



COMINCO LTD.

EXPLORATION
NTS 105 0-7

WESTERN DISTRICT

GEOLOGICAL AND GEOCHEMICAL EXPLORATION REPORT

ASSESSMENT REPORT

HESS 1 to 48 CLAIMS

LATITUDE: 63° 17' N
LONGITUDE: 130° 25' W

MAYO MINING DISTRICT

YUKON TERRITORY

September 23, 1977

Robert J. Sharp

PERIOD OF WORK

May 24, 1977

TO

September 23, 1977

090243





This report has been examined by the Geological Evaluation Unit and is recommended to the Council of the Territory to be considered as representation work in the amount of \$23856.55

~~Resident Geologist or
Resident Mining Engineer~~

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

B. R. BAXTER
Supervising Mining Recorder

Commissioner of Yukon Territory

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ATTACHMENTS

Exhibit "A":	Statement of Expenditures	
Plate 1	Location Map	Scale: 1" = 80 miles
Plate 2	Location Map	Scale: 1" = 10 miles
Plate 3A	Claim Map	Scale: 1" = 1/2 mile
Plate 3B	Claim Map	Scale: 1cm = 100 meters
Plate 4	Geology Map	Scale: 1cm = 100 meters
Plate 5A	Copper Geochemistry Map	Scale: 1cm = 100 meters
Plate 5B	Lead Geochemistry Map	Scale: 1cm = 100 meters
Plate 5C	Zinc Geochemistry Map	Scale: 1cm = 100 meters
Plate 5D	Silver Geochemistry Map	Scale: 1cm = 100 meters
Plate 5E	Barium Geochemistry Map	Scale: 1cm = 100 meters

1./23 September 1977.

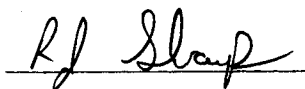
I. LIST OF CLAIMS

<u>CLAIM NAME</u>	<u>TAG NUMBER</u>	<u>DATE RECORDED</u>	<u>YEARS OF ASSESSMENT WORK APPLIED FOR</u>
Hess 1	YA 6595	Sept. 3, 1976	4
" 2	YA 6596	Sept. 3, 1976	4
" 3	YA 6597	Sept. 3, 1976	4
" 4	YA 6598	Sept. 3, 1976	4
" 5	YA 6599	Sept. 3, 1976	4
" 6	YA 6600	Sept. 3, 1976	4
" 7	YA 6601	Sept. 3, 1976	4
" 8	YA 6602	Sept. 3, 1976	4
" 9	YA 14783	Dec. 2, 1976	4
" 10	YA 14784	Dec. 2, 1976	4
" 11	YA 14785	Dec. 2, 1976	4
" 12	YA 14786	Dec. 2, 1976	4
" 13	YA 14787	Dec. 2, 1976	4
" 14	YA 14788	Dec. 2, 1976	4
" 15	YA 14789	Dec. 2, 1976	4
" 16	YA 14790	Dec. 2, 1976	4
" 17	YA 14791	Dec. 2, 1976	4
" 18	YA 14792	Dec. 2, 1976	4
" 19	YA 14793	Dec. 2, 1976	4
" 20	YA 14794	Dec. 2, 1976	4
" 21	YA 14795	Dec. 2, 1976	4
" 22	YA 14796	Dec. 2, 1976	4
" 23	YA 14797	Dec. 2, 1976	4
" 24	YA 14798	Dec. 2, 1976	4
" 25	YA 15339	July 8, 1977	4
" 26	YA 15340	July 8, 1977	4
" 27	YA 15341	July 8, 1977	4
" 28	YA 15342	July 8, 1977	4
" 29	YA 15343	July 8, 1977	4
" 30	YA 15344	July 8, 1977	4
" 31	YA 15345	July 8, 1977	4
" 32	YA 15346	July 8, 1977	4
" 33	YA 15347	July 8, 1977	4
" 34	YA 15348	July 8, 1977	4
" 35	YA 15349	July 8, 1977	4
" 36	Ya 15350	July 8, 1977	4
" 37	YA 15351	July 8, 1977	4
" 38	YA 15352	July 8, 1977	4
" 39	YA 15353	July 8, 1977	4
" 40	YA 15354	July 8, 1977	4
" 41	YA 15355	July 8, 1977	4
" 42	YA 15356	July 8, 1977	4
" 43	YA 15357	July 8, 1977	4
" 44	YA 15358	July 8, 1977	4
" 45	YA 15359	July 8, 1977	4
" 46	YA 15360	July 8, 1977	4
" 47	YA 15361	July 8, 1977	4
" 48	YA 15362	July 8, 1977	4

Claims Hess 1 to 48 are shown in the red shaded areas in plates 3A and 3B. Assessment credit for four years has been applied for, for each of the 48 claims listed above.

The period of work for these claims was May 24, 1977 to September 23, 1977 inclusive.

Report by:



R.J. Sharp
B.Sc. (Mineral Engineering)

Under the Supervision of D.W. Heddle, P. Eng.

2./23 September 1977.

II. PERSONNEL EMPLOYED

The basic camp consisted of one geologist (R.J. Sharp) and two field assistants, (E.M. Hamilton and M.M. Berris), all employed by Cominco Ltd. Other Cominco geologists who worked for several days on the property are A.J. Boronowski and A. Elliot, along with assistants J. Faubert, P. Moroney and R. Morris. A cook, A. van Herk, was employed for two months on the property. Hamilton, Berris and van Herk assisted in office work during the latter part of August.

Personnel employed by Cominco Ltd. during the course of this study:

R.J. Sharp	May 24 - September 23, 1977	200 Granville Sq. Van, BC
E.M. Hamilton	May 31 - August 31, 1977	" " " " "
M.M. Berris	May 31 - August 27, 1977	" " " " "
A. van Herk	June 29 - August 29, 1977	" " " " "
A. Boronowski	July 20 - July 21, 1977	" " " " "
A. Elliot	August 17, 1977	" " " " "
J. Faubert	July 24, August 17, 1977	" " " " "
P. Moroney	August 17, 1977	" " " " "
R. Morris	July 24, August 17, 1977	" " " " "

3./23 September 1977.

III. INTRODUCTION

Cominco Ltd. staked the Hess claim group to cover a sequence of Cambrian to Devonian sedimentary rocks lying approximately 20 miles west of the MacMillan Pass in the Yukon Territory. The purpose of exploration on the Hess claims during the 1977 field season was to investigate the potential for economic sulfide mineralization in these strata. This report deals with the results obtained during the geological and geochemical study of the claim group.

IV. LOCATION AND ACCESS

The Hess group is situated approximately 20 miles west of the MacMillan pass, in the Yukon Territory. The general coordinates of the claims are 130° 25' W longitude, 63° 17' N latitude (see Plates 1 and 2).

Access to the claims is by helicopter from either the Canal road or from one of several large lakes in the area. The Canal road is open during summer months and the lakes afford landing sites for float equipped aircraft in the summer or ski equipped aircraft in winter. The airstrip at MacMillan pass is servicable for wheel equipped aircraft.

During the 1977 field program, access into the property was provided by a Bell 206B Helicopter either from Fuller Lake or from the MacMillan pass airstrip.

V. GEOLOGICAL REPORT

A. General Geology

The Hess claims are underlain by a series of intensely deformed sedimentary rocks that range in age from the Cambrian to Devonian-Mississippian. Metamorphic rocks are generally absent except in the Cambrian sections where phyllites can be observed. Relationships between various rock units are complicated by structural deformation, however distinct lithologies are mappable and continuous across the claim group. Graptolites are common in many of the carbonaceous shale lithologies outcropping on the claims, and are helpful in dating the lithological units.

The lithology of principal interest is a middle to upper Silurian carbonaceous shale-siltstone horizon because it hosts a significant barite - witherite bed. Other barite horizons occur in the Silurian rocks in carbonaceous shales and interbedded with floggy mudstones and carbonaceous shales, stratigraphically below the main barite horizon (designated unit 5 B on plate 4).

B. Detailed Geology

1. Stratified Rocks

Plate 4 is a geological map of the Hess Group (claims 1 - 48). The map legend gives a detailed breakdown of the various rock formations outcropping on the claims. This section gives a more detailed description of the rock units.

UNIT 1

This unit is of probable Cambrian age. Lithologies present are red to green phyllites that are interbedded with massive limestone and dolomitic sandstones. A thin conglomerate horizon locally occurs at the top of the limestone unit where rounded limestone cobbles and boulders are cemented by calcite and dolomite.

4./23 September 1977.

The Cambrian rocks lie off the map area to the north of the Hess claims and hence have not been extensively mapped.

UNIT 2

Unit 2 is composed of a number of thin lithological units all belonging to a related stratigraphic package. The major lithology is a brown weathering sandstone to mudstone assemblage with dolomitic laminations and cross bedding. Interbedded with this lithology are beds of massive grey white limestone, dolomitized limestone, flaggy cherts and mudstones and minor black fetid limestone. Thin carbonaceous shale horizons carrying graptolites occur in the assemblage.

UNIT 3

Unit 3 is a black carbonaceous siltstone and shale assemblage, and is commonly graptolitic. Graptolite age dating indicates a time range of Upper Ordovician to Lower Silurian for formation of these rocks. Faulting has largely removed complete sections of this unit and the maximum thickness calculated from exposed sections is 75 meters.

UNIT 4

Unit 4 is similar in many respects to unit 2. The main differences distinguishing the units is that unit 4 contains occasional graptolites that give ages younger than unit 2; unit 4 commonly contains pyrite nodules, thin impure barite beds (less than 2 meters thick) and abundant bioturbated mudstones.

UNIT 5

Unit 5 is correlated with the Upper Road River Formation in the area. This unit is thought to be Middle Silurian to Upper Silurian-Devonian in age by nature of its lithology and stratigraphic positioning. Graptolites are rare to absent making positive age identification difficult.

The predominant lithology found in unit 5 is a thin to medium bedded sequence of carbonaceous cherty siltstones and shales. A minor barite bed outcrops in this horizon.

UNIT 5A

This subunit comprises the major lithology of unit 5. It is estimated to be 310 meters thick and is composed of a uniform section of carbonaceous black cherty siltstone-shale rocks. Pyrite is rare but occurs as small framboids locally.

UNIT 5B

Sub-Unit 5B is composed of interbedded barite and witherite. Thicknesses range from a few meters to tens of meters. The unit appears to be bedded and consists of relatively pure barite and witherite. Silty horizons do occur within the barite and may be used as a marker unit for stratigraphic correlation between outcrops. In fault zones a witherite breccia forms healing the faulted area. These zones also contain barite crystals and small limonitic patches.

UNIT 6

Unit 6 is a carbonaceous shale-siltstone horizon overlain by a chert pebble conglomerate horizon. This unit has been dated by Blossom, 1974 as Devonian-Mississippian in age.

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UNIT 6A

Unit 6A is the conglomerate horizon. Conglomerate fragments are sub-rounded to sub-angular chert or cherty-siltstone pebbles cemented by a fine grained siliceous matrix. Thin beds of sandstone and carbonaceous shales are found within the conglomerate horizon.

UNIT 6B

Unit 6B is composed of black carbonaceous shales with brown weathering silty laminations. This unit grades upward into the conglomerate becoming coarser grained, less carbonaceous with cross bedding becoming common near the conglomerate-siltstone contact.

UNIT 7

Unit 7 consists of recent sediments, glacial till and talus. This unit occupies the valley bottoms and lower slopes of the mountains.

2. Intrusive Rocks

Several dykes cut the stratigraphy. Two types of dykes are found, one is a quartz-eye rhyolite dyke, the other is a basic dyke of probable basaltic composition. Ages of intrusive rocks are uncertain but may be Cretaceous. The basic dyke is seen to cut the acid dyke in one locality. Typical thicknesses of the dykes are 5 to 20 meters.

C. Structural Geology

The entire area has undergone relatively intense structural deformation resulting in numerous faults and minor folds. The dominant structures are imbricated thrust faults which steepen in dip becoming reverse faults on the Hess claims. Bedding planes are commonly planes of detachment for faulting. Numerous strike-slip and dip-slip high angle faults cut the stratigraphy. Normal faulting has moved younger Devonian-Mississippian rocks over older Silurian rocks along the southern portions of the Hess Claims.

Folds are not commonly visible, however minor folding is ubiquitous in the carbonaceous shales. Chevron type folds 1 to 2 meters across are the common type found in the carbonaceous shale horizons.

D. Mineralization

Barite mineralization occurs on several of the claims. No sulfide mineralization was found associated with the barite on any of the Hess 1 to 48 claims. Small limonitic patches containing anomalous zinc geochemical values do occur in the barite, however, these are attributed to faulting and are not related to sulfide mineralization.

VI. RECOMMENDATIONS

Further prospecting and additional detailed geological mapping of the barite horizon is warranted. Other than the barite itself no favorable geological targets were delineated on the Hess 1 to 48 claims.

6./23 September 1977.

VII. GEOCHEMISTRY

A. INTRODUCTION

Soil geochemical samples were collected on three grids surveyed on the Hess 1 to 48 mineral claims. All samples from the grids were analyzed by the Acme Analytical Laboratory in Ross River, Yukon Territory.

The base line for the grids were established using the compass and chain method. Lines were turned off at 90 degrees from the base line every 150 meters. Compass and pace traverses along the gridlines from the base line were subsequently run and soil samples were collected every 75 meters along these lines.

Samples sent to the lab were analyzed for copper, lead, zinc and silver, using a hot aqua regia digestion followed by diluting samples with 1.5% NaOH and 5.0% EDTA solution then analyzing them by atomic absorption spectroscopy. A total of 320 results reported by the lab are given on maps 5A, B, C, D and E attached to this report. Values for copper, lead, zinc and silver are given in parts per million while values for barium are given in percent.

B. TOPOGRAPHY AND VEGETATION

The study area is very rugged with steep slopes and deep valleys. Elevation range from 1,200 meters above sea level to over 2,000 meters ASL. Valleys run north-south and have very steep western slopes and moderately to very steep eastern slopes. The valley floors rise to the south and broaden out into wide grassy alpine meadows occupying cirques.

Fast flowing creeks occupy the center of the **valleys** and are fed by abundant semi-discontinuous tributaries occupying gorges along the valley walls. Mechanical erosion is significant, many talus slopes are present along with talus fans. Glacial erosion has deposited a thin to thick cover of till along the valley floors while moraines are encountered along the valley walls.

Vegetation consists of moss and grass cover on many slopes and ridges while lower in the valley pine and fir trees are abundant. Willow and alder trees grow along stream cuts and hamper passage in many places. Minor areas covered with swampy peat bogs were sampled but the area sampled is generally well drained.

The most significant effect of topography is the down-slope dispersion of rock material due to mechanical erosion. Hence many anomalies may be transported or significantly broadened over an area.

C. STATISTICAL ANALYSIS

All available soil geochemical data has been keypunched onto computer cards and has been processed by J. Davies (a Cominco "computer applications specialist"). A statistical analysis of the data was run to establish background and threshold values. Values have been sub-divided into background, possibly anomalous and anomalous and have been contoured on maps 5A, B, C, D and E.

7./23 September 1977.

Copper

Copper values have an arithmetic mean of 60.92 ppm, a standard deviation of 39.53 ppm and a median of 56 ppm. Background values range from 3.00 to 140 ppm, possibly anomalous values range from 141 to 180 ppm and distinctly anomalous values are greater than 180 ppm.

Lead

Lead values have an arithmetic mean of 20.56 ppm and standard deviation of 11.58 ppm with a median of 19 ppm. Background values range from 0 to 43 ppm, possibly anomalous values from 44 to 55 and distinctly anomalous values are greater than 55 ppm.

Zinc

Zinc values have an arithmetic mean of 450.37 ppm, a standard deviation of 490.01 ppm and a median of 260 ppm. Background values range from 0 to 1429 ppm, possibly anomalous values from 1430 to 1920 ppm and distinctly anomalous values are greater than 1920 ppm.

Silver

Silver values have an arithmetic mean of 1.18 ppm, a standard deviation of 1.24 ppm and a median of 0.80 ppm. Background values range from 0 to 3.65 ppm, possibly anomalous values from 3.66 to 4.90 ppm and distinctly anomalous values are greater than 4.90 ppm.

Barium

Barium values have an arithmetic mean of 0.62%, a standard deviation of 0.80% and a median of 0.22%. Background values range from 0 to 2.21%, possibly anomalous values from 2.22 to 3.02% and distinctly anomalous values are greater than 3.02%.

D. INTERPRETATION

Copper

Six anomalous and twelve possibly anomalous copper values have been obtained from the analysis. Grids one and two contain geochemically anomalous copper values, however grid three has no values above background. The largest anomalous zone is 250 meters long and 200 meters wide. Copper concentrations in the soil range from a minimum of 3 ppm to an erratic maximum of 3000 ppm, over the area sampled.

Lead

Six anomalous and four possibly anomalous values were obtained from the lead geochemical analysis of the soil samples. Only one area, located on Hess 4, indicated any anomalous geochemical trend with two anomalous, one possibly anomalous sample. No anomalies were defined on grid two, grid one has several isolated anomalies while grid three has one isolated anomaly and one anomalous zone. The minimum value obtained is 1 ppm while the maximum value is 138 ppm lead.

8./23 September 1977.

Zinc

Zinc geochemical analysis indicated twenty one anomalous and eleven possibly anomalous soil samples. There are five isolated anomalous samples and three isolated possibly anomalous samples. The significance of the isolated anomalies is questionable.

Grids one and two contain all of the anomalous values. An east to west trend of anomalies occurs on grids one and two but actual anomalous samples are separated by samples yielding background zinc values. One very anomalous sample yielding a value of 57,000 ppm zinc was taken from the western side of grid 1. This sample was obtained from an area where a permanent groundwater seep discharges after percolating downward through a black shale horizon. No mineralization was observed in the outcrops in the area and the writer suspects that this anomaly reflects a secondary enrichment of zinc leached from the black shales and precipitated at the surface where metal enriched acidic groundwaters undergo a pH change (Doyle and Fletcher, 1974).

Silver

Few silver geochemical anomalies are outlined. Six anomalous and five possibly anomalous samples have been detected. One small zone, 300 meters long, giving anomalous values exists on the northwestern end of grid one. On grid two several isolated anomalies are present with one anomalous and one possibly anomalous sample defining a zone 75 meters wide. No silver geochemical anomalies are present on grid three. Geochemical values range from a minimum of 0.10 ppm to a high of 13.2 ppm.

Barium

Broad anomalous trends are defined by the barium analysis. A large number of geochemically anomalous samples were obtained from grid one. Most anomalies appear broad while some are localized. The significance of barium anomalies is that they reflect proximity to barite or witherite horizons in the study area. Due to its insoluble nature, barite concentrates in residual and transported soil hence downslope erosion and glacial attrition of any barium enrich strata would have caused a dispersion of barium minerals in the soil giving rise to the broad (and in many cases secondary, transported) anomalies found to exist in the study area. The minimum value obtained is 0.01% Ba while the maximum is 6.4% Ba.

VIII. CONCLUSIONS AND RECOMMENDATIONS

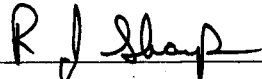
Geochemically anomalous zones of copper, lead, zinc, silver and barium have been defined within the study area. The zones range from small and narrow to broad and dispersed. Isolated anomalous and possibly anomalous geochemical values, with no evidence of zoning, commonly occur.

The writer believes that areas of spring discharge are often enriched in metallic elements, especially copper, zinc and silver. This observation has been reported by Fletcher and Doyle in a paper published on the geochemistry of rocks and soils in the MacMillan Pass area, Yukon Territory, in 1974. Such geochemically anomalous zones are not indicators of base metal deposits, consequently are of little use in prospecting and locating such deposits.

9./23 September 1977.

It is recommended that future work be concentrated on anomalous areas that do not appear to be near zones of groundwater discharge. In addition it is also recommended that only lead, zinc and barium analysis need be performed on soil samples.

Report by:

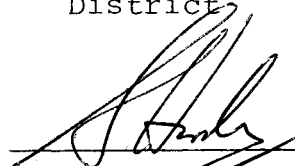

R.J. Sharp

Endorsed by:



D.W. Heddle, P. Eng.
Assistant Manager,
Exploration, Western
District

Approved for release
by:



G. Harden
Manager, Exploration
Western District

RJS/pd

10./23 September 1977.

REFERENCES

- 1974 Doyle P., Fletcher K., Factors Influencing Trace-Element Distribution in the Eastern, Yukon. CIM Transactions: Vol. LXXVII. pp. 27-31.
- 1974 Blusson, S.L., GSC Open File. 205, June 1974
Neddery Lake Map Sheet, Yukon Territory.
- 1976 Blusson, S.L., Selwyn Basin; Yukon. District of MacKenzie. GSC Paper 761A pp. 131-132.

IN THE MATTER OF THE
YUKON QUARTZ MINING ACT

AND

IN THE MATTER OF A GEOCHEMICAL AND GEOLOGICAL SURVEY
CARRIED OUT ON MINERAL CLAIMS HESS 1 TO 48

Located in the Mayo Mining District of the
Yukon Territory

More Particularly, NTS 105 0/7

AFFIDAVIT

I R.J. Sharp of the city of Edmonton in the Province of
Alberta, Mineral Engineer in Training, make oath and say:

1. that I am employed as a geologist by Cominco
Ltd. and as such, have a personal knowledge of
the facts to which I hereinafter depose;
2. that annexed hereto and marked as "Exhibit A"
to my Affidavit is a true copy of expenditures
on a geological and geochemical survey carried
out on mineral claims HESS 1 to 48.
3. that the said expenditures were incurred between
the 24th day of May, 1977 and the 23rd day of
September, 1977 for the purpose of mineral ex-
ploration on the above noted claim group.

Sworn Before Me at the City)
of Vancouver in the Province)
of British Columbia this)
23rd day of September, 1977)

Anthony G. Zaboloff)

A Notary Public in and For)
the Province of British)
Columbia)

Robert J. Sharp

Robert J. Sharp

COMINCO LTD.

EXPLORATION

NTS 105 0/7

WESTERN DISTRICT

September 23, 1977

"EXHIBIT A"

48 CLAIMS

STATEMENT OF EXPENDITURES

GEOLOGICAL AND GEOCHEMICAL REPORT

ON HESS 1 TO 48 MINERAL CLAIMS SITUATED AT

63° 17'N Latitude
130° 25'W Longitude

STAFF TIME

R.J. Sharp	(108 days)	\$ 8,140.00
E.M. Hamilton	(92 days)	4,880.00
M.M. Berris	(88 days)	3,860.00

ANALYSIS

ACME Analytical Lab	Invoice #R-7061	408.80
ACME Analytical Lab	Invoice #R-7127	675.25

HELICOPTER

Northern Mountain:	Invoice #6480	1,234.00
Northern Mountain:	Invoice #6530	798.00
Northern Mountain:	Invoice #6670	1,270.00
Northern Mountain:	Invoice #6288	598.00

TRANSPORTATION

Terr-Air	Invoice # 672	242.00
Terr-Air	Invoice #1042	275.00

EQUIPMENT

Pacific Survey Corporation:	Pencil manuscript for base map for Geology-Geochemistry on Hess Property. Invoice #9679	<u>1,475.00</u>
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TOTAL EXPENDITURE \$23,856.55

Signed: R.J. Sharp

R.J. Sharp

✓ AFFIDAVIT ✓ ay

This is "Exhibit A" to the ~~statutory Declaration~~ of Expenditures relating to the Geological and Geochemical Survey declared before me the 23rd day of September, 1977 A.D.

Anthony A. Zook

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

September 23, 1977

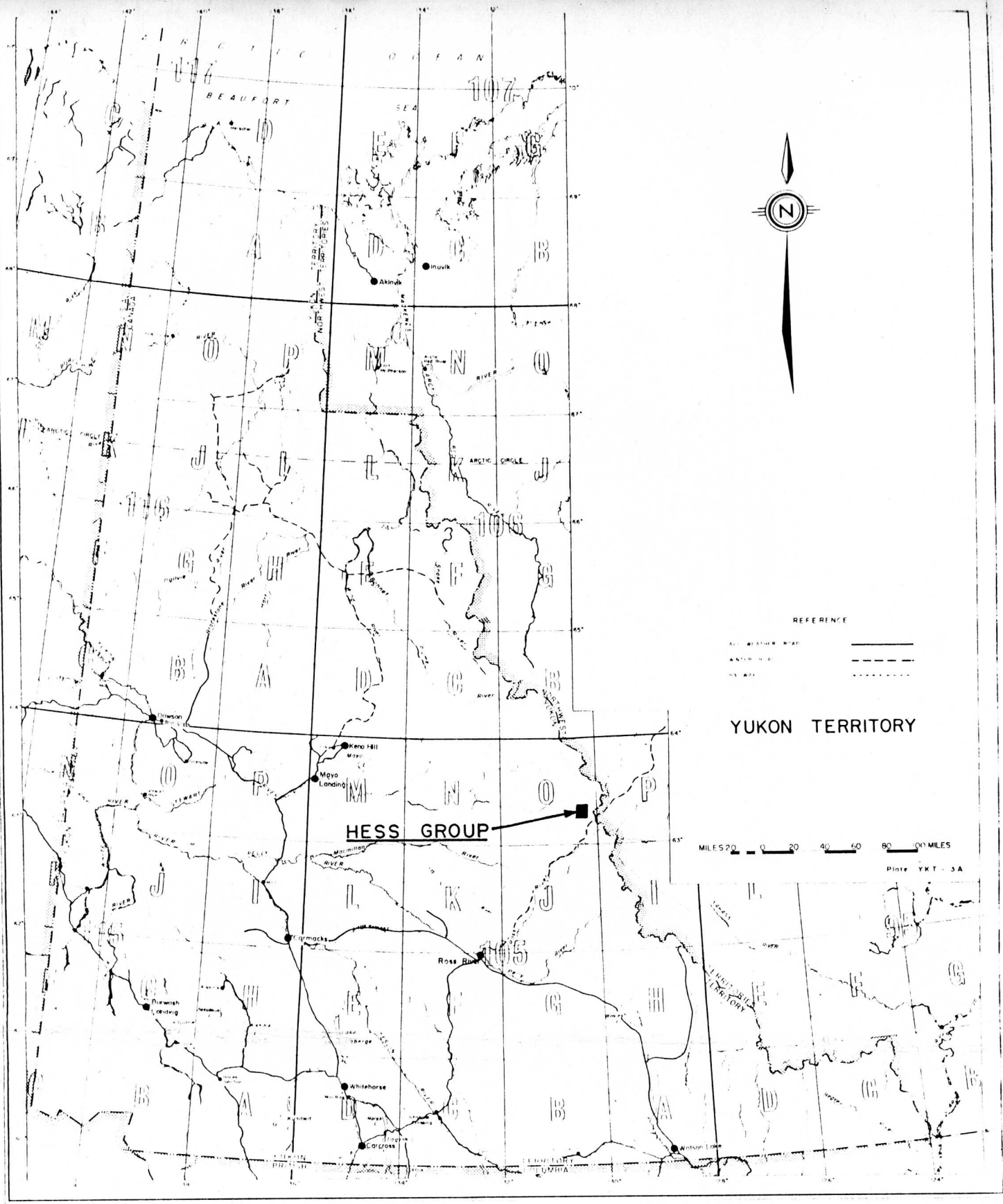
STATEMENT OF QUALIFICATIONS

1. Robert J. Sharp graduated from the University of Alberta in 1975 with the degree of B.Sc. in Mineral Engineering.
2. Robert J. Sharp is registered as an Engineer-in-Training with the Association of Professional Engineers, Geologists and Geophysicists of the Province of Alberta; member number 18311.
3. Robert J. Sharp is currently enrolled as a candidate for the degree of Master of Science in Geology, at the University of Alberta.

R.J. Sharp has been employed by Cominco for four seasons on geological work. I consider him well qualified to carry out and report on all phases of geological and geochemical work.



D.W. Heddle, P. Eng.
Asst. Manager
Western District



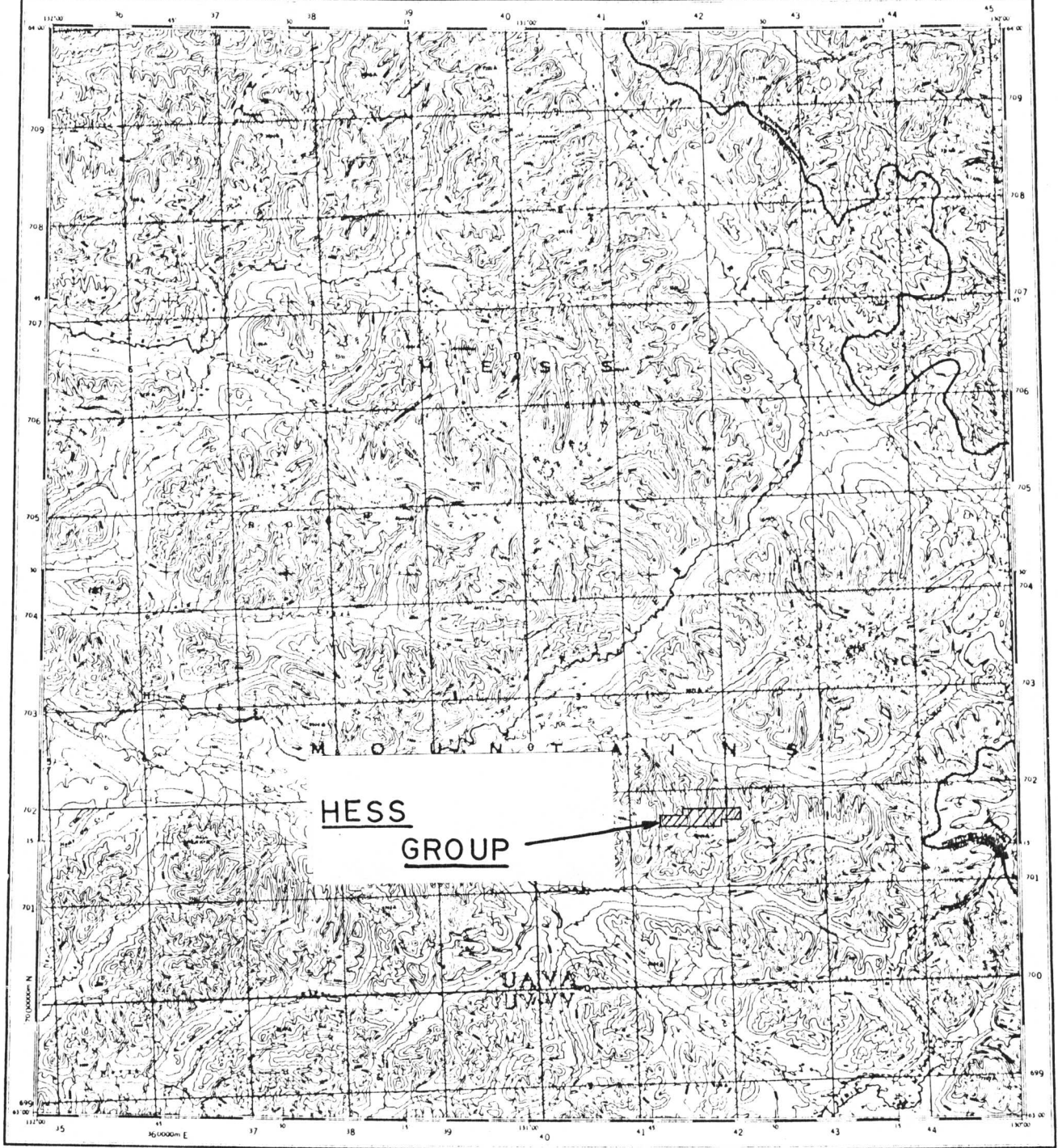
MINERAL CLAIM SHEET 105-0-7

Drawn by		Traced by:	
Revised by	Date	Revised by	Date

LOCATION MAP
HESS CLAIMS

Scale: 1" = 90 Mi. Date: SEPT. 1977 Plate: 1





HESS
GROUP

NIDDERY LAKE
YUKON TERRITORY - NORTHWEST TERRITORIES

Scale 1:250,000
1 Inch = 4 Miles Approximately

- REFERENCE
- Contour lines
 - Boundaries
 - Roads
 - Rivers
 - Lakes
 - Settlements
 - Railways
 - Power lines
 - Telephone lines
 - Telegraph lines
 - Lighted towers
 - Unlighted towers
 - Obsolete boundaries
 - Obsolete roads
 - Obsolete rivers
 - Obsolete lakes
 - Obsolete settlements
 - Obsolete railways
 - Obsolete power lines
 - Obsolete telephone lines
 - Obsolete telegraph lines
 - Obsolete lighted towers
 - Obsolete unlighted towers

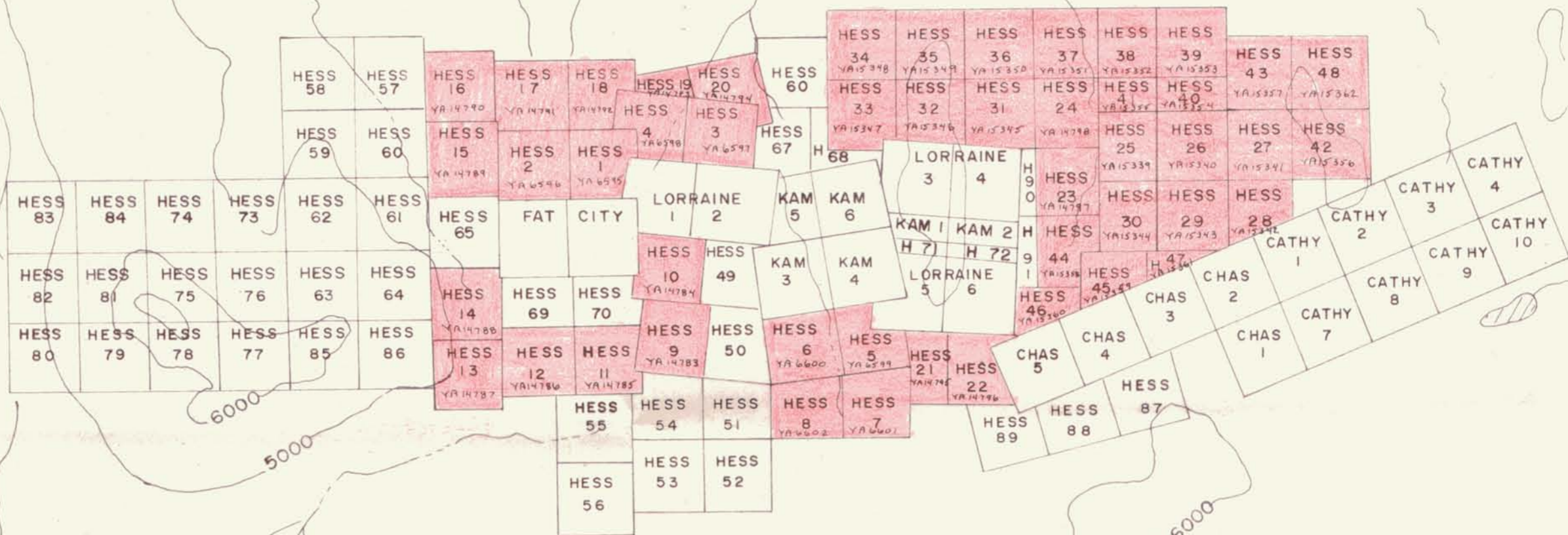
- REFERENCE
- Boundaries
 - Roads
 - Rivers
 - Lakes
 - Settlements
 - Railways
 - Power lines
 - Telephone lines
 - Telegraph lines
 - Lighted towers
 - Unlighted towers

13	14	15	16
12	11	10	9
5	6	7	8
4	3	2	1

N.T.S. GRID REFERENCE



Drawn by:	Traced by:	LOCATION MAP		
Revised by:	Date:			HESS CLAIMS, YUKON TERRITORY
Information plotted on overlay by:	Date:	Scale: 1" = 10 Mi.	Date: SEPT. 1977	Plate: 2



R. J. Sharp

HESS CLAIMS

YUKON TERRITORIES



Drawn by: **RJS** Traced by:

Revised by: Date: Revised by: Date:

COMINCO HESS GROUP

CLAIM SHEET 105-0-7


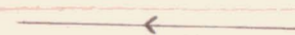

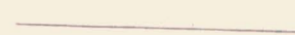
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Date: AUG 1977

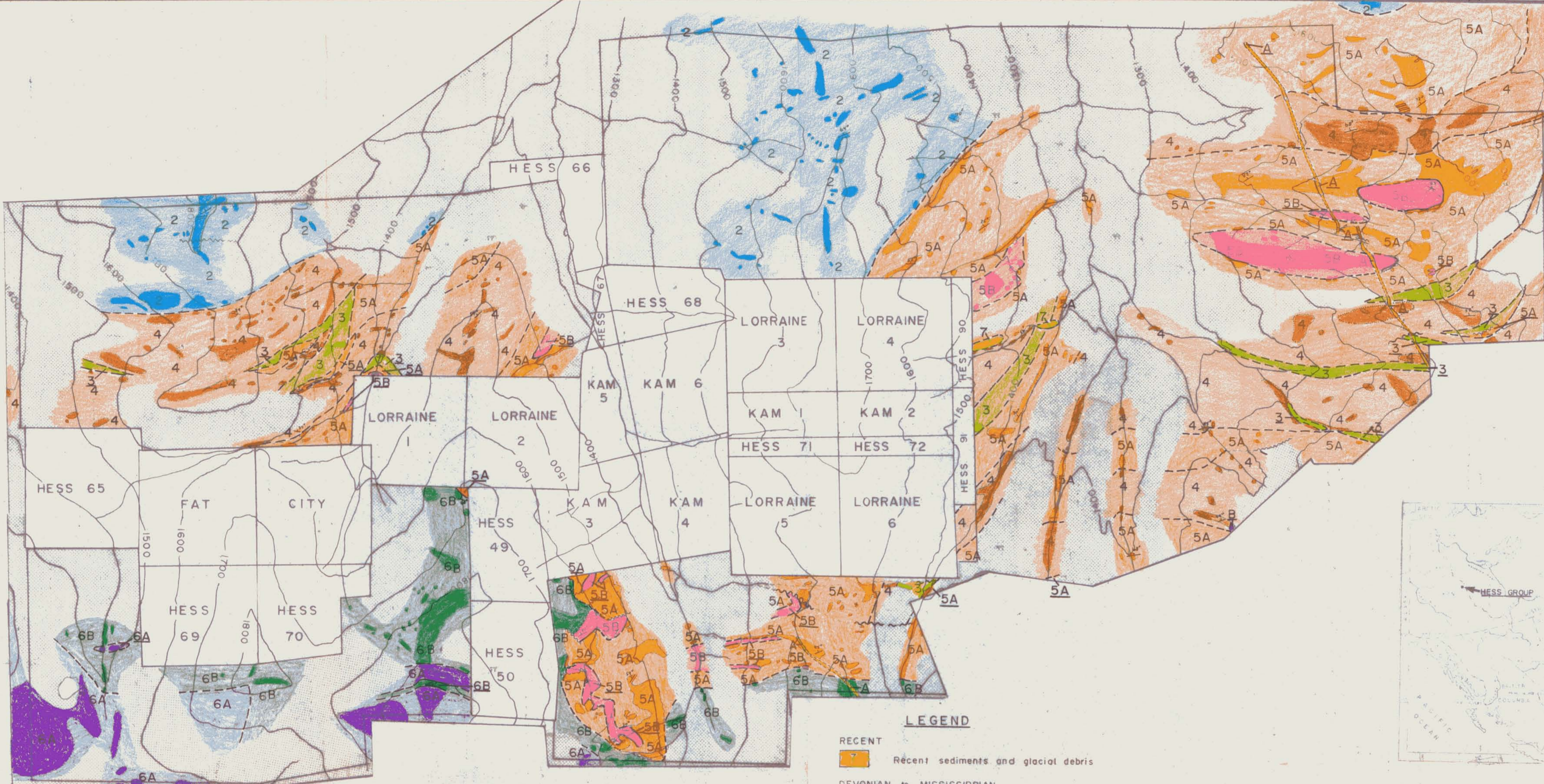
Plate: 3A



SYMBOLS

-  CLAIM POST
-  LOCATION LINE
-  COMINCO CLAIM BOUNDARY
-  BAROID CLAIM BOUNDARY

Hess Group, Yukon Terr. 			
Drawn by: <i>R.J. Shap</i>		Traced by:	
Revised by:	Date:	Revised by:	Date:
CLAIM LOCATIONS			
Scale: 1:10,000		Date: AUG. 26 / 77	
		Plate: 3 B	

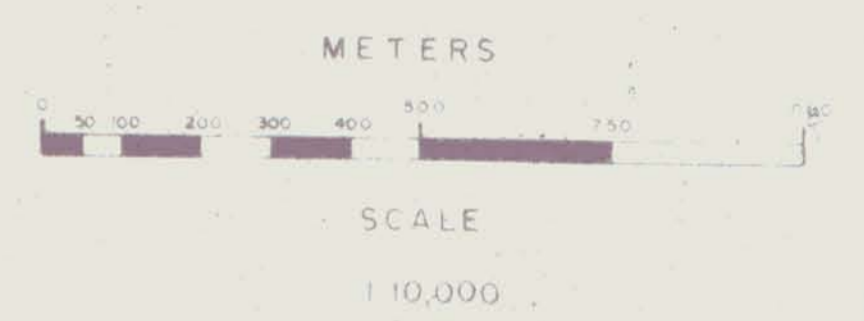
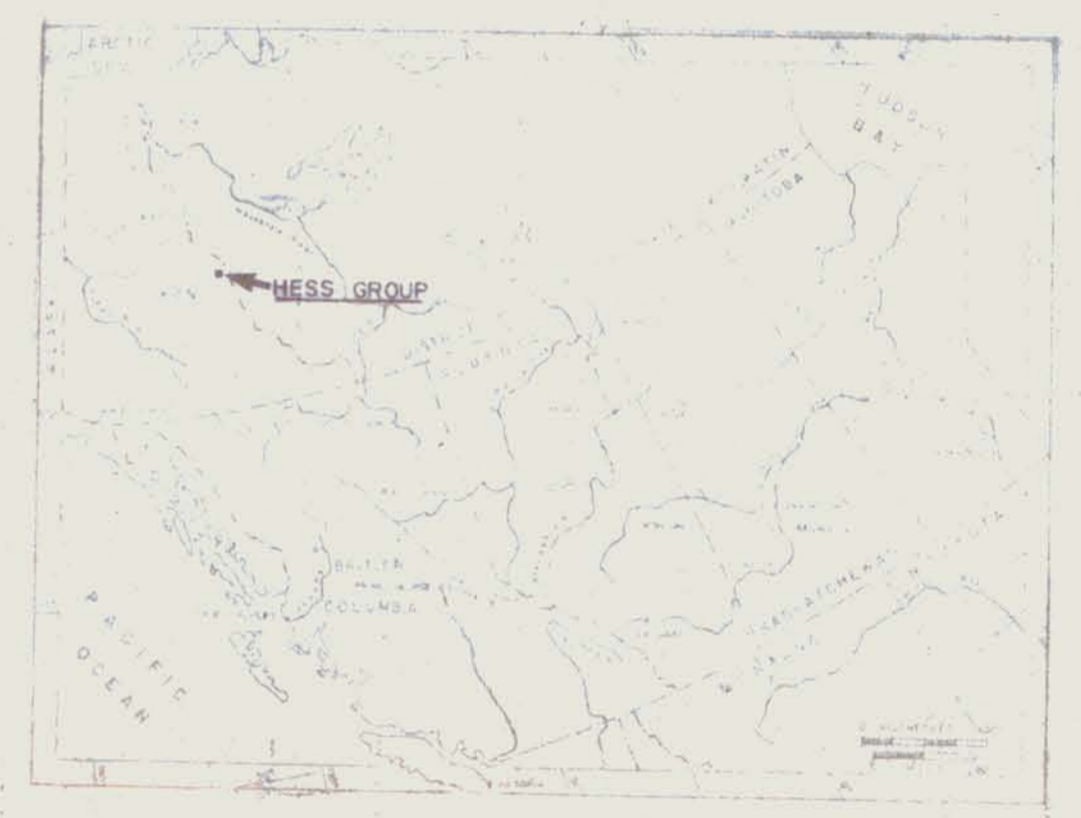


SYMBOLS

- Geological Contact
- Definite ———
 - Assumed - - - - -
- Fault
- Definite ~~~~~
 - Assumed ~~~~~
- Strike and Dip ↘ 70°
- Outcrop Location [Symbol]
- Overburden Cover [Symbol]

LEGEND

- RECENT**
- [Symbol] Recent sediments and glacial debris
- DEVONIAN to MISSISSIPPIAN**
- [Symbol] Conglomerate, Sandstone, Carbonaceous Shale
 - [Symbol] Chert and siltstone pebble conglomerate
 - [Symbol] Carbonaceous shale with brown siltstone laminations
- Middle to Upper SILURIAN**
- [Symbol] Carbonaceous shale and cherty siltstone, barite
 - [Symbol] Carbonaceous shale and cherty siltstone
 - [Symbol] Barite and witherite (massive and laminated)
- Lower to Middle SILURIAN**
- [Symbol] Flaggy mudstone and siltstone, chert, shale, dolomite, barite
- Upper ORDOVICIAN to Lower SILURIAN**
- [Symbol] Graptolitic shale and siltstone
- Lower to Upper ORDOVICIAN**
- [Symbol] Predominantly dolomitic siltstone and sandstone; minor limestone, chert, and shale
- CAMBRIAN**
- [Symbol] Phyllite, sandstone, limestone
- A - Quartz-eye Rhyolite Dyke
 B - Mafic Dyke



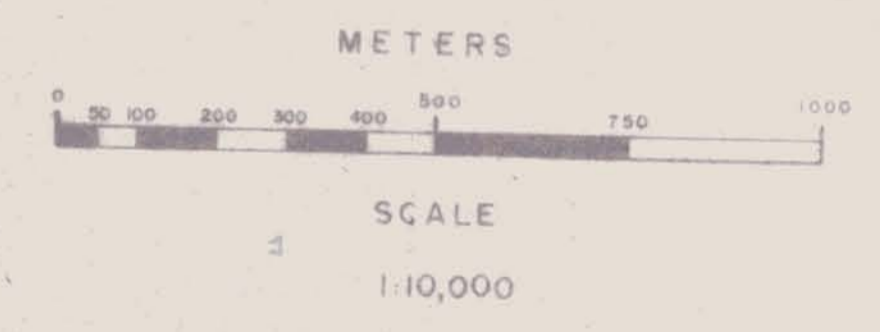
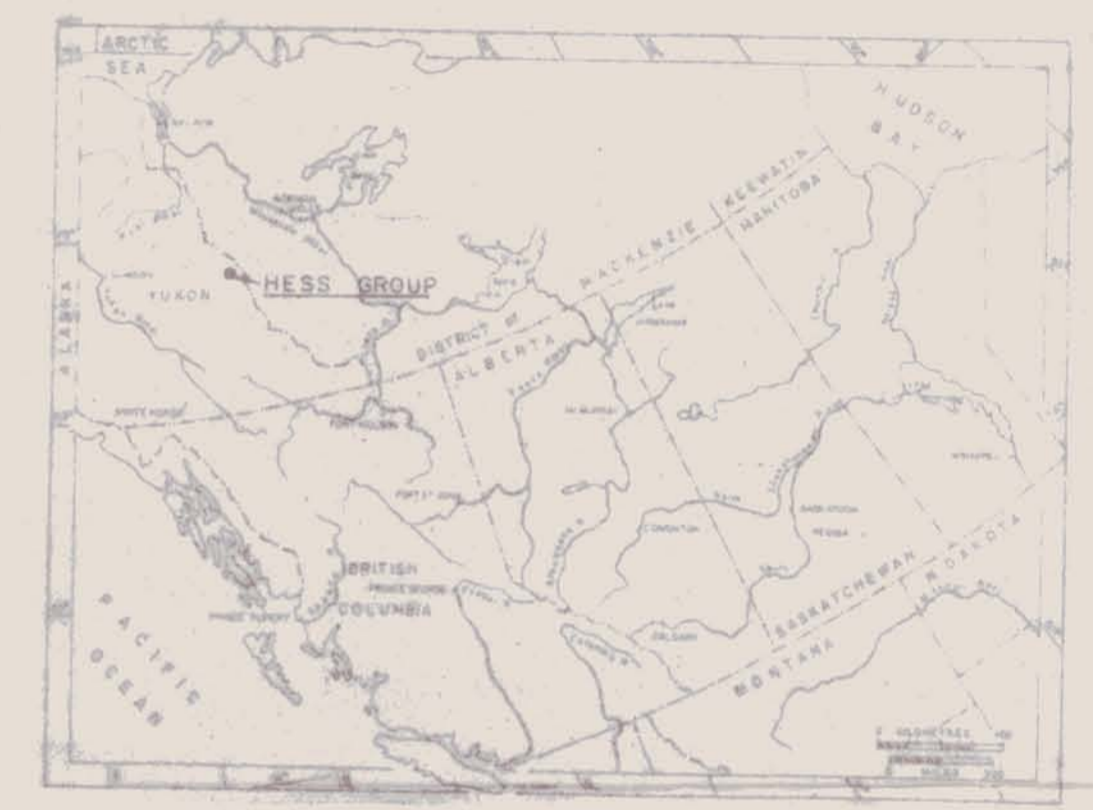
R.J. Slap

HESS GROUP, YUKON TERRITORY

Drawn by	RJS	Traced by	
Revised by		Approved by	
Date		Date	

GEOLOGY

Scale 1:10,000 Date SEPT 1977 Plate 4



LEGEND

- > 180 Anomalous
 - 140-180 Possibly Anomalous
 - < 140 Background
 - ~ Anomalous
 - ~ Threshold
 - Cominco claims covered in assessment report
 - Cominco claims
 - Non-Cominco claims
- All values given in PPM.

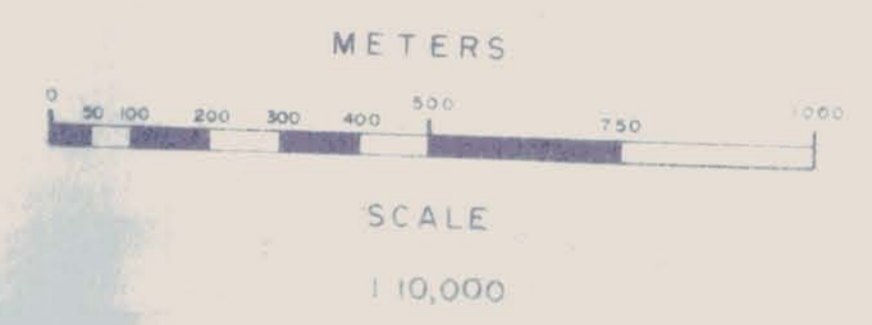
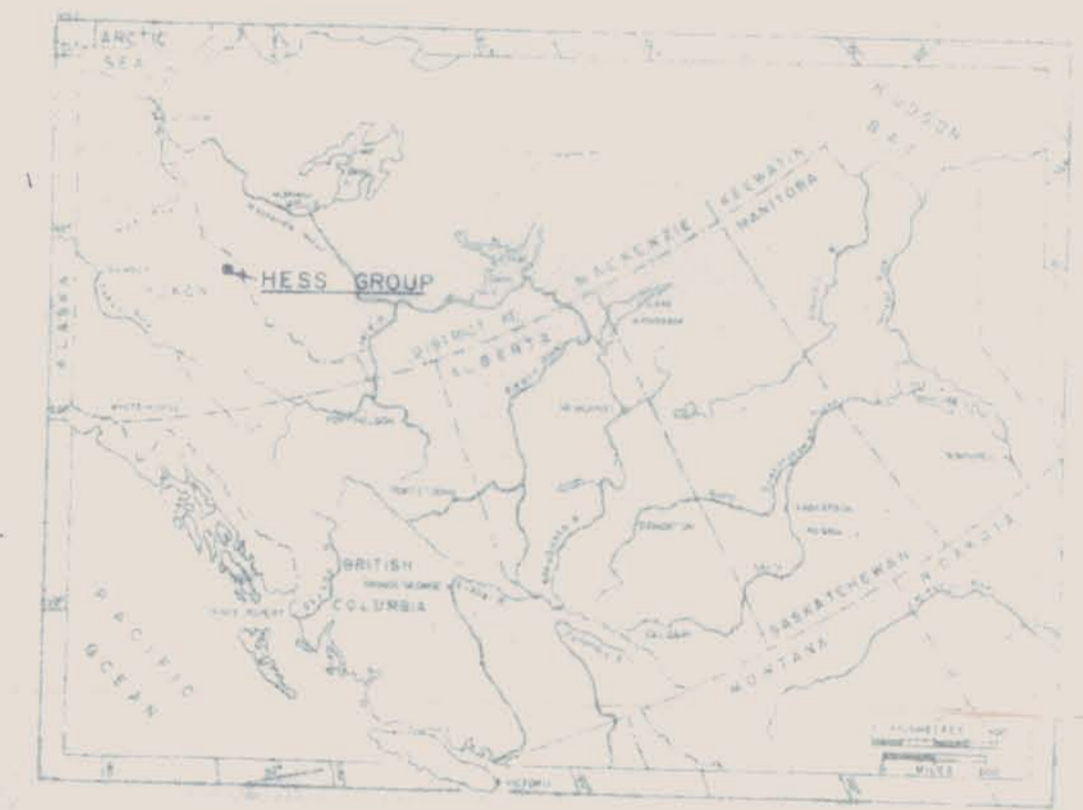
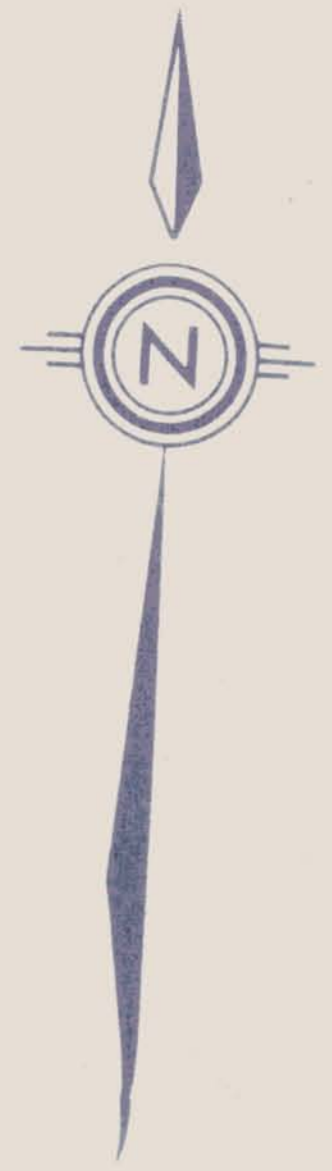
R.J. Slap

HESS GROUP, YUKON TERRITORY

Drawn by: R.J.S.	Traced by:
Revised by: _____	Revised by: _____

COPPER GEOCHEMISTRY (SOIL)

Scale: 1:10,000 Date: SEPT 1977 Plate: 5A



LEGEND

- >55 Anomalous
 - 44-55 Possibly Anomalous
 - <44 Background
- All values given in PPM.
- Anomalous
 - Threshold
 - Cominco claims covered in assessment report
 - Cominco claims
 - Non-Cominco claims

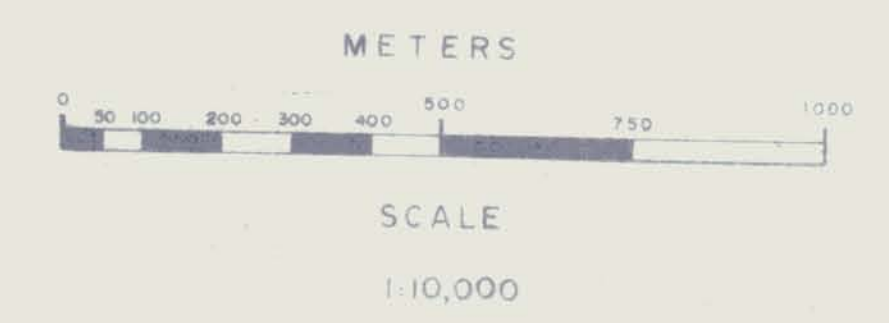
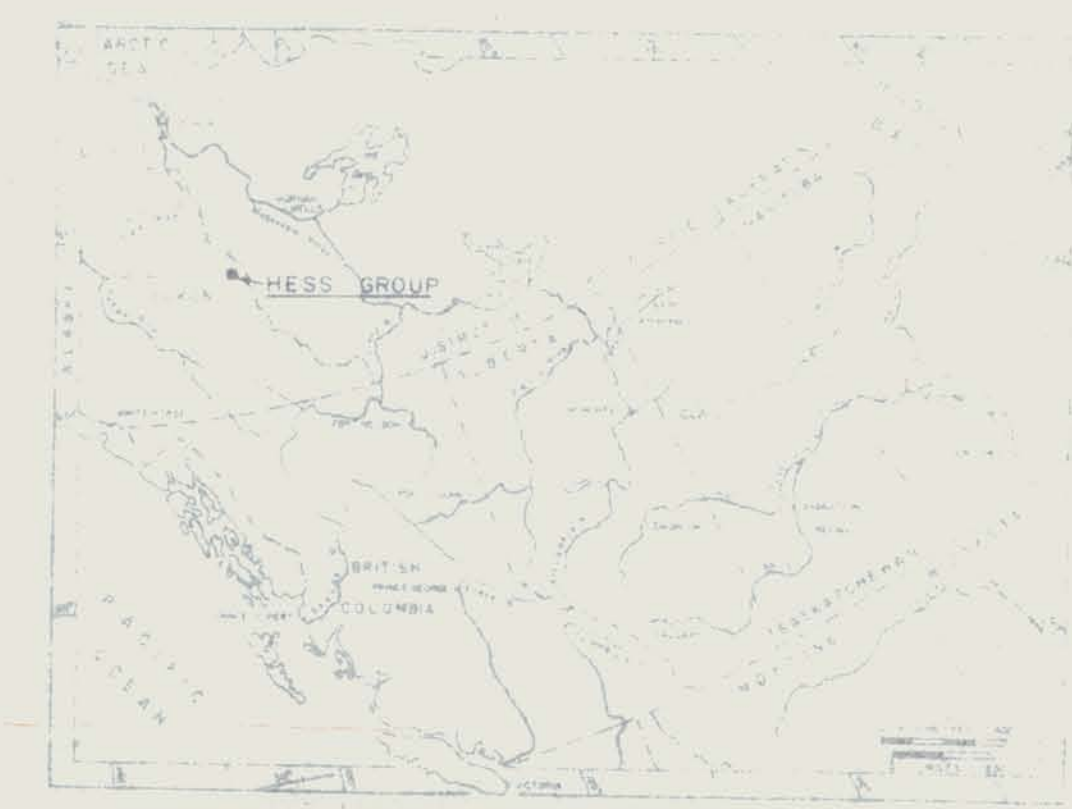
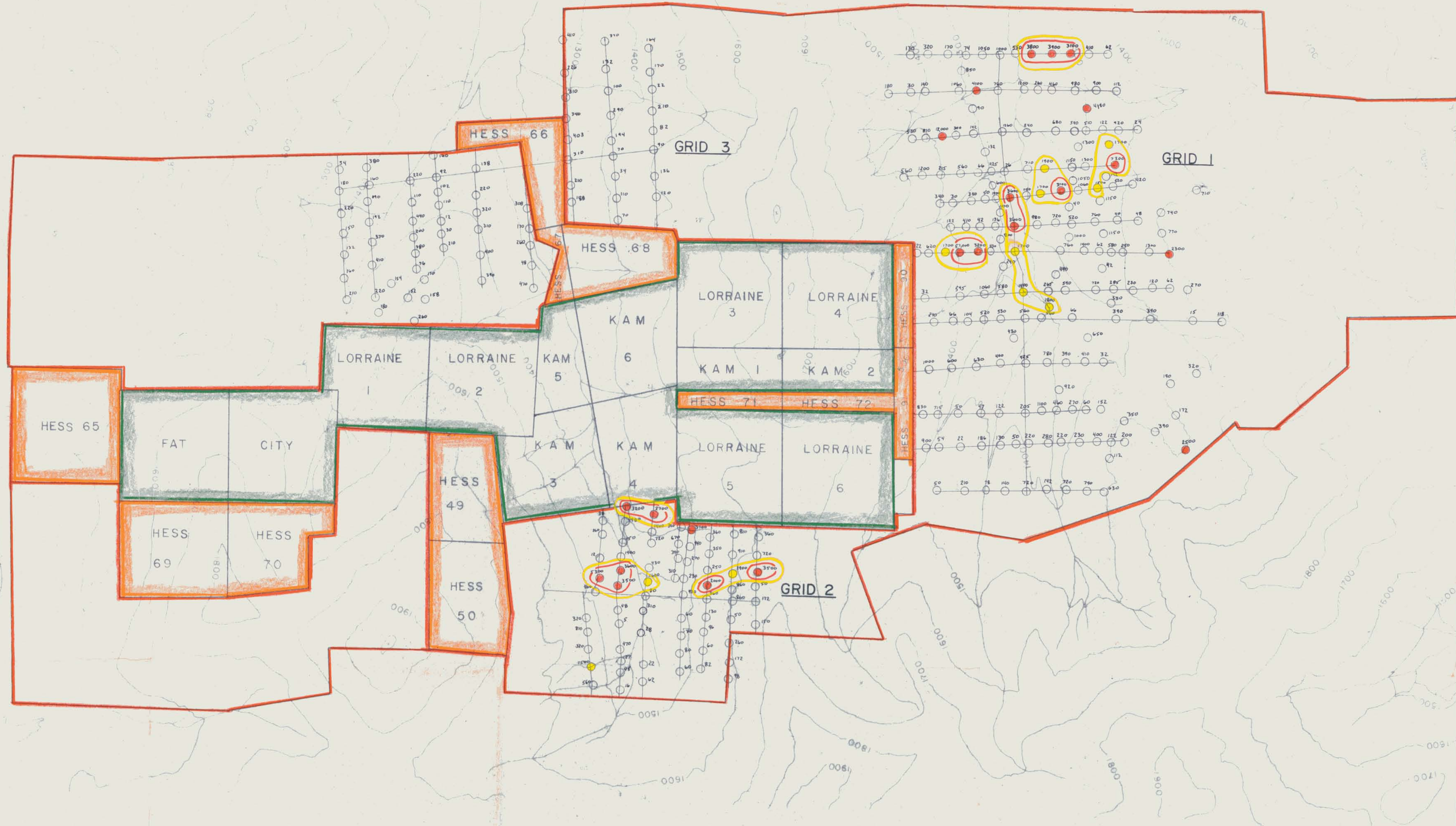
R.J.S.

HESS GROUP, YUKON TERRITORY

Drawn by R.J.S.		Traced by	
Revised by	Date	Revised by	Date

LEAD GEOCHEMISTRY (SOIL)

Scale 1:10,000 Date SEPT 1977 Plate 58



LEGEND

- >1920 Anomalous
 - 1430-1920 Possibly Anomalous
 - <1430 Background
 - Anomalous
 - Threshold
 - Cominco claims covered in assessment report
 - Cominco claims
 - Non-Cominco claims
- All values given in PPM.

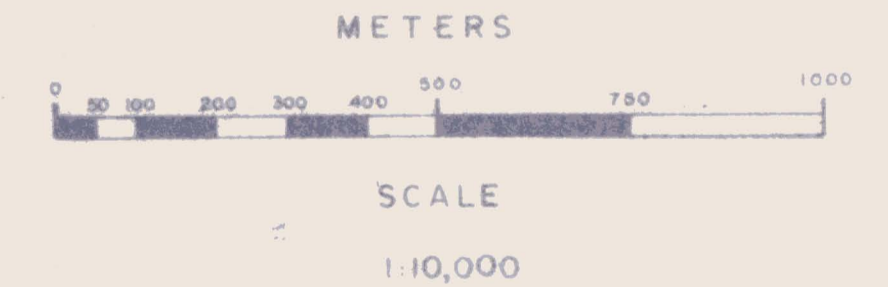
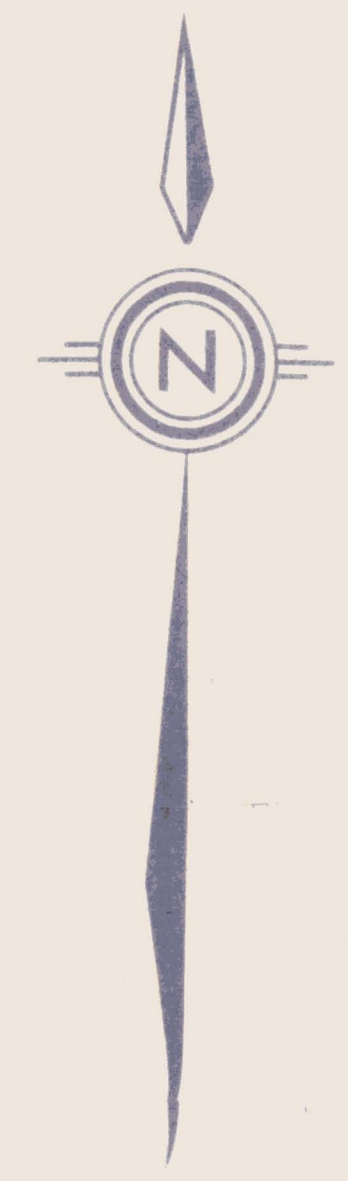
R.J. Slop

HESS GROUP, YUKON TERRITORY

Drawn by: RJS	Traced by:
Revised by: _____	Revised by: _____
Date: _____	Date: _____

ZINC GEOCHEMISTRY (SOIL)

Scale: 1:10,000 Date: SEPT 1977 Plate: 5C



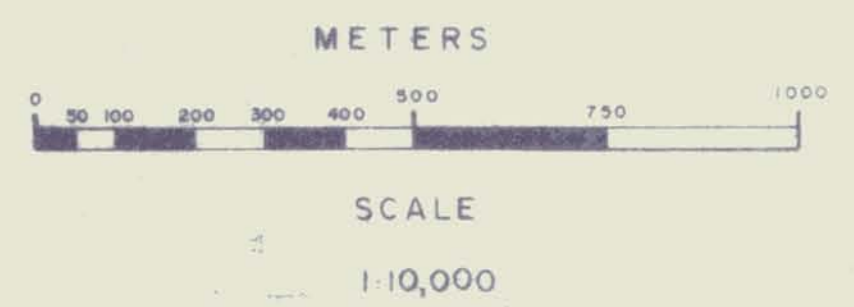
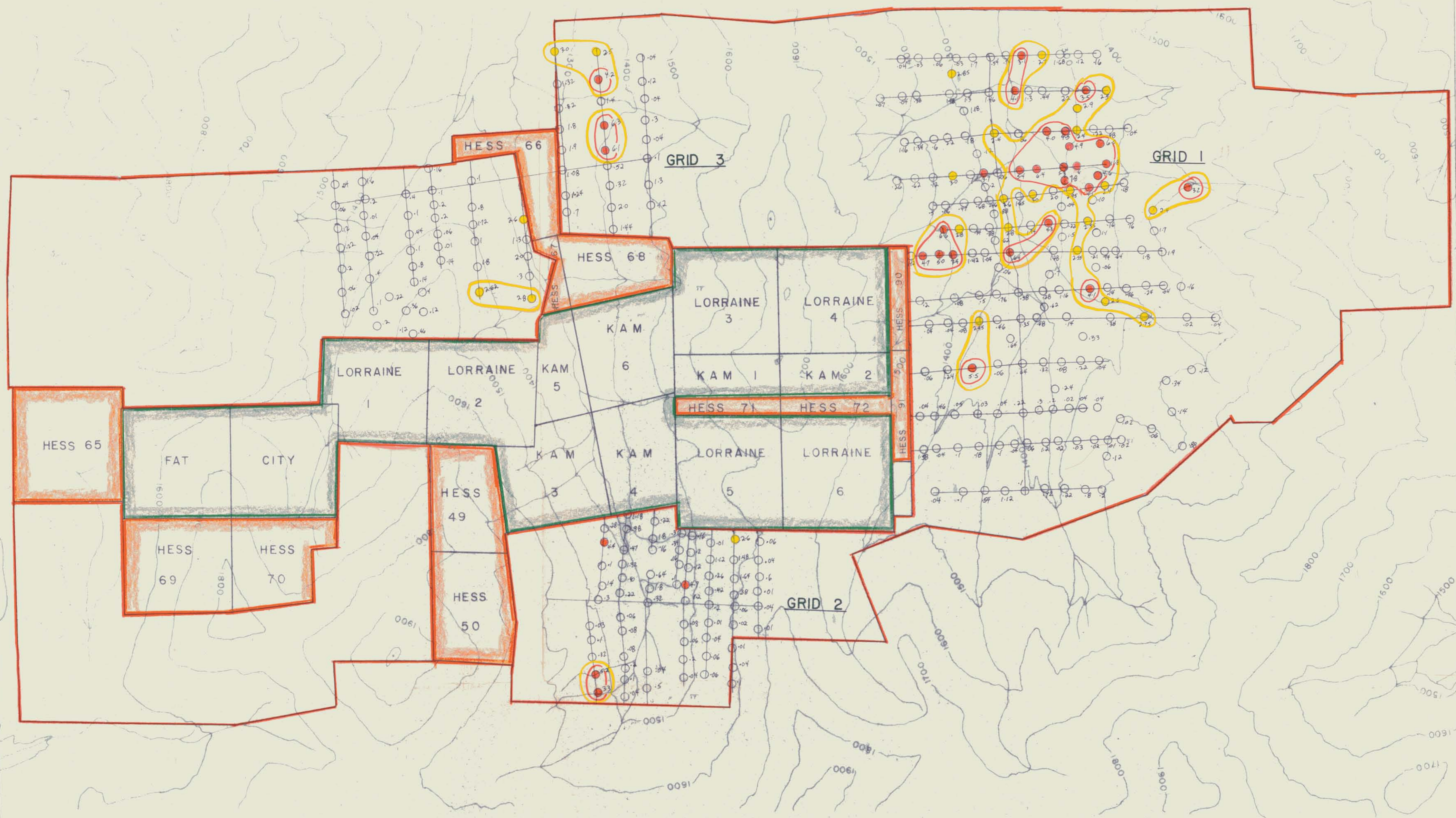
LEGEND

- > 4.90 Anomalous
- 3.66 - 4.90 Possibly Anomalous
- < 3.66 Background
- ~ Anomalous
- ~ Threshold
- Cominco claims covered in assessment report
- Cominco claims
- Non-Cominco claims

All values given in PPM.

R.J. Shop

HESS GROUP, YUKON TERRITORY			
Drawn by: R.J.S.	Traced by:	SILVER GEOCHEMISTRY (SOIL)	
Revised by: _____	Date: _____	Revised by: _____	Date: _____
Scale: 1:10,000		Date: SEPT 1977	Plate: 5D



LEGEND

- > 3.02 Anomalous
 - 2.22-3.02 Possibly Anomalous
 - < 2.22 Background
 - ~ Anomalous
 - ~ Threshold
 - Cominco claims covered in assessment report
 - Cominco claims
 - Non-Cominco claims
- All values given in PPM.

R.J. Slap

HESS GROUP, YUKON TERRITORY

Drawn by: R.J.S.	Traced by:
Revised by: _____	Revised by: _____
Date: _____	Date: _____

**BARIUM GEOCHEMISTRY
(SOIL)**

Scale: 1:10,000 Date: SEPT 1977 Plate: 5E