
	132-148	light grey mudstone to siltstone, minor vein quartz in siltstone.
32	100-204	light grey siltstone to fine grained sandstone mudseams at 173', 182', 192', 196' 186' - note says 1' ore.
	204-214	grey med gr. sandstone
34	92-173	light grey to buff laminated siltstone
35	102-157	maroon, pink, and grey fine grained sandstone and siltstone, laminated.
	152-164	dissem to massive sulphides - sph, py. gal
	164-~~168~~ 174	dark brown siltstone, dissem py.
	171-172	massive sphalerite
	172-213	light grey sandstone / fine grained / sandsiltstone
	213-219	mud seam
36	91-210	light grey siltstone to fine grained sandstone. laminated. - Core from 170-220 clumped - not in order. "High grade ore" tag in box, but no core with sulphides except for a few small massive sph - py. sections.
37	69-174	pink to grey fine grained sandstone and lam-siltstone.
	174-178	dissem. to massive sulphides - sph, gal, & py. in siltstone
	178-208	grey sandstone (fine-grained) and siltstone

H.S.BOSTOCK CORE LIBRARY

WHITEHORSE, YUKON TERRITORY

NORTHERN NATURAL RESOURCES & ENV. BRANCH
INDIAN & NORTHERN AFFAIRS

SER. NO.	LIBRARY LOC.	PROPERTY	DRILLED FOR	YR.	HOLE NO.	BOX NO.	INTERVAL FROM	INTERVAL TO	N.T.S.	CORE	REMARKS
78745	40	QUARTZ LAKE (MacMILLAN)	NORANDA	~~75~~	94	1	~~55~~	76	95D	AQ	these holes are represen-
78746						2	76	98	5,12		tative holes from
78747						3	99	122			a larger diamond
78748						4	122	147			drilling program.
78749						5	147	170			Other core stored
78750						6	170'	193'			at property.
78751						7	193'	215'			See also Asarco -
78752						8	215'	238'			Quartz Lake.
78753						9	238'	261'			
78754						10	261'	284			?? The Box numbers
78755						11	284	307'			which are crossed off
78756						12	307'	332			are no longer available
78757						13	332'	356			for use.
78758						14	356	381			
78759					115	1	200'	220'			
78760						2	220'	247'			
78761						3	247'	270'			
78762						4	270'	289'			
78763						5	289'	311'			
78764						6	311'	333'			
78765						7	333	355			
78766						8	355'	377			
78767						9	377	399			
78768						10	399'	413'			
[redacted]						[redacted]					

27

H.S. BOSTOCK CORE LIBRARY

WHITEHORSE, YUKON TERRITORY

NORTHERN NATURAL RESOURCES & ENV. BRANCH
INDIAN & NORTHERN AFFAIRS

37

SER. NO.	LIBRARY LOC.	PROPERTY	DRILLED FOR	YR.	HOLE NO.	BOX NO.	INTERVAL FROM	INTERVAL TO	N.T.S.	CORE	REMARKS
78769	40	QUARTZ LAKE	AS ARCO EXPLN	53+	1	1	0	51.5	95D	XRAY	
78770	NEW	(MACMILLAN)	CO. OF CANADA	55		2	51.5	114.3	5,12		
78771	NB.				2	1	0	55.0			
78772					3	1	0	49.8			
78773						2	49.8	93.7			
78774						3	93.7	118.5			
78775						4	118.5	142.5			100 in box 78775 is a section marked 73.4'-81'
78776					7	3	109	130			
78777					8	1	37	81			
78778						2	81	121			
78779						3	121	200			
78780					9	1	47	109			
78781					10	1	69	121			
78782						2	121	225			
78783					11	1	65	138			
78784						2	138	199			
78785					12	1	37	95			
78786						2	95	136			
78787					13	1	30	91			
78788						2	91	129			
78789					14	1	25	110			
78790						2	110	?			
78791					15	1	43	?		EX	
78792						2	53	92			
78793						3	92	124			

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78794	40	QUARTZ LAKE	ASARCO EXPLN	53	15	4	124	154	95D	EX	
78795	NEW	(MACMILLAN)	CO. OF CANADA	55		5	154	180	5,12		
78796	LIB.					6	180	215			
78797					16	1	78	112			
78798						2	112	136			
78799						3	103	133			Note footages!
78800						4	155	181			
78801						5	181	199			
78802					17	1	37	68			Box # 2 missing
78803						3	93	119			Core missing to 111'
78804						4	119	160			
78805						5	160	167			
78806					19	1	10	59			
78807						2	59	89			
78808						3	89	128			
78809						4	128	150			
78810					20	2	104	160			Box # 1 missing
78811						3	160	197			
78812					21	1	20	65			
78813						2	65	96			
78814						3	96	125			
78815					22	1	59	136			
78816						2	136	166			
78817						3	166	187			footage unsure, this box
78818					23	1	69	125			

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78819	40	QUARTZ LAKE	ASARCO EXPLN	53	23	2	123	153	95 D	Ex	
78820	NEW	(MACMILLAN)	CO. OF CANADA	55		3	153	218	5,12		
78821	41B.				24	1	56	101			
78822						2	101	129			
78823						3	129	166			
78824						4	166	209			
78825					25	1	24	73			
78826						2	73	133			
78827					26	1	74	122			
78828						2	122	175			
78829						3	175	215			
78830					27	1	70	117			
78831						2	117	148			
78832						3	148	182			
78833					28	2	99	139			Box 1 missing
78834						3	139	165			
78835					29	1	78	126			
78836						2	126	187			
78837					31	1	99	149			[illegible]
78838					32	1	100	154			
78839						2	154	203			
78840						3	203	214			
78841					34	1	92	125			
78842						2	125	163			
78843						3	163	173			

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78844	40	QUARTZ LAKE	ASARCO EXPLN	53+	35	#1	102	156	95 D	Ex	
78845		(MACMILLAN)	CO. OF CANADA	55		2	156	210	5,12		
78846						3	210	218			
78847					36	1	91	170			
78848							170	220			Core dumped - not in order
78849					37	1	69	132			
78850						2	132	200			
78851						3	200	208			
78852					55	1					footages not legible
78853						4	175	205			boxes 2+3 missing
78854						5	205	225			
78855						6	225	252			
78356					?		125	159			7 unknown hole #'s.
78857					?		?	?			