REPORT
of
1980 EXPLORATION
for the
STORMY MOUNTAIN MINERAL PROSPECT
Upper Sheep Creek Area
Quiet Lake Map Sheet
Yukon Territory

for
RIO ALTO EXPLORATION LTD.

by
DON HOY
October 1980
Whitehorse, Yukon Territory

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

$ 44,800.00

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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REPORT OF 1980 EXPLORATION FOR THE

STORMY MOUNTAIN MINERAL PROSPECT, YUKON TERRITORY

INTRODUCTION

The Stormy Mountain mineral prospect is a molybdenum-tungsten skarn deposit located 12 miles east of Mile 98 on the South Canol Road and 36 miles south of Ross River, near the headwaters of Upper Sheep Creek, Yukon Territory (Figure 1). The deposit is exposed on surface and in an adit at an elevation of 6400' on the southerly slope of a 7000' ridge, known as Stormy Mountain. Access to the property is provided by a 14-mile 4-wheel-drive tote road originating at Mile 98 on the South Canol Road. A total of 112 mineral claims consisting of PM claims (1-4) and MP claims (1-108) constitute the property (Figure 2). All mineral claims are located on National Topographic Series Map Sheets 105-F-7 and 105-F-10.

This report outlines the exploration activity conducted and results obtained during the 1980 field season, the second season of exploration on the prospect for Rio Alto Exploration Ltd.

HISTORY AND WORK TO DATE

The original discovery was made in 1955 by Arnold Racicot, a prospector in the employ of Conwest Exploration. Discovery of a disseminated molybdenum showing along a limestone-granodiorite contact resulted in the blasting of 11 hand trenches across the contact.

In 1958, Canol Metal Mines of Toronto, Ontario optioned the property and spent the field seasons of 1958 and 1959 conducting an exploration program of geological mapping, prospecting, diamond drilling, access road and camp construction, in addition to underground adit work. The discovery of three mineralized zones resulted in 3460' of diamond drilling and 1050' of lateral drifting and cross-cutting. Canol's discoveries included:

(1) A high-grade pipe-like deposit, apparently limited to 1000 tons and averaging 2.4% MoS_2 (Zone A).

(2) A flat lying deposit of approximately 15,000 tons of 1.21% MoS_2 over an average thickness of 8.2' (Zone B).

(3) A second flat lying deposit of approximately 17,000 tons of 1.05% WO_3, with an average thickness of 7' which is partially coincident with the MoS_2 deposit (Zone C).

Jason Explorers of Vancouver, B.C. conducted an assessment program of geochemistry, geological mapping, prospecting and surface trenching over and adjacent to the original property in 1967 and 1968. Subsequently, four new molybdenum showings were discovered, none of which were considered economically viable at that time.

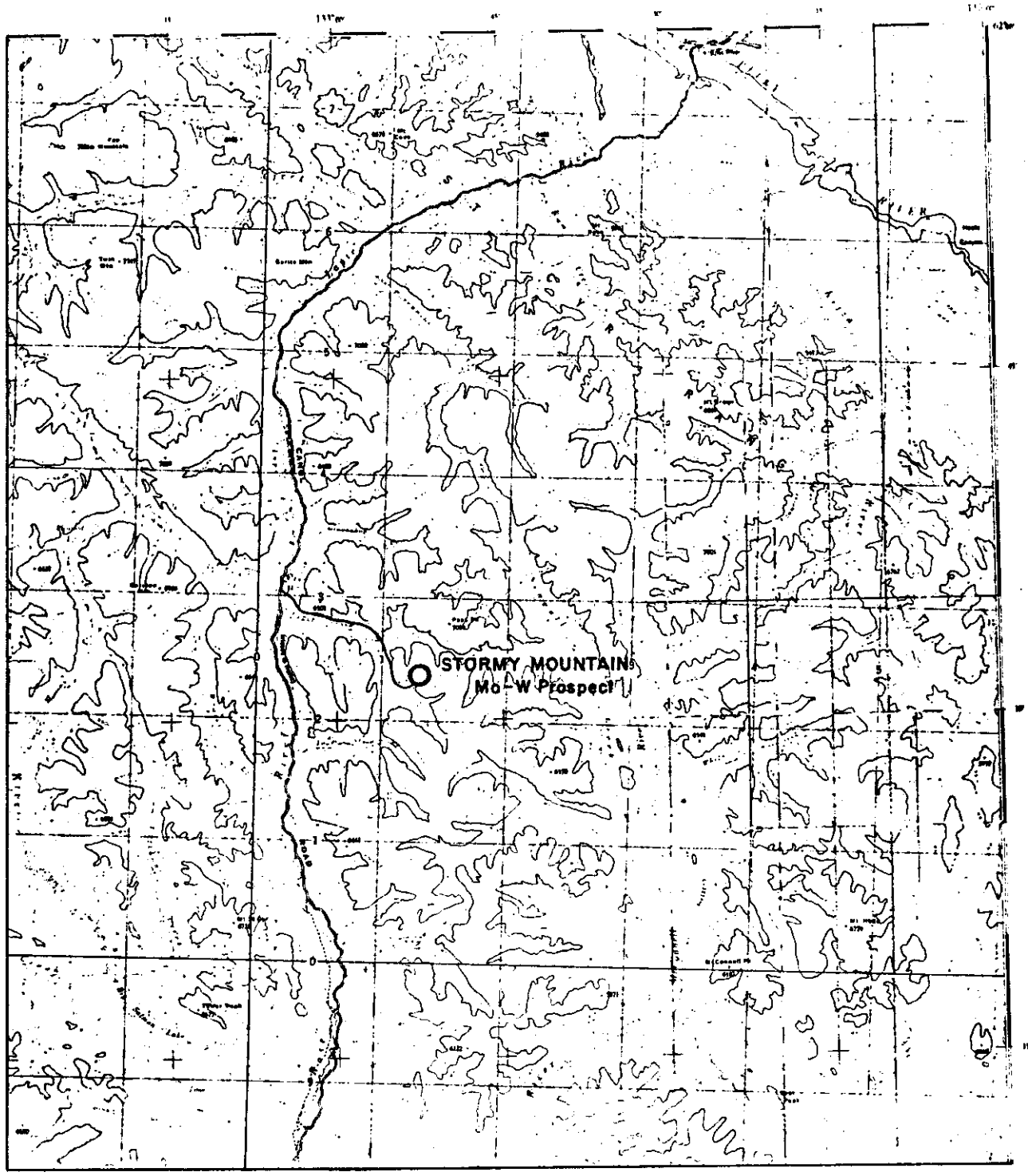


Figure 1

LOCATION MAP
OF THE
STORMY MOUNTAIN
Mo-W Prospect

SCALE: 1 INCH TO 8 MILES

-Prepared for-

RIO ALTO EXPLORATION LTD.

A Whitehorse prospector by the name of Marvin Sherman restaked the property as the PM 1-4 group in September of 1975, following a lapse in good standing of the property. In March of 1979, Rio Alto Exploration of Calgary, Alberta optioned the property for 1979 exploration in a preliminary agreement with Mr. Sherman. Rio Alto staked 96 new claims (MP 1-96) surrounding the optioned group. In October of 1979, Rio Alto conducted an exploration assessment on the property which included property examination, line-cutting with subsequent geochemical sampling, conventional prospecting, underground adit restoration and bulk sampling.

In the summer of 1980, Rio Alto Exploration Ltd. conducted a re-assessment and examination program of mining feasibility studies, in addition to a surface exploration program designed to expand on known mineralized reserves. The exploratory assessment work conducted in 1980 involved geological mapping, prospecting, geochemical sampling and diamond drilling. Feasibility and preparatory work performed on the mineralized Zones A, B and C included diamond drilling, lithochemical sampling and adit retimbering and restoration. The surface exploration program resulted in the discovery of 10 new mineralized showings. Rio Alto also staked an additional 12 mineral claims surrounding new finds, thus increasing the number of mineral claims to a total of 112 (Figure 2).

Road access was commenced in snow on May 8th, 1980. The spring thawing conditions prevented heavy truck traffic until late June. The fall snows commenced in late August, but some late-season warm weather gave relief and some surface work and any underground work could have been performed without major difficulty until early October. The optimum time for hauling freight up to Mile 12 is seen as March or April of each year.

OBJECTIVES OF THE 1980 EXPLORATION PROGRAM

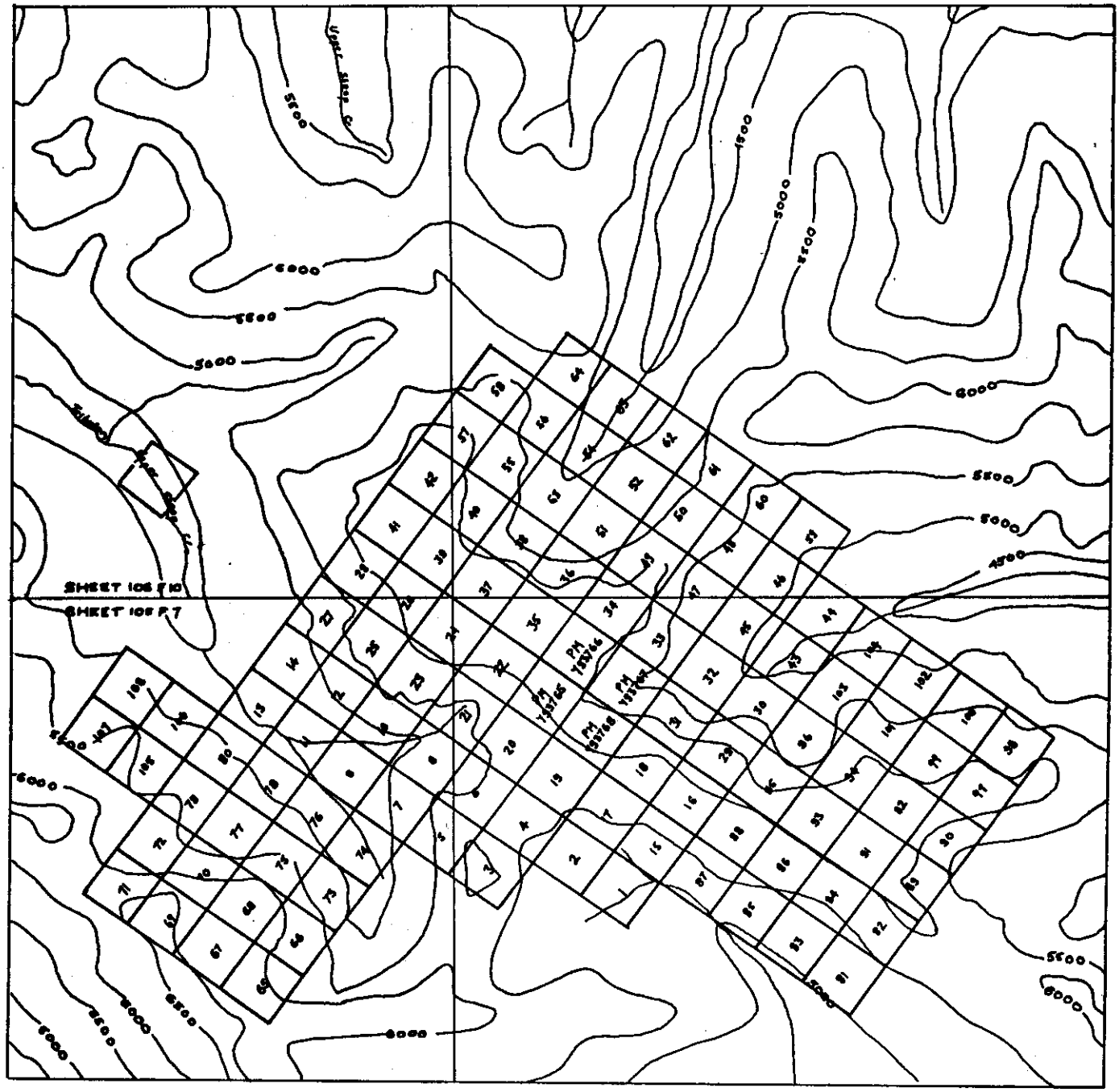
On the strength of accumulated data obtained from the 1979 exploration program and recommendations outlined by Paul S. White and Don Hoy in their reports "Report of Proposed 1979 Exploration Program of the Stormy Mountain Mineral Prospect, Upper Sheep Creek Area, Yukon Territory" and "Proposed 1980 Exploration for the Stormy Mountain Mo-W Prospect, Upper Sheep Creek Area, Yukon Territory", respectively, it was decided that the following methods of examination and assessment be employed at the prospect:

(1) A detailed program involving geological mapping and prospecting be carried out on the prospect on both the PM and MP claims, with the primary objectives of producing a geological map, locating definitively the intrusive-metasediment contact and to discover new showings. Additionally, examination of the known mineralized bodies in the PM claims would allow for an extension of the "mineralization concept" to other favourable areas in the claim group.

(2) A detailed soil sampling survey be conducted on the prospect on a grid system of conventional lines and pickets, with the objectives of confirming or improving geochemical data obtained in 1979 surveys and also to define anomalous areas of potential mineralization.

(3) A diamond drilling program in the order of 2000' be conducted on the prospect, with a twofold objective: firstly, check-holes be drilled in

Figure 2



LOCATION SKETCH
MP 1-112 MCs

WATSON LAKE MINING DISTRICT

SHEETS: 105 F 7
105 F 10

FT 3000 0 3000 6000 9000 FT.

October 1980

close proximity to mineralized Zones A, B and C, with the primary objective of verifying W. E. Field's 1959 estimates as to quantity and grade of MoS_2 and WO_3; secondly, reconnaissance holes be drilled in areas of interesting geochemical or geophysical surveys and surface finds, with the objective of intersecting new showings and/or extending the knowledge of mineralization.

(4) Detailed and reconnaissance geophysical surveys involving magnetic and radiometric methods be conducted on the prospect to assist in locating skarn zones and additional mineralization.

The following personnel were involved in the 1980 exploration program:

Paul S. White	Supervisory Engineer
Bert Taylor	Field Engineer
Don Hoy	Project Geologist
Glen Rogers	Geological Assistant
Lee Poscente	Geological Assistant
Eric Huggard	Geological Assistant
Steven Smith	Geological Assistant
Caron Diamond Drilling	4-man Drill Crew
Robert Lebras	Miner
Stephen Marada	Miner
Richard Poulin	Miner
William Carson	Cat Skinner
MBW Surveys	Line-cutters and Stakers (4-man crew)
Ghyslaine Lemay	Cook
Lee Carson	Cook
Clinton Flood	Expediter - Personnel Manager

DESCRIPTION AND RESULTS OF 1980 EXPLORATION

I Geology

The regional geology of the district known as the Quiet Lake Map Sheet, in which the Stormy Mountain Mineral Prospect is located, was mapped and described by Wheeler, Green and Roddick of the Geological Survey of Canada in the late 1950's and early 1960's. Recently, D. J. Templeman-Kluit of the Department of Indian Affairs and Northern Development compiled the work of the aforementioned with the more contemporary work of S. P. Gordey, G. Abbot and Templeman-Kluit to produce the most recent geological map of the district. The map accompanies a G.S.C. open file report describing the geology of the Quiet Lake and adjacent Finlayson Lake Map Sheets.

In view of the fact that there is a lack of geological knowledge on the property, outside the vicinity of the mine adit itself, it was decided that geological mapping would be carried out on two different scales: first and foremost, a geological map of the property was produced, emphasizing the gross geological characteristics such as the intrusive-metasediment contact, general rock types and regional structural trends; secondly, a more detailed geological map was produced, utilizing the 1980 grid as a control and outlining the geology of the mine adit locale and adjacent area in finer detail. Both of these maps are included herein as Figures 3 and 4 respectively. Unfortunately, mapping of the claim block was not completed; however, the following geological observations are worth noting.

The rocks at the Stormy Mountain mineral prospect consist of igneous intrusive rocks of Cretaceous age and metasedimentary rocks constituting three mappable units ranging in age from Upper Proterozoic to Upper Cambrian.

Upper Proterozoic metasedimentary rocks (uPms) in the form of a large xenolith occur in the extreme southwest corner of the claim block. Metasediments include grey weathering calcareous schist, silty slate and a whitish-grey quartzite. Garnet-diopside skarn is developed locally, proximal to the intrusive, and contains visible MoS_2. Aplitic dykes of probable Cretaceous age cross-cut the metasedimentary rocks at several locations.

Rocks of probable Lower Cambrian age are the dominant lithology on the prospect in that they are spatially widespread and contain the most mineralization. MoS_2 and WO_3 occur in two different skarn types: a massive dark green diopside skarn (ℓ€sk) and a thinly layered weakly developed tremolite-quartz-diopside skarn (ℓ€ℓsk). The layered skarn is commonly found stratigraphically higher up in the section than is the massive skarn and is believed by the writer to be the metamorphic equivalent of the metasediments (ℓ€ms). White to grey recrystallized limestone (ℓ€ℓs) is found in abundance in the vicinity of the major mineralized Zones A, B and C and is believed to be the precursor, prior to metasomatism of the massive, dark green diopside skarn. Metasediments (ℓ€ms), including grey foliated phyllite, biotite schist, locally developed to biotite hornfels, calcareous schist and black laminated argillite, constitute the remainder of the Lower Cambrian rocks. Structurally, the attitude of the sediments is probably a function of the "doming" effect of the intrusive, particularly in the area of the mine portal. Metasediment foliation and schistosity are almost invariably consistent with the bedding.

Grey to light green weathering, lustrous chlorite-muscovite schist and grey calcareous schist characterize the metasediments of Upper Cambrian age (u€ms). Their distribution is limited to the northern portion of the claim block.

Igneous intrusive rocks of the Cretaceous Rose Lake batholith include a medium to coarse grained biotite-K fledspar granite (Kpg), fine grained aplite dykes (Ka) and a grey to green, medium to coarse grained diorite. The granite commonly displays a porphyritic texture and becomes characteristically finer grained closer to the intrusive-metasediment contact. The nature of the contact can be best described as irregular, as cupolas and granitic satellites or apophyses are common in the area of the contact. As noted in the drill logs and in mapping the intrusive, a highly greisen altered granite is present in addition to a relatively unaltered granitce. This greisen is believed to be the result of probable late stage hydrothermal alteration in the intrusive event, perhaps concurrent with a stage of ore deposition, through separate pulses in the intrusive. A dark weathering, medium to coarse grained rock termed "diorite" by Schmidt (1959) occurs peripheral to the granite and adjacent to skarn, particularly in the vicinity of the mine adit. The writer believes that the "diorite" is formed in the same manner as skarn formation, i.e. through assimilation and metasomatism of the country rock with the intrusive, and is in effect a coarser grained, more silica-rich equivalent of skarn. Aplite dykes and sills appear to be the youngest rocks on the prospect, cross-cutting and intruding all the aforementioned units.

Structurally, the dominant trend exhibited by faults and linears on the prospect is at a northwest to southeast magnetic bearing. Generally, the sediments trend in a northeast to southwest bearing with gentle dips to the northwest but, as mentioned earlier, the forceful emplacement of the intrusive in all likelihood dictated bedding altitudes locally. Small, tight, drag folds appear to be most prominent in the limestones, indicating several phases of deformation, again suggestive of a multiphase intrusive event. Jointing is especially prominent in the granites, no doubt acting as pathways for mineralized solutions reaching their eventual sites of precipitation.

Mineralization

Mineralization at the Stormy Mountain prospect consists of rosettes of coarse grained molybdenite occurring disseminated in skarn and diorite as well as in the roof of the underlying granitic intrusive. Scheelite, with a significant powellite content is present, not always consistent with molybdenum and *vice versa*. The nature of the mineralization, with the exception of Zone A, is broadly stratiform.

During the course of 1980 mapping and prospecting, a total of 10 new showings were discovered (Figure 3). Mineralization is hosted in both previously described skarn types in contact metasomatic zones proximal to the contact in Upper Proterozoic and tower Cambrian age rocks. The salient factors of each showing are summarized below:

(1) Don Show:

- Mineralization consists of medium sized rosettes of MoS_2 and minor WO_3 in dark green diopside skarn.
- Grab sampled on a small grid (150 m x 50 m) due to the extensiveness of the showing in talus and outcrop, at 10 m intervals.
- Showing samples averaged 0.78% MoS_2 and .04% WO_3.

Sample Ticket Number	% MoS_2	% WO_3
441	0.010	0.08
442	0.22	0.04
443	0.007	0.01
444	0.68	0.02
445	1.26	0.02
446	0.20	0.01
447	0.55	0.02
448	1.97	0.07
450	0.11	0.02

(2) Cirque Show:

- Mineralization consists of MoS_2 rosettes hosted in layered garnet-epidote-diopside skarn.
- Sampled systematically on a small grid due to its aerial extent in talus and outcrop.
- Showing averages 0.23% MoS_2 and 0.02% WO_3.

Sample Ticket Number	% MoS_2	% WO_3
433	0.071	0.01
434	0.17	0.05
435	0.037	0.01
436	0.050	0.01
437	0.17	0.03
438	0.18	0.05
439	0.15	0.02
440	0.27	0.01
441	0.96	0.01

(3) Talus Show:

- Mineralization at this showing consists of molybdenum and tungsten hosted in tremolite-quartz-diopside skarn.
- The showing is located in talus piles and in outcrop adjacent to intrusive rocks and aplite dykes.
- A grab sample from the showing assayed 0.067% MoS_2 and 0.49% WO_3.

(4) Lee Show:

- The showing consists of disseminated MoS_2 and small rosettes of MoS_2 hosted in garnet-diopside-tremolite skarn.
- Skarn replaces units of interbedded recrystallized limestone and biotite schist.
- Significant in the way that the showing is stratigraphically higher in the section away from the intrusive than any other showing.
- Assays from grab samples are 0.62% MoS_2 and 0.08% WO_3.

(5) Kid Show:

- The showing consists of small to medium rosettes of MoS_2 in a ½ m thick unit of garnet-diopside skarn.
- Skarn appears to replace limestone beds in a series of intercalated sub-units of limestone and biotite schist.
- Assays obtained from the show are 0.19% MoS_2 and 0.02% WO_3.

(6) Bert Show:

- Mineralization is characterized by large fan-shaped rosettes of MoS_2 in intimate association with deformed quartz veins and lenses (boudins).
- Mineralization hosted in weakly developed, layered tremolite-diopside skarn replacing foliated biotite schist.
- Assays average .18% MoS_2 and .03% WO_3.

Sample Ticket Number	% MoS_2	% WO_3
410	0.37	0.01
411	0.17	0.02
412	0.093	0.03
413	0.17	0.03
414	0.038	0.02
415	0.058	0.04

(7) Discovery Show:

- Mineralization at this showing consists of small to medium rosettes of MoS_2 hosted in diopside-garnet skarn replacing Upper Proterozoic calcareous schists and biotite schists.
- Exposure of the showing is limited to mineralized boulders in a talus pile located in the extreme southwest corner of the claim block.
- A grab sample obtained from the show assayed 0.06% MoS_2 and 0.02% WO_3.

(8) Skarn Show:

- Located 800' south of the Discovery show.
- Mineralization consists of small rosettes and disseminated MoS_2, hosted in fine grained, dark green diopside skarn, intimately associated with an aplite dyke.
- Assays obtained from a grab sample were 0.14% MoS_2 and 0.04% WO_3.

(9) Xenolith Show:

- Small rosettes of molybdenum and disseminated molybdenum are hosted in garnet-diopside skarn replacing metasedimentary rocks.
- The showing consists of mineralized rubble in talus, and the presence of aplitic dykes nearby was noted.
- No assay was obtained for the showing; however, an estimate of the grade of the mineralization would be in the order of 0.1 to 0.5% MoS_2.

(10) Trench Show:

- Mineralization consists of small to medium rosettes of MoS_2 and small euhedral crystals of scheelite in dark green diopside skarn.
- No assay was obtained for the showing; however, an estimate of the grade would be approximately 0.1-0.5% MoS_2 and up to 0.5% WO_3.

II Geochemistry

Geochemical surveys conducted at the Stormy Mountain Mineral Prospect during the 1980 field season included soil sampling, creek sampling and lithochemical sampling.

Approximately 2500 soil samples were collected from one large grid, herein referred to as the Stormy Mountain 1980 grid. Samples were obtained from the "B" horizon in the soil profile, encountered from 6" to 10" below the surface, and were assayed for Mo, W, Cu, Sn, U and Fe. Metal content in soils for each of the respective elements were plotted and contoured and are included in this report as Figures 5 - 10 inclusive. Clearly, on inspection of the data, results obtained from the 1980 survey are significantly higher than those obtained from the 1979 survey. In view of the fact that sampling done in 1979 was conducted in October and considering the shallow depth at which permafrost was encountered at that particular time, this result is not surprising.

Because of the lack of outcrop and geochemical coverage on the grass-covered southwesterly slope of Stormy Mountain, it was decided that silt sampling of the numerous creeks on the southwesterly slope would provide the best means of obtaining a reconnaissance survey of metal content in the sub-

surface. Subsequently, a total of 50 silt samples were collected from the creek beds and assayed for W and Mo. Metal content and sample locations are illustrated in Figure 11.

Lithochemical sampling was conducted at several locales on the property. Most notable are samples collected from mineralized shows and also those collected from inside the portal at the site of mineralized Zone A. Chip sampling (4-6 lb samples) was performed within the pipe-shape deposit and, additionally, six barrels of high-grade ore were mucked and shipped for the purpose of performing metallurgical tests and also verifying previous grades of MoS_2 and WO_3.

III Geophysics

Two methods of geophysical exploration were employed at the Stormy Mountain mineral prospect in 1980: these included magnetics and radiometrics.

A scintillometer survey was conducted over the 1980 grid with the use of an S.P.P. 2NF Scintillation Meter. Gamma rays emitted from K, Rb, Sr and other trace and rare earth elements typical of most granites resulted in granites generally possessing higher radioactivity than sediments and metamorphic rocks, particularly K-rich granites. Sudden drops in consistently high gamma counts to lower counts might represent a granite-metasediment contact and thus the potential for skarn and/or mineral formation. R. Gifford, P.Eng. utilized this method as a usable prospecting tool on the prospect in 1976. Unfortunately, the 1980 scintillometer survey encountered changes in radioactivity which were too subtle and this method was therefore not useful in assisting to locate contact zones. This may be explained in part by a faulty survey instrument or anomalously low radioactivity in the granites. In view of the relatively high uranium content, as indicated by the geochemical survey, and the high K content of the granite as evidenced by the apparent high modal percentage of K feldspar, the latter is not considered likely.

The magnetic survey was conducted over the 1980 grid with a Scintrex MF-1 fluxgate magnetometer. The survey was used as a prospecting tool on the concept that the magnetometer would assist in locating areas of high magnetic susceptibility, which is characteristic of skarn zones due to their enrichment of iron. Skarn zones examined in 1980 are characteristically rich in pyrrhotite and pyrite, and it was hoped that the enrichment in iron would show up in the survey. The preliminary draft of the 1980 survey (Figure 12) does not appear at this time to indicate any trends or anomalous areas which are consistent with known geology; however, a more detailed analysis of the data may indicate trends at a later time.

IV Diamond Drilling

A total of eight holes were drilled, for a total depth of 690 m (2315'), at the Stormy Mountain mineral prospects by Caron Diamond Drilling from August 24th to September 11th, 1980. Ground conditions on the whole were good - shifts averaging 80-100' were the norm rather than the exception. Core recovery, a problem encountered by Canol Metal Mines Ltd. during the course of their drilling program in 1959, was exceptionally good in 1980, averaging greater than 90%. Drilling was performed with the use of NQ size

Figure 11: Results and Location of 1980 Creek Sampling

■ SHOWING ▲ SAMPLE LOCATION Mo, W ▲ 3, 4 (PPM) SCALE 1" : 1750' (approximate)

drill rods coupled to a Longyear Super 38 drill. The overall good ground conditions, the constant availability of water, the good core recovery and general co-operation from the weather all contributed to a relatively trouble-free drilling program.

As outlined earlier in "Objectives of the 1980 Exploration Program", the purpose of the drilling was to pursue two objectives: diamond drill holes DDH-S.Mt.3-80, DDH-S.Mt.4-80 and DDH-S.Mt.5-80 were coined as check holes, located so as to intersect mineralized Zones B and C, with the primary objective of confirming W.E. Field's 1959 estimates as to quantity and grade of MoS_2 and WO3; diamond drill holes DDH-S.Mt.1-80, DDH-S.Mt.2-80, DDH-S.Mt.6-80, DDH-S.Mt.7-80 and DDH-S.Mt.8-80 were selected on the basis of geochemistry anomalies and/or mineralized surface finds, with the objective of encountering additional mineralization. All diamond drill holes are located on the 1980 grid (Figure 4). The highlights of each hole are summarized below.

DDH-S.Mt.1-80:

- Drilled at an angle of -70°, at a bearing of 245°, to a depth of 123.6 m (405').
- Intersected 1.0 m of 0.35% WO_3 in relatively coarse grained dark green skarn.
- Intersected 5.0 m of 0.04% WO_3 in layered tremolite-diopside-pyrrhotite skarn.

Assay Sample Number	Depth (m)	% MoS_2	% WO_3
738	17.7-18.7	0.005	0.35
742	35.0-38.0	0.005	0.04
743	38.0-40.0	0.005	0.04

DDH-S.Mt.2-80:

- Drilled at an angle of -70° to a depth of 68.7 m (225') at a bearing of 245°.
- Essentially barren of economic molybdenum mineralization.
- Intersected 2.0 m of 0.12% WO_3 in layered tremolite-garnet-diopside skarn.

Assay Sample Number	Depth (m)	% MoS_2	% WO_3
704	18.0-20.0	0.025	<0.01
711	50.0-52.0	0.007	0.12

DDH-S.Mt.3-80:

- Drilled at an angle of -45° at a bearing of 165° to a depth of 112.8 m (370').
- Major zone of mineralization, intersecting 4.1 m of 1.5% MoS_2 and 0.325% WO_3, hosted in medium to coarse grained diorite.

Assay Sample Number	Depth (m)	% MoS_2	% WO_3
923	7.0-9.0	0.190	0.082
926	12.4-16.5	1.50	0.325
927	16.5-18.0	0.142	0.240

DDH-S.Mt.4-80:

- Drilled vertically to a depth of 51.5 m (169').
- Three prominant mineralized horizons: 2.1 m of 0.233% WO_3 hosted in a sheared brecciated zone; 2.1 m of 0.114% MoS_2 and 0.536% WO_3 in medium to coarse grained diorite; and 1.3 m of 0.242% MoS_2 and 0.052% WO_3 hosted in medium grained,heavily fractured biotite-K feldspar granite.

Assay Sample Number	Depth (m)	% MoS_2	% WO_3
948	7.5-9.6	0.020	0.233
949	9.6-11.7	0.114	0.536
950	11.7-13.0	0.242	0.052

DDH-S.Mt.5-80:

- Drilled at an angle of -50°, at a bearing of 130°, to a depth of 81 m (266').
- Hole intersected four prominant mineralized horizons: 1.2 m of 1.2% MoS_2 and 0.488% WO_3 in medium to coarse grained diorite; 1.4 m of 0.133% MoS_2 and 0.599% WO_3 in diorite; 2.6 m of 1.15% MoS_2 and 1.292% WO_3 in diorite and 0.9 m of 0.950% MoS_2 in coarse grained unaltered granite.

Assay Sample Number	Depth (m)	% MoS_2	% WO_3
963	12.2-13.4	1.200	0.488
964	13.4-14.8	0.133	0.599
965	14.8-17.4	1.150	1.292
977	67.2-68.1	0.950	0.002

DDH-S.Mt.6-80:

- Drilled vertically to a depth of 63.6 m (209').
- Hole intersected a few secondary zones of mineralization: 2.1 m of 0.09% WO_3 and 4.0 m of 0.06% MoS_2 hosted in dark green, massive diopside skarn.

Assay Sample Number	Depth (m)	% MoS_2	% WO_3
587	0.9-3.0	0.013	0.09
590	10.0-14.0	0.060	0.01

DDH-S.Mt.7-80:

- Drilled vertically to a depth of 90.6 m (297').
- One significant zone intersected: 4.2 m of 0.10% MoS_2 hosted in layered weakly developed skarn.

Assay Sample Number	Depth (m)	% MoS_2	% WO_3
1000	16.8-21.0	0.10	0.01
1002	25.1-29.3	0.047	0.01

DDH-S.Mt.8-80:

- Drilled vertically to a depth of 102.6 m (337').
- Barren of significant economic mineralization.

DISCUSSION AND SIGNIFICANCE OF RESULTS

Geological mapping, prospecting and diamond drilling have indicated that molybdenite and tungsten mineralization at the Stormy Mountain Mineral Prospect are characteristic of a contact metasomatic skarn deposit. Mineralization is hosted in four distinct rock types, including: (a) highly greisen altered granite, typical of Zone A; (b) a "diorite" phase formed through assimilation of country rock carbonates and the intrusive; (c) a fine grained, diopside skarn formed through assimilation of limestone, known as exoskarn; and (d) thinly layered tremolite-quartz-diopside skarn, formed through the replacement of calcareous metasediments known as endoskarn. A sequence of events explaining the formation of the ore-bearing skarn rocks proceeds as follows:

(1) Intrusion of an intermediate to granitic magma occurs at 900-700°C.
(2) Contact metamorphism, dehydration and decarbonation of the country rocks occurs at 700-500°C, resulting in extensive fracturing of the country rock carapace rimming the intrusive. Crystallization of the intrusive proceeds to completion.
(3) Early anhydrous skarn formation occurs at 600-400°C, due either to the release of iron and silica-rich fluids from the magma or the arrival of fluids from a deeper source. In limestones, the dominant early skarn minerals are commonly garnet and diopside.
(4) Metalliferous ore deposition commences at 500-300°C as skarn formation continues. Scheelite and molybdenum generally appear to be earlier than associated sulfides.
(5) Late hydrothermal alteration occurs at 400-200°C or lower, with destruction of early anhydrous skarn minerals and continued ore deposition.

The discovery of the 10 new 1980 showings indicates that mineralization is not solely confined to the area of Zones A, B and C and that mineralization is found in similar type geological settings on other parts of the property. Additionally, the discovery of mineralization in surface finds and in diamond drill holes indicates that mineralization is definitely viable, not only close to the intrusive-metasediment contact but in horizons up to tens of metres stratigraphically above the contact. The Lee Show is a good example of this, whereby mineralized fluids emanating up from the intrusive have travelled substantial distances along structural pathways such as faults, fractures and planes of weakness, to reach their sites of mineral precipitation.

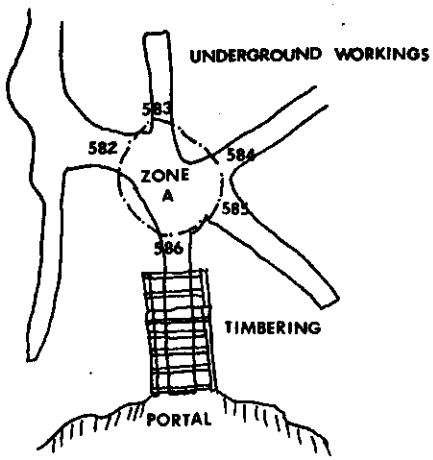
Geochemistry as utilized in 1980 appears to be an effective tool in identifying general areas of specific interest. It was relatively successful in assisting to locate 1980 diamond drill hole sites. Most of the trends exhibited by all elements appear to yield clear and distinct anomalies, with the possible exception of tin. Most of the prominent Mo anomalies appear to correspond with mineralized showings. The large anomaly located between the grid lines 6+00S to 0+00 corresponds to the dispersion train of the major ore zones A, B and C. The anomaly located between the grid lines 0+00 to 3+00N appears to be indicative of mineralization associated with the Cirque Show, located on the other side of the ridge. The prominent Mo anomaly located between the grid lines 9+75S to 14+25S is one of interest in that it lies within granitic terrain and, as such, does not correspond to any known mineralization. Follow-up work is warranted in such cases.

The distribution of tungsten in soils is similarly governed by known

mineralized showings. The largest anomaly, located between the lines 0+00 to 3+00N, corresponds with WO_3 mineralization encountered in diamond drill holes DDH-S.Mt.1-80 and DDH-S.Mt.2-80. The distribution of the elements Fe and Cu in soils exhibits much enrichment in soils which overlie sediment and metasedimentary terrains and which are depleted in overburden overlying granitic terrain. This can be explained in part by the relative absense of Fe in granites and the tendency of fine grained sediments to scavenge and collect Fe and Cu. Fe is retained in fine grained sediments because of its residual character caused by its high specific gravity. Cu has been known to substitute for Ca in carbonates and calcareous metasediments, due to their similarities in ionic radius.

The large Fe anomaly located between the grid lines 6+75S to 3+75N is probably a reflection of the abundance of skarn in that area. Conversely, the distribution of uranium in soils shows relative enrichment in granitic terrains and relative depletion in sediment-metasedimentary terrains. Of particular interest is the large anomaly located between lines 9+00S and 15+00S in that the large uranium anomaly is consistent with a prominent Mo anomaly, perhaps indicating a sub-surface structure hosting potential mineralization. The distribution of Sn in soils does not reveal any trends in view of its ubiquitous distribution throughout the intrusive and metasediments.

As of this writing, the six barrels of ore bulk sampled from mineralized Zone A have yet to be tested and analyzed; however, chip samples collected around the circumference of the pipe-shaped deposit revealed the following assays:



Sample Number	% MoS_2	% WO_3
582	3.800	1.180
583	0.350	0.009
584	0.195	0.003
585	2.200	0.005
586	4.600	0.003

Legend:

—.—.— Outline of deposit

584 etc. Sample locations

Assays obtained indicate an average grade of 2.2% MoS_2 and 0.28% WO_3 from within the deposit. Samples 583 and 584 are thought to be substantially low and are currently being re-analyzed.

The 1980 check-hole drilling appears to have quantitatively conformed earlier estimates as to size, quantity and grade of the ore zones B and C. Field's 1959 estimate, on the basis of diamond drilling, suggested that:

> *"One can arrive at an average weighted assay of 0.73% Mo (1.21% MoS_2), an average width or thickness of 8.2' and a relatively flat area covering 18,000 square feet. The above figures indicate an available tonnage of 14,760 tons assaying 1.21% MoS_2*

(Zone B) and one could speculate on the presence of 16,830 tons averaging 1.05% WO_3 and contained within a deposit with an average thickness of 7.0' (Zone C)."

The following outlines the results obtained from 1980 check drilling, with calculated available tonnages:

Zone B (assumed flat area covers 18,000 sq.ft. - W.E. Field, 1959)

1980 Check-Hole Diamond Drill Results:

Hole Number	Metres	Equivalent in Feet	% MoS_2
3	4.1	13.4	1.5
4	1.3	4.3	0.242
5	2.6	8.5	1.15

Taking the average of these three holes, we arrive at a grade of 0.964% MoS_2 over a thickness of 8.8'. Using the assumed area of 18,000 sq.ft. as representing the area concerned, we arrive at an available tonnage of 15,750 tons of 1.0% MoS_2.

Zone C (assumed flat area covers 18,620 sq.ft. - W.E. Field, 1959)

1980 Check-Hole Diamond Drill Results:

Hole Number	Metres	Equivalent in Feet	% MoS_2 WO_3 ?
3	4.1	13.5	0.325
4	2.1	6.9	0.536
5	2.6	8.5	1.292

Taking the average of these three holes, we arrive at a grade of 0.72% WO_3 over a thickness of 9.6'. Using the assumed area of 18,620 sq.ft. as representing the area concerned, we arrive at an available tonnage of 17,912 tons of 0.72% WO_3.

The results obtained from reconnaissance holes DDH-S.Mt.1-80 and DDH-S.Mt.2-80 are sufficient to explain the geochemical anomalies generated by tungsten in that locale (Figure 6). These particular holes were drilled over the most prominent tungsten anomaly on the 1980 grid and intersected mineralized horizons yielding one metre of 0.35% WO_3 and 2 m of 0.12% WO_3, respectively. However, the holes do not explain the presence of an Mo anomaly directly superimposed on the tungsten anomaly (Figure 5); DDH-S.Mt.1-80 and DDH-S.Mt.2-80 encountered minor MoS_2 but not sufficient enough to explain the geochemical anomaly. The writer suggests that the MoS_2 was stratigraphically higher in the section than was the WO_3 and has since eroded off, appearing as mineralized talus in the Cirque Show, which is located directly below the MoS_2 anomaly on the opposite side of the ridge. Unfortunately, drilling could not be conducted on the cirque side of the ridge due to the steepness of the slope and overall rugged topography.

DDH-S.Mt.6-80 was also drilled over a geochemical anomaly generated by tungsten and molybdenum. The drilling intersected 2.1 m of 0.1% WO_3 and 4.0 m of 0.06% MoS_2. Diamond drill holes DDH-S.Mt.7-80 and DDH-S.Mt.8-80 were located chiefly on the basis of surface finds and on Mo geochemical anomalies. Subsequent mineralization intersected included a horizon 4.2 m thick assaying 0.10% MoS_2.

SUMMATION AND RECOMMENDATIONS

The Stormy Mountain Mineral Prospect contains molybdenum and tungsten hosted in Upper Proterozoic and Lower Cambrian skarn zones, triggered by Cretaceous granites. The area of the claim has been mapped and prospected, outlining the intrusive-metasediment contact, general rock types, structural trends and new showings. It is therefore recommended that further geological mapping and prospecting be conducted on the prospect to refine the geological characteristics of the claims, complete the claim group and to discover new showings. 1980 mapping and prospecting resulted in the discovery of 10 new mineralized showings, hosted in skarn zones in similar type geological settings as previous finds.

It is recommended that a continued consolidation of data on size, shape and grade of these showings be undertaken through utilization of caterpillar stripping and diamond drilling.

Geochemistry generally proved to be an effective tool in locating general areas of interest. Clear and distinct anomalies were obtained for Mo and W, some of which were consistent with mineralized showings; however, some anomalies are at present unexplained. It is therefore recommended that:

(1) Follow-up geochemistry be undertaken in these anomalous areas.

(2) A grid of conventional lines and pickets be run across the intrusive-metasediment contact on the grass-covered southwesterly slope of Stormy Mountain, with subsequent soil sampling, in response to geochemical anomalies obtained from 1980 creek sampling.

Preliminary results indicate that geophysical methods undertaken at Stormy Mountain during 1980 were generally ineffective in defining areas of interest.

Diamond drilling conducted during the field season of 1980 intersected significant mineralization generally consistent with geochemical anomalies. It is therefore recommended that diamond drilling be conducted in the locales of the Bert, Don and Cirque Shows as prime targets, in view of the abundance of surface mineralization and distinct W, Mo anomalies in those areas.

In conclusion, the Stormy Mountain Mineral Prospect has sustained its potential as a viable producing ore deposit as evidenced by the confirmation obtained through 1980 drilling as to size, shape and grade of mineralized zones A, B and C and the encouraging results obtained through the discovery of 10 new showings outside the major mineralized zone, indicating the potential for additional economic reserves.

REFERENCES

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DICK, L.A., 1979: Tungsten and Base Metal Skarns in the Northern Cordillera: in Current Research, Part A, Geological Survey of Canada, Paper 79 1-A, pp. 259-266.

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HEARD, R.T., 1980: Summary Report on Stormy Mountain Mineral Prospect, Yukon Territory: report for Rio Alto Exploration Ltd., Calgary, Alberta, 19 pp.

HOY, D., 1980: Proposed 1980 Exploration for the Stormy Mountain Mo-W Prospect, Upper Sheep Creek Area, Yukon Territory: report for Rio Alto Exploration Ltd., Calgary, Alberta, 10 pp.

SCHMIDT, A.V., 1961: The Stormy Mountain Molybdenum Prospect of Canol Metal Mines Ltd., Yukon Territory: B.Sc. thesis, University of British Columbia, 49 pp.

WHITE, P.S., 1979: Report of 1979 Exploration Program of Stormy Mountain Mineral Prospect, Upper Sheep Creek Area, Quiet Lake Map Sheet 105-F: company report for Rio Alto Exploration Ltd., Calgary, Alberta, 9 pp.

WHITE, P.S., 1979: Report of Proposed Exploration Program of Stormy Mountain Mineral Prospect, Upper Sheep Creek Area, Quiet Lake Map Sheet 105-F: company report for Rio Alto Exploration Ltd., Calgary, Alberta.

RIO ALTO
EXPLORATION LTD.

Telephone 403 / 261-6661 • Suite 710, 610 8th Avenue S.W., Calgary, Alberta, Canada T2P 1G5

CERTIFICATE OF WRITER'S QUALIFICATIONS

I, Joseph Bankowski, certify that this report was prepared and written by Don Hoy, who graduated from the University of Western Ontario, London, Ontario, with a B.Sc. in geology in the year 1980 and who worked as a seasonal geologist for Rio Alto Exploration Ltd. from May, 1980 through November, 1980.

31 March 1981

Joseph H. Bankowski

Joseph Bankowski, Geologist
Rio Alto Exploration Ltd.

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LIST OF CLAIMS ON WHICH WORK DONE

CLAIM No's.	GRANT No.	WORK DONE (as per report)	RECORDED OWNER
PM 1-4	YA93766-9	Mine Rehabilitation	M. Sherman, Whitehorse, Y.T.
MP 1-96 MP 97-108	YA36053-148 YA56445-56	Diamond Drilling Geological Mapping Geophysical Mapping Geochemical Surveys Bulldozer Trenching	Rio Alto Exploration Ltd., Calgary, Alberta

31 March 1981

Joseph H. Bankowski

Joseph Bankowski, Geologist
Rio Alto Exploration Ltd.

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CERTIFIED STATEMENT OF COSTS

I, Joseph Bankowski, certify that the following is a true list of costs incurred in 1980 on the "Stormy Mountain Prospect" MP1-108 and PM 1-4, Sheep Creek Area, 105-F-7/10.

1.	Mobilization - Transportation	$ 20,000.00
2.	Camp Construction, maintenance and support	100,000.00
3.	Road Construction	100,000.00
4.	Mine Rehabilitation (including equipment rental)	80,000.00
5.	Diamond Drilling	117,500.00
6.	Wages	100,000.00
7.	Bulldozer Trenching (including rental)	65,000.00
8.	Geochemical Analysis	50,000.00
9.	Consultant's Fees	100,000.00
10.	Overhead - Contingencies	117,500.00
	TOTAL	$ 850,000.00

Joseph H. Bankowski

J. Bankowski, Geologist
Rio Alto Exploration Ltd.

RIO ALTO
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EMPLOYEES OF STORMY MOUNTAIN PROPERTY - 1980

The following list of employees worked at Stormy Mountain during 1980:

NAME	POSITION	ADDRESS	TERM EMPLOYED
TAYLOR, Bert	Consulting Engineer	Vancouver, B.C.	July 1980 - Sept. 1980
HOY, Don	Project Geologist	Toronto, Ontario	July 1980 - Sept. 1980
ROGERS, Glen	Assistant	Whitehorse, Yukon	July 1980 - Sept. 1980
POSCENTE, Lee	Assistant	Calgary, Alberta	July 1980 - Aug. 1980
HUGGARD, Eric	Assistant	Toronto, Ontario	July 1980 - Aug. 1980
SMITH, Steven	Assistant	Toronto, Ontario	July 1980 - Aug. 1980
Caron Diamond Drilling Ltd.	(4-man crew)	Whitehorse, Yukon	Aug. 1980 - Sept. 1980
LEBRAS, Robert	Miner	Whitehorse, Yukon	July 1980 - Sept. 1980
MARADA, Steven	Miner	Whitehorse, Yukon	July 1980 - Sept. 1980
POULIN, Richard	Miner	Whitehorse, Yukon	July 1980 - Sept. 1980
MBW Surveys Ltd.	(4-man crew)	Whitehorse, Yukon	July 1980 - Aug. 1980
LEMAY, Ghyslaine	Cook	Whitehorse, Yukon	Aug. 1980 - Sept. 1980
CARSON, William	Catskinner	Ross River, Yukon	July 1980 - Sept. 1980
CARSON, Lee	Cook	Ross River, Yukon	July 1980 - Sept. 1980
FLOOD, Clinton	Expediter	Calgary, Alberta	July 1980 - Aug. 1980

Joseph G. Bankowski

J. Bankowski, Geologist
Rio Alto Exploration Ltd.

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

ANALYTICAL REPORT

Project Stormy Mt. Date of report Oct.7/80.

File No. 0-905 Date samples received Sept.25/80.

Samples submitted by:

Company: Paul S. White & Assoc.

Report on: Geochem samples

66 Assay samples

Copies sent to:

1. Paul S. White, Whitehorse, Y.T.
2. G.A. Noel & Assoc., Vancouver B.C.
3. E & B Expl., Vancouver, B.C.

Samples: Sieved to mesh Ground to mesh -100

Prepared samples stored ☒ discarded ☐

rejects stored ☒ discarded ☐

Methods of analysis: Acid digestion-chemical analysis.

Remarks:

SPECIALISTS IN MINERAL ENVIRONMENTS

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Associates
2152-2nd Ave
Whitehorse, Y.T.

REPORT NO. [illegible]-156
DATE October 7, 198[illegible]

I hereby certify that the following are the results of analyses made by us upon the herein described rock samples

MARKED	% total $NaBH_3$	% MO_3								
321	0.013	0.02								
322	0.64	0.55								
323	1.93	0.02								
324	0.012	0.03								
325	0.040	L0.01								
326	0.023	0.35								
327	0.17	0.02								
328	L0.005	0.01								
329	L0.005	0.01								
330	1.42	0.29								
331	0.033	0.01								
332	0.23	0.29								
333	0.43	0.32								
334	0.83	0.04								
335	0.70	0.98								
336	L0.005	0.01								
337	0.035	0..01								
338	L0.005	0.01								
339	0.22	0.18								
340	0.44	0.04								

NOTE: L denotes less than

Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

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Steven Simpson

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PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Associates

REPORT NO. A-80-156

DATE October 7, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described rock samples

MARKED	% MoS_2	% WO_3								
341	L0.005	0.01								
342	0.095	0.01								
343	L0.005	L0.01								
344	0.093	0.09								
345	0.44	0.12								
346	0.83	0.15								
347	0.007	0.01								
348	L0.005	0.02								
349	1.20	0.29								
350	1.00	0.50								
351	0.28	0.02								
352	0.008	0.02								
353	L0.005	L0.01								
354	0.006	0.01								
355	0.19	0.02								
356	0.29	0.10								
357	0.048	0.03								
358	2.42	0.15								
359	8.10	0.15								
360	2.20	0.27								

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Steven Simpson

NOTE:
Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

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PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Associates

REPORT NO. A-40-156

DATE October 7, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described rock samples

MARKED	% MoS_2	% MoO_3								
361	L0.005	L0.01								
362	L0.005	0.01								
363	L0.005	0.01								
364	L0.005	0.01								
365	L0.005	0.01								
366	L0.005	0.01								
367	L0.005	L0.01								
368	L0.005	0.01								
369	L0.005	0.01								
370	L0.005	L0.01								
371	L0.005	0.01								
372	L0.005	0.01								
373	L0.005	0.02								
374	L0.005	0.03								
375	0.007	0.04								
376	0.032	0.02								
377	L0.005	L0.01								
378	0.007	0.02								
379	L0.005	0.02								
380	L0.005	0.02								

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NOTE:

Rejects retained two weeks
Pulps retained three months
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TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Associates

REPORT NO. A-40-156

DATE October 7, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described rock samples

MARKED	% MoS_2	% WO_3								
381	L0.005	0.01								
382	L0.005	0.02								
383	0.64	0.02								
384	0.55	0.02								
385	0.035	0.02								
386	0.023	0.03								
387	0.25	0.02								
388	L0.005	0.02								
389	1.60	1.64								
390	0.26	0.62								
391	0.83	0.29								
392	0.11	0.67								
393	1.94	0.23								
394	2.10	0.70								
395	3.35	0.39								
396	2.25	0.22								
397	7.90	0.47								
398	2.54	0.63								
399	1.70	0.20								
400	0.035	0.08								

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NOTE:
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Pulps retained three months
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TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Associates

REPORT NO. A-40-156

DATE October 7, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described rock samples

MARKED	% MoS_2	% WO_3								
401	0.045	0.05								
402	0.35	0.29								
403	0.023	0.10								
404	0.040	0.10								
405	0.55	0.03								
406	1.56	0.12								
407	0.037	0.19								
408	0.043	0.09								
409	L0.005	0.04								
410	0.37	0.01								
411	0.17	0.01								
412	0.093	0.03								
413	0.17	0.03								
414	0.038	0.02								
415	0.058	0.04								
416	0.037	0.26								
417	0.005	0.02								
418	L0.005	L0.01								
419	L0.005	0.01								
420	L0.005	0.01								

NOTE:
Rejects retained two weeks
Pulps retained three months
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TELEX: 036-8-460

Certificate of Analysis

TO ~~Paul White & Associates~~

REPORT NO. A-40-156

DATE October 7, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described rock samples

MARKED	% MoS_2	% WO_3								
421	L0.005	0.01								
422	L0.005	0.02								
423	L0.005	L0.01								
424	L0.005	0.01								
425	L0.005	L0.01								
426	L0.005	0.01								
427	L0.005	L0.01								
428	L0.005	0.01								
429	L0.005	0.01								
430	L0.005	0.01								
431	L0.005	0.01								
432	L0.005	0.01								
433	0.071	0.01								
434	0.17	0.05								
435	0.037	0.01								
436	0.050	0.01								
437	0.17	0.01								
438	0.18	0.03								
439	0.15	0.05								
440	0.027	0.02								

NOTE:
Rejects retained two weeks
Pulps retained three months
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Steven Simpson

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1368 INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Associates

REPORT NO. A-43-156

DATE October 7, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described ..... rock ..... samples

MARKED	% MoS_2	% WO_3								
441	0.010	0.08								
442	0.22	0.04								
443	0.007	0.01								
444	0.68	0.02								
445	1.26	0.02								
446	0.20	0.01								
447	0.55	0.02								
448	1.97	0.07								
449	0.96	0.01								
450	0.11	0.02								
451	0.067	0.49								
452	0.19	0.02								
453	0.62	0.08								
454	0.012	0.02								
455	L0.005	0.02								
456	L0.005	0.02								
457	L0.005	0.02								
458	L0.005	0.05								
460	0.058	0.02								
901	L0.005	0.02								

NOTE:
Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

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Steven Scargall

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136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Assoc.
Whitehorse, Y.T.

REPORT NO. A-40-197

DATE October 16, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described ... Drill core ..... samples

MARKED	% MoS_2	% WO_3								
587	0.013	0.09								
588	L0.005	0.01								
589	L0.005	0.01								
590	0.060	L0.01								
591	0.005	0.01								
592	L0.005	0.01								
593	L0.005	0.02								
594	L0.005	0.02								
595	L0.005	0.01								
596	L0.005	0.02								
597	0.007	0.04								
598	L0.005	L0.01								
599	L0.005	L0.01								
600	L0.005	L0.01								

NOTE: L denotes less than

Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

BONDAR-CLEGG & COMPANY LTD.

.....

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Assoc.
Whitehorse, Y.T.

REPORT NO. A-40-197

DATE October 16, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described ... Drill core ..... samples

MARKED	% MoS_2	% WO_3								
587	0.013	0.09								
588	L0.005	0.01								
589	L0.005	0.01								
590	0.060	L0.01								
591	0.005	0.01								
592	L0.005	0.01								
593	L0.005	0.02								
594	L0.005	0.02								
595	L0.005	0.01								
596	L0.005	0.02								
597	0.007	0.04								
598	L0.005	L0.01								
599	L0.005	L0.01								
600	L0.005	L0.01								

NOTE: L denotes less than

Rejects retained two weeks
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BONDAR-CLEGG & COMPANY LTD.

.....

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Assoc.

REPORT NO. A-40-197

DATE October 16, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described drill core samples

MARKED	% MoS_2	% WO_3								
701A	L0.005	L0.01								
702	L0.005	L0.01								
703	L0.005	L0.01								
704	0.025	L0.01								
705	L0.005	0.04								
706	0.009	0.02								
707	0.008	0.02								
708	L0.005	L0.01								
709	L0.005	L0.01								
710	L0.005	L0.01								
711	0.007	0.12								
712	L0.005	0.01								
713	0.007	L0.01								
714	L0.005	L0.01								

BONDAR-CLEGG & COMPANY LTD.

NOTE:

Rejects retained two weeks
Pulps retained three months
unless otherwise arranged

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Assoc.

REPORT NO. A-40-197

DATE October 16, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described drill core samples

MARKED	% MoS_2	% WO_3								
715	L0.005	L0.01								
716	L0.005	L0.01								
717	L0.005	0.01								
718	L0.005	L0.01								
719	L0.005	L0.01								
720	L0.005	L0.01								
721	L0.005	L0.01								
722	0.005	L0.01								
723	L0.005	0.01								
724	L0.005	0.01								
725	L0.005	0.01								
726	L0.005	L0.01								
727	L0.005	L0.01								
728	L0.005	L0.01								

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NOTE:

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Pulps retained three months
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BONDAR-CLEGG & COMPANY LTD.

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MARKED	% MoS_2	% WO_3								
729	L0.005	0.01								
730	L0.005	L0.01								
731	L0.005	L0.01								
732	L0.005	L0.01								
733	L0.005	L0.01								
734	L0.005	L0.01								
735	L0.005	0.01								
736	L0.005	L0.01								
737	L0.005	0.04								
738	0.005	0.35								
739	L0.005	0.01								
740	L0.005	0.01								
741	L0.005	0.02								
742	L0,005	0.04								

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BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Assoc.

REPORT NO. A-40-197

DATE October 18, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described drill core samples

MARKED	% MoS_2	% WO_3								
743	0.005	0.04								
744	L0.005	0.02								
745	0.005	0.03								
746	L0.005	0.03								
747	L0.005	0.03								
748	0.005	0.03								
749	L0.005	0.02								
750	L0.005	0.01								
751	L0.005	0.01								
752	L0.005	0.01								
753	L0.005	0.01								
754	L0.005	0.01								
755	L0.005	0.01								
756	L0.005	L0.01								

BONDAR-CLEGG & COMPANY LTD.

NOTE:
Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

.....

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
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MARKED	% MoS_2	% WO_3								
757	L0.005	0.01								
916	L0.005	L0.01								
917	L0.005	0.01								
918	L0.005	0.02								
919	L0.005	0.01								
920	L0.005	0.01								
981	0.065	0.53								
982	0.012	0.06								
983	0.018	0.23								
984	L0.005	0.02								
985	0.064	0.44								
986	L0.005	0.02								
987	0.030	0.02								
988	0.008	0.02								

BONDAR-CLEGG & COMPANY LTD.

NOTE:
Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Paul White & Assoc.

REPORT NO. A-40-197

DATE October 16, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described .... drill core .... samples

MARKED	% MoS_2	% WO_3								
989	0.008	0.04								
1000	0.10	0.01								
1001	L0.005	0.01								
1002	0.047	0.01								
1003	L0.005	0.01								
1004	L0.005	0.01								
1005	L0.005	0.01								
1006	L0.005	0.01								
1007	L0.005	0.01								
1008	L0.005	0.01								
1009	L0.005	0.01								
1010	L0.005	0.01								
1011	L0.005	0.01								
1012	L0.005	0.01								

BONDAR-CLEGG & COMPANY LTD.

NOTE:
Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

.....

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
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Certificate of Analysis

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REPORT NO. A-40-197

DATE October 16, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described drill core samples

MARKED	% MoS_2	% WO_3								
1013	L0.005	0.01								
1014	L0.005	0.01								
1015	L0.005	0.01								

BONDAR-CLEGG & COMPANY LTD.

NOTE: L denotes less than

Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

.....

MIN-EN LABORATORIES LTD.
706 WEST 15TH STREET
NORTH VANCOUVER, B.C.
Phone: 980-5814

Certificate of Assay

TO: Paul S. White & Assoc.,
2151-2nd Ave.,
Whitehorse, Y.T.

PROJECT No. Stormy Mt.
DATE Oct.7/80.
File No. 0-905

SAMPLE No.	MoS_2 %	WO_3 %		
582	3.800	1.180		
583	.350	.009		
584	.195	.003		
585	2.200	.005		
586	4.600	.003		
921	.026	.011		
922	.015	.050		
923	.190	.082		
924	.023	.032		
925	.017	.057		
926	1.500	.325		
927	.142	.240		
928	.018	.002		
929	.010	.001		
930	.010	.001		
931	.006	.001		
932	.005	.003		
933	.009	.002		
934	.006	.006		
935	.010	.001		
936	.040	.001		
937	.004	.002		

MIN-EN Laboratories Ltd.

CERTIFIED BY .....

MIN-EN LABORATORIES LTD.
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
Phone: 980-5814

Certificate of Assay

TO: Paul S. White & Assoc.,
2151-2nd Ave.,
Whitehorse, Y.T.

PROJECT No. Stormy Mt.
DATE Oct. 7/80.
File No. 0-905

SAMPLE No.	MoS_2 %	WO_3 %		
938	.009	.001		
939	.013	.001		
940	.010	.001		
941	.006	.002		
942	.003	.003		
943	.003	.001		
944	.002	.002		
945	.004	.001		

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705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
Phone: 980-5814

Certificate of Assay

TO: Paul S. White & Assoc.,
2151-2nd Ave.,
Whitehorse, Y.T.

PROJECT No. Stormy Mt.
DATE Oct.7/80.
File No. 0-905

SAMPLE No.	MoS_2 %	WO_3 %		
946	.004	.003		
947	.010	.021		
948	.020	.233		
949	.114	.536		
950	.242	.052		
951	.042	.004		
952	.007	.011		
953	.004	.003		
954	.003	.001		
955	.003	.001		
956	.004	.001		
957	.003	.001		
958	.005	.001		
959	.012	.090		
960	.008	.067		
961	.012	.012		
962	.064	.008		
963	1.200	.488		
964	.133	.599		
965	1.150	1.292		
966	.018	.010		
967	.018	.002		

MIN-EN Laboratories Ltd.

CERTIFIED BY .....

MIN-EN LABORATORIES LTD.
705 WEST 15TH STREET
NORTH VANCOUVER, B.C.
Phone: 980-5814

Certificate of Assay

TO: Paul S. White & Assoc.,
2151-2nd Ave.,
Whitehorse, Y.T.

PROJECT No. Stormy Mt.
DATE Oct.7/80.
File No. 0-905

SAMPLE No.	MoS_2 %	WO_3 %		
968	.004	.001		
969	.008	.001		
970	.011	.002		
971	.017	.001		
972	.010	.002		
973	.006	.001		
974	.005	.001		
975	.014	.001		
976	.007	.001		
977	.950	.002		
978	.014	.001		
979	.005	.002		
980	.006	.001		
581	.021	.371		

MIN-EN Laboratories Ltd.

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APPENDIX "C"

DIAMOND DRILL HOLE LOCATIONS, 1980

DDH-S.Mt.1-80	1+15N, 0+28W
DDH-S.Mt.2-80	0+67N, 0+13W
DDH-S.Mt.3-80	4+82S, 0+69W
DDH-S.Mt.4-80	4+80S, 0+70W
DDH-S.Mt.5-80	4+81S, 0+68W
DDH-S.Mt.6-80	1+55S, 0+5W
DDH-S.Mt.7-80	1+15S, 3+10E
DDH-S.Mt.8-80	1+10S, 3+45E

(1980 Stormy Mountain Grid System)

LEGEND

CRETACEOUS

Ka — Resistant light grey to white weathering aplite, dike-like in occurrence, distinctive sugary texture.

Kpg — Moderately resistant, light grey to pink weathering, quartz - K feldspar - biotite granite; commonly porphyritic.

Kd — Moderately resistant, grey to dark green weathering diorite.

UPPER CAMBRIAN

uCms — Recessive metasediments, include grey weathering lustrous chlorite - muscovite schist, & calcareous schist.

LOWER CAMBRIAN

lCms — Metasediments, include grey thin bedded foliated phyllite, locally includes biotite schist, biotite hornfels, calcareous schist & black laminated argillite.

lCls — Resistant, white to grey weathering recrystallized limestone.

lCsk — Massive, fine to medium grained, dark green, diopside-garnet skarn, metamorphic equivalent of lCls.

lCLsk — Layered, light green to red, diopside-quartz-garnet-tremolite skarn, metamorphic equivalent of lCms.

UPPER PROTEROZOIC

uPms — Metasediments include black-grey weathering calcareous schist, & silky slate, also includes white quartzite

uPsk — Massive & layered, diopside-garnet skarn, metamorphic equivalent of uPms.

- Outcrop
- Frost Arrow, Talus pile
- Bedding Attitude
- Foliation, Schistosity
- Mineral Occurrence
- Fault
- Intrusive - Metamorphic Contact
- Caterpillar Treads
- Mineralized Showing
- Claim Outline
- Marshy, Springy Area
- Contours
- Geologic Contact
- 1980 Grid
- Measured Contact

po pyrrhotite
cpy chalcopyrite
py Pyrite
cc calcite
Ma malachite
Az Azurite

Contour interval 100 feet

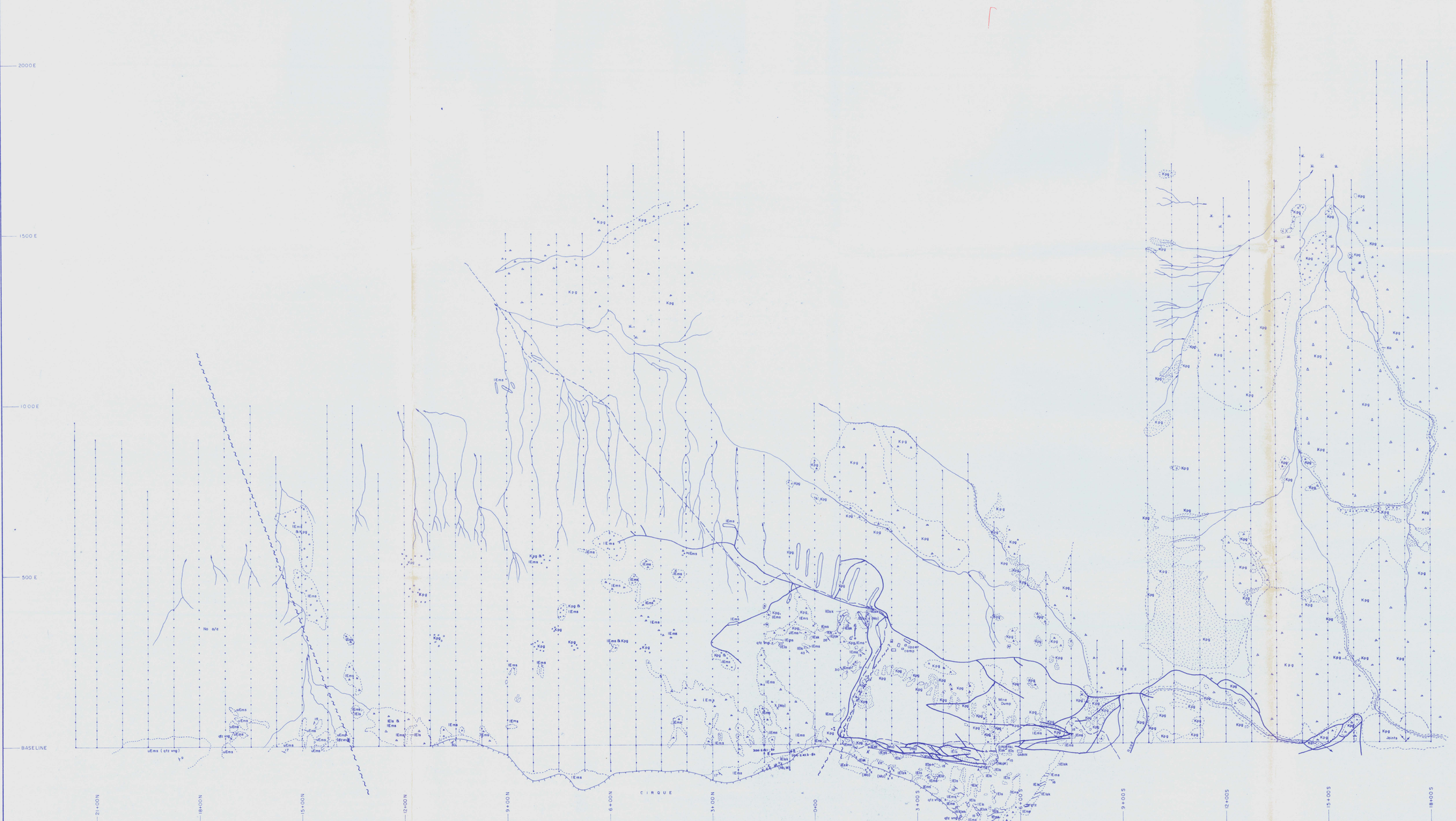
RIO ALTO EXPLORATION LTD.

GEOLOGY

STORMY MOUNTAIN PROJECT
MINERAL CLAIMS PM 1-4, 1-96 MP
WATSON LAKE MINING DISTRICT, YUKON TERRITORY
NTS 105F7 & 105F10

0 400 800 metres

SCALE 1" = 1,000'	OCT. 1980	FIG. 3
DRAWN BY D. Hoy		



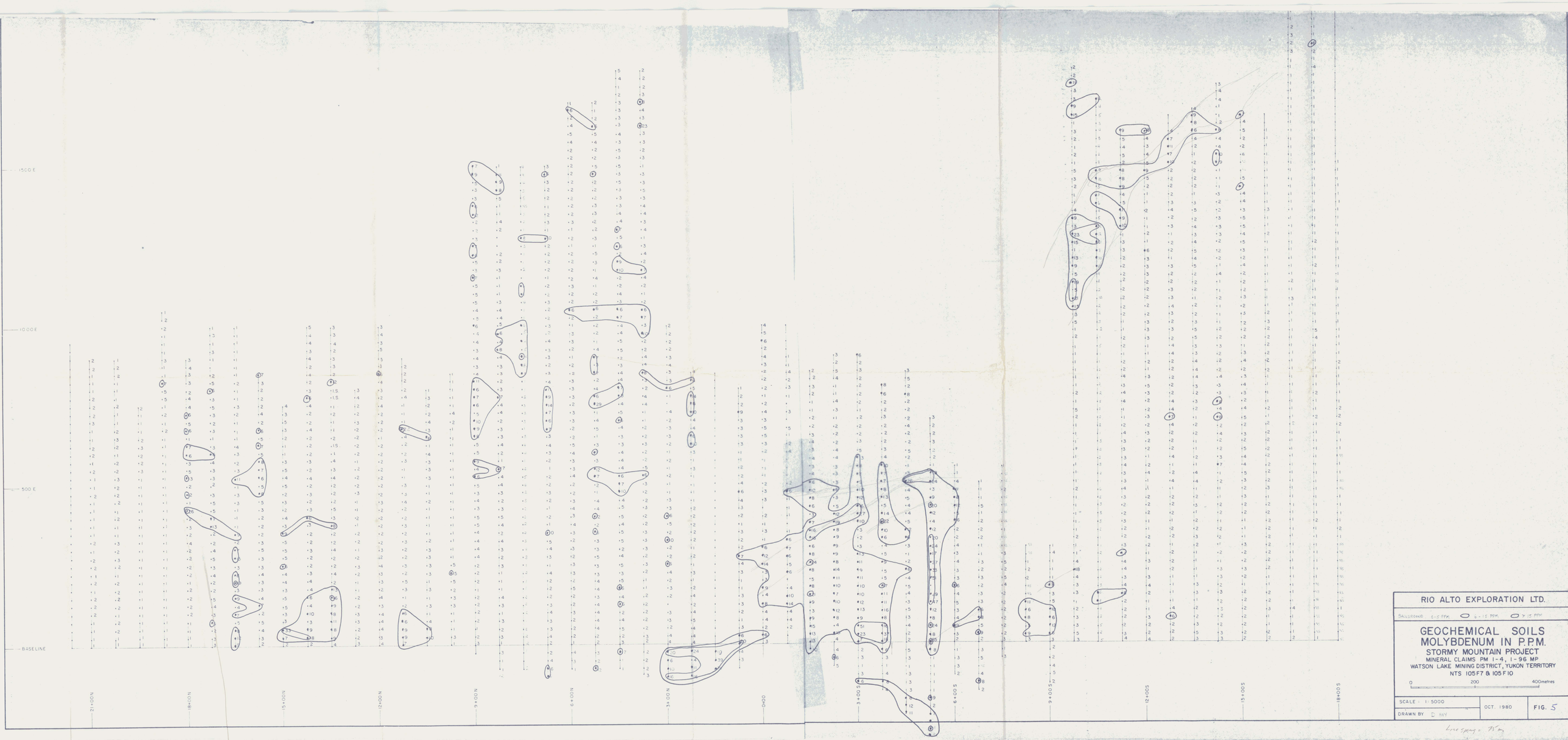
RIO ALTO EXPLORATION LTD.

DETAIL GEOLOGY

STORMY MOUNTAIN PROJECT
MINERAL CLAIMS PM 1-4, 1-108 MP
WATSON LAKE MINING DISTRICT, YUKON TERRITORY
NTS 105F7 & 105F10

0 200 400metres

SCALE : 1:5000	OCT. 1980	FIG. 4
DRAWN BY D. Hoy		



RIO ALTO EXPLORATION LTD.

BACKGROUND 0-5 PPM 5-15 PPM > 15 PPM

GEOCHEMICAL SOILS MOLYBDENUM IN P.P.M.

STORMY MOUNTAIN PROJECT

MINERAL CLAIMS PM 1-4, 1-96 MP

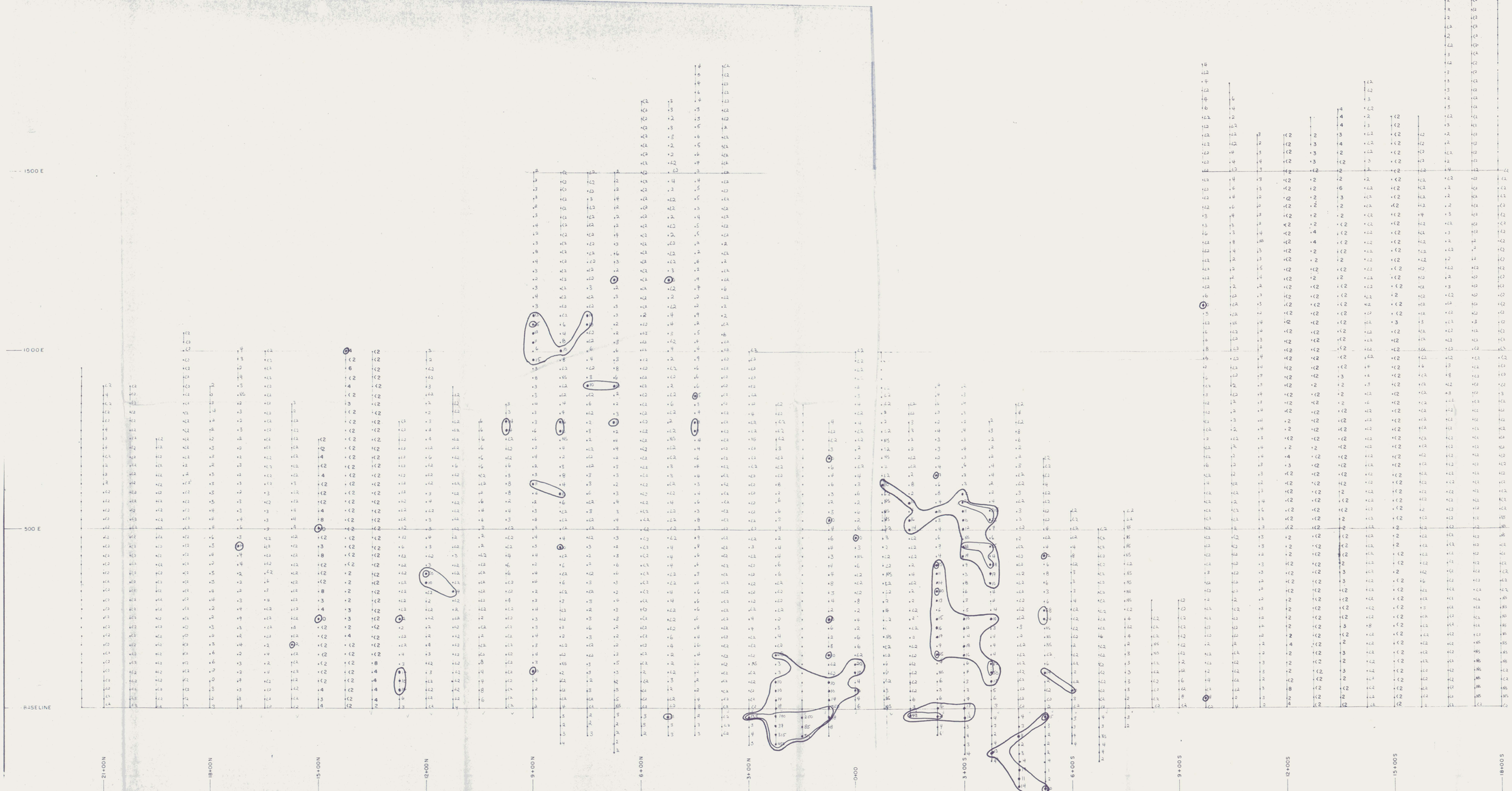
WATSON LAKE MINING DISTRICT, YUKON TERRITORY

NTS 105F7 & 105F10

0 200 400metres

SCALE : 1:5000	OCT. 1980	FIG. 5
DRAWN BY D. REY		

Line Spacing = 75m



RIO ALTO EXPLORATION LTD.

Background: 0-10ppm ○ 10-20ppm ○ >20ppm

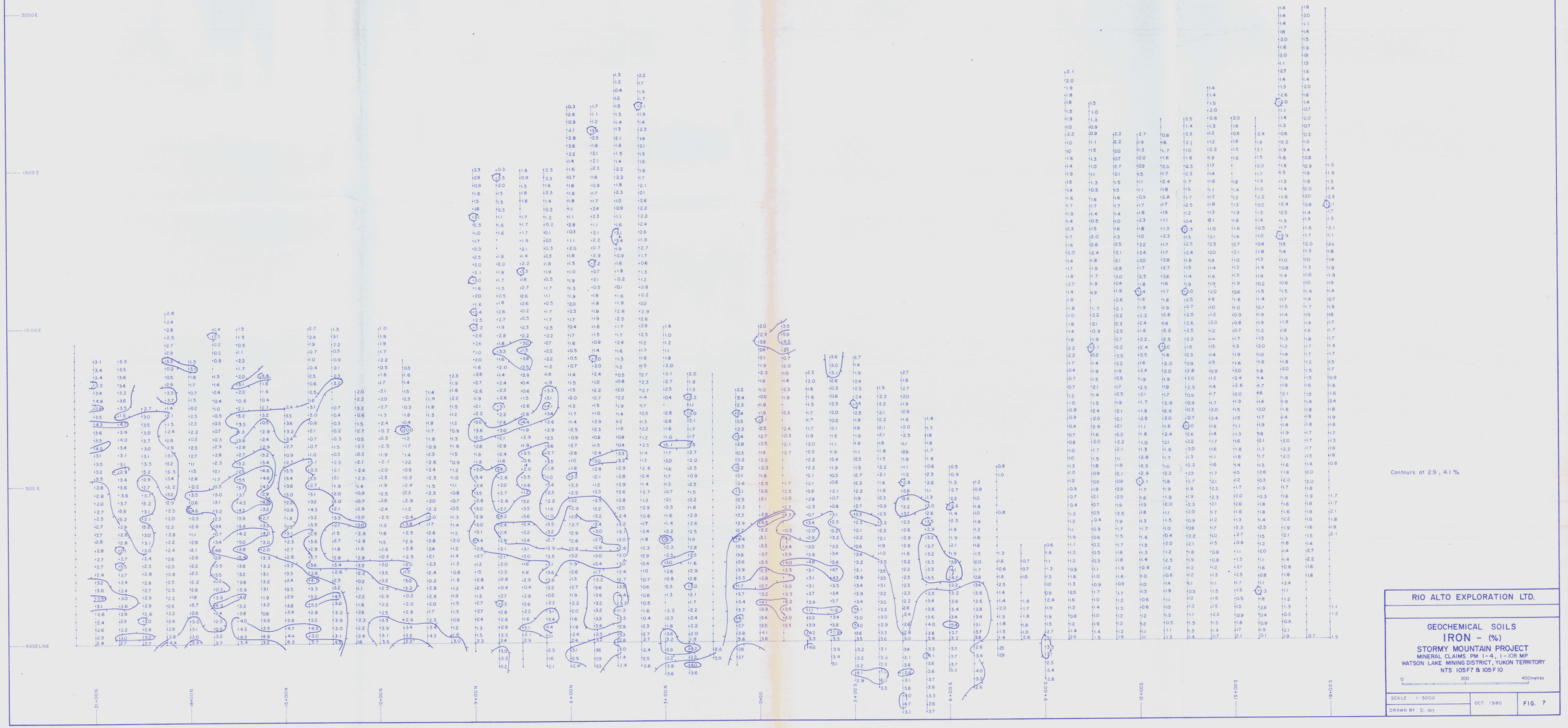
GEOCHEMICAL SOILS TUNGSTEN IN P.P.M.

STORMY MOUNTAIN PROJECT
MINERAL CLAIMS PM 1-4, 1-96 MP
WATSON LAKE MINING DISTRICT, YUKON TERRITORY
NTS 105F7 & 105F10

0 200 400metres

SCALE 1:5000 | OCT. 1980 | FIG. 6

DRAWN BY D. Hay



Contours at 2.9 , 4.1 %

RIO ALTO EXPLORATION LTD.

GEOCHEMICAL SOILS

IRON - (%)

STORMY MOUNTAIN PROJECT

MINERAL CLAIMS PM 1-4, 1-108 MP

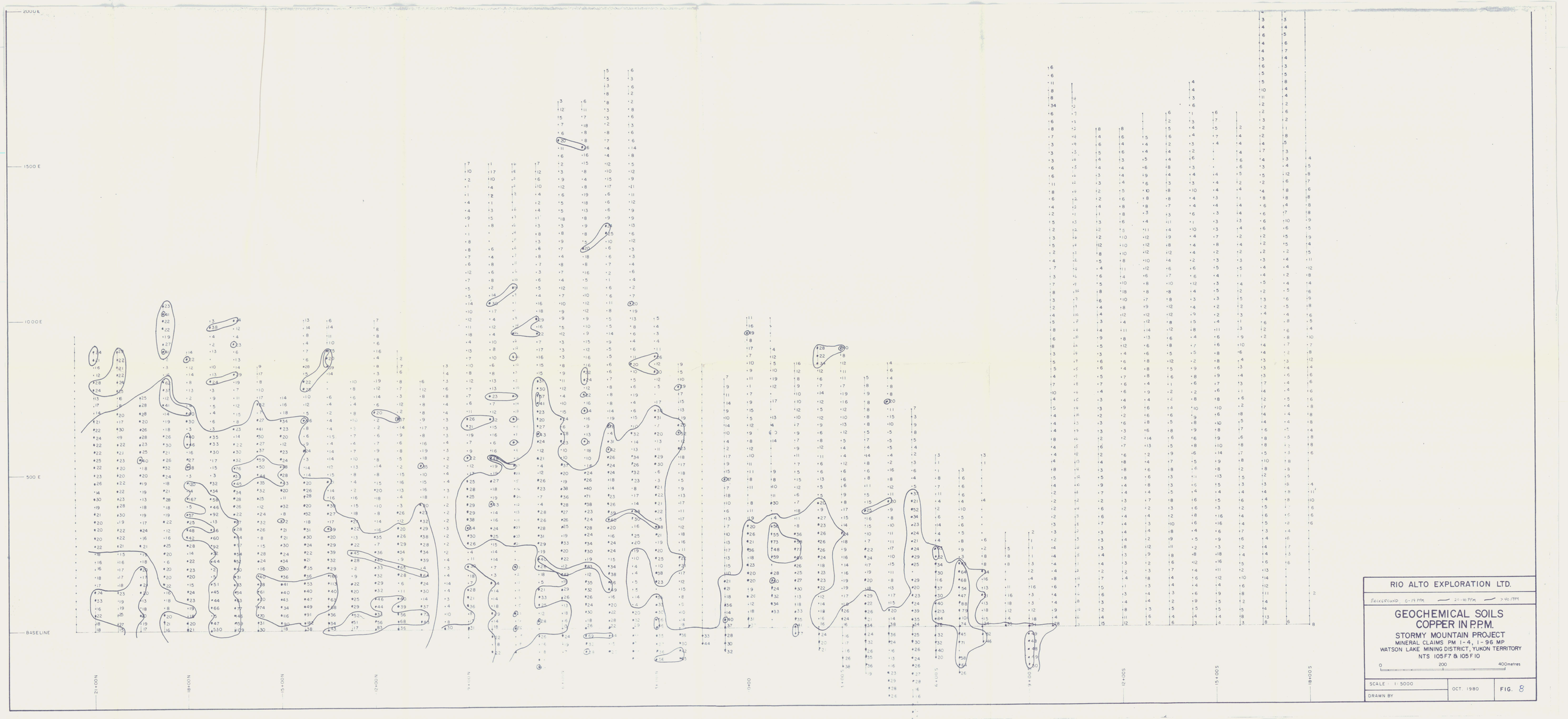
WATSON LAKE MINING DISTRICT, YUKON TERRITORY

NTS 105F7 & 105F10

0 200 400metres

SCALE 1:5000 | OCT. 1980 | FIG. 7

DRAWN BY D. Hoy



RIO ALTO EXPLORATION LTD.

BACKGROUND 0-19 PPM — 20-46 PPM — 47+ PPM

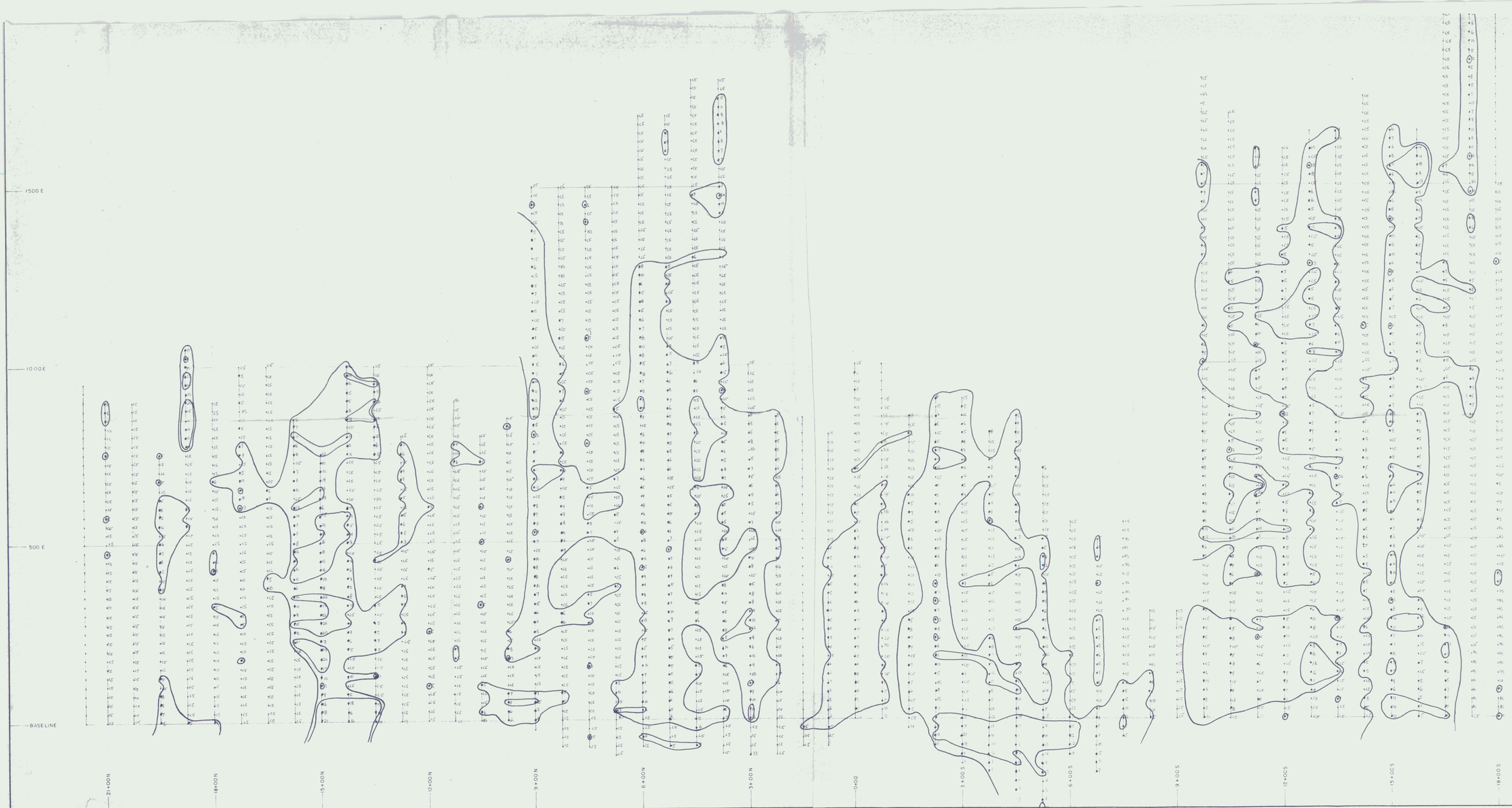
GEOCHEMICAL SOILS COPPER IN P.P.M.

STORMY MOUNTAIN PROJECT

MINERAL CLAIMS PM 1-4, 1-96 MP
WATSON LAKE MINING DISTRICT, YUKON TERRITORY
NTS 105F7 & 105F10

0 200 400metres

SCALE 1:5000	OCT. 1980	FIG. 8
DRAWN BY		



RIO ALTO EXPLORATION LTD.

BACKGROUND 4.5 PPM — 5-10 PPM — 11 PPM

GEOCHEMICAL SOILS
TIN IN PPM
STORMY MOUNTAIN PROJECT
MINERAL CLAIMS PM 1-4, 1-96 MP
WATSON LAKE MINING DISTRICT, YUKON TERRITORY
NTS 105F7 & 105F10

0 200 400metres

SCALE 1:5000 | OCT 1980 | FIG. 9

DRAWN BY D.Hay

RIO ALTO EXPLORATION LTD.

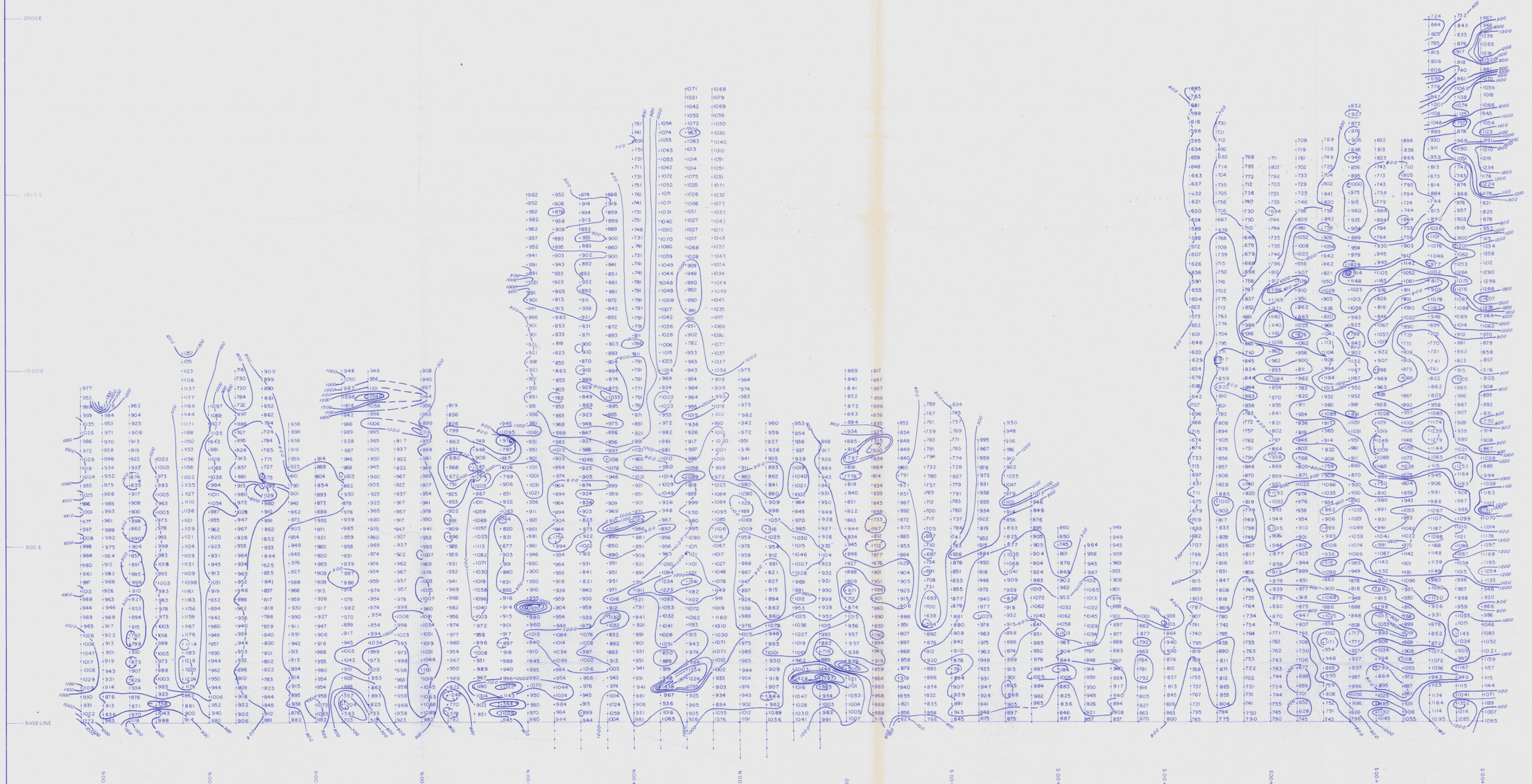
Background < 5ppm 5-15 PPM > 15 PPM

GEOCHEMICAL SOILS
URANIUM - (PPM)
STORMY MOUNTAIN PROJECT

MINERAL CLAIMS PM 1-4, 1-96 MP
WATSON LAKE MINING DISTRICT, YUKON TERRITORY
NTS 105F7 & 105F10

0 200 400metres

SCALE 1:5000	OCT. 1980	FIG. 10
DRAWN BY		



Contours at 100 gamma interval

Datum arbitrary

RIO ALTO EXPLORATION LTD.

MAGNETOMETER SURVEY

STORMY MOUNTAIN PROJECT

MINERAL CLAIMS PM 1-4, 1-108 MP

WATSON LAKE MINING DISTRICT, YUKON TERRITORY

NTS 105 F7 & 105 F10

0 200 400metres

SCALE: 1:5000 | OCT. 1980 | FIG. 12

DRAWN BY