

REPORT TO
REA PETRO CORPORATION
ON ASSESSMENT WORK ON
THE MOLLY & ADD GROUP
OF MINERAL CLAIMS
NEAR ASHCROFT, B.C.
KAMLOOPS MINING DIVISION

BY
SHERWIN F. KELLY, P.ENG.

AUG. 5, 1982

Report on
Assessment Work
by Magnetometer
and Geochemical
Surveys

of the
Molly & Add Group
of Mineral Claims
SW of Ashcroft,
Kamloops Mining Division, B.C.
121° 22' W, 50° 39' N

by
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Geophysicist & Geologist
Aug. 5, 1982

to
Rea Petro Corporation
Vancouver, B.C.
Owner of the Claims
and the Operator

on Work Done
Aug. 1 to Dec. 31, 1981

by
Pacific Northwest Geotech Ltd.
Kamloops, B.C.

MINERAL RESOURCES BRANCH ASSESSMENT REPORT 10513 NO. _____
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REPORT TO
REA PETRO CORPORATION
ON ADD & MOLY CLAIMS
ASSESSMENT WORK

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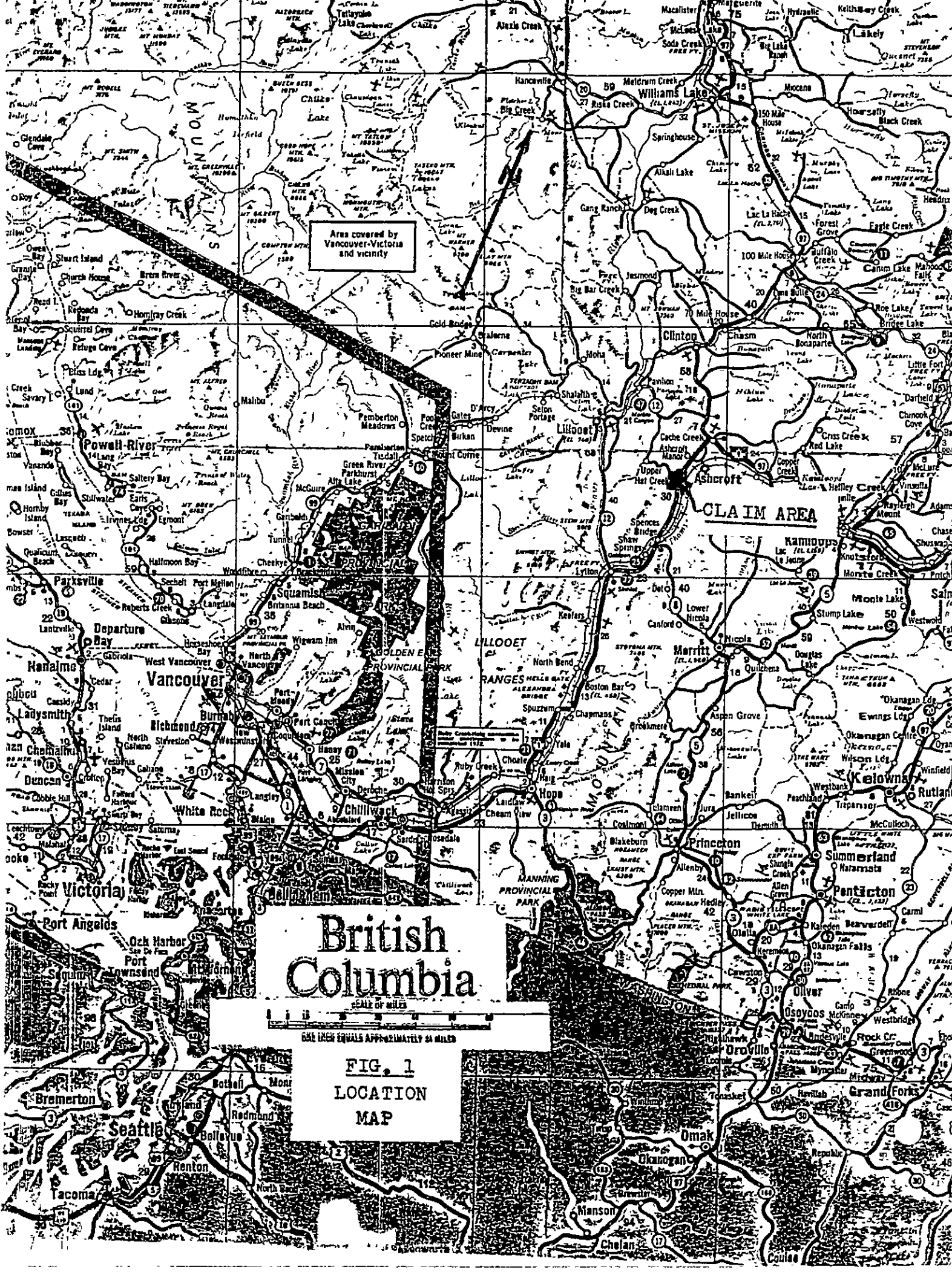
REPORT TO
REA PETRO CORPORATION
ON ASSESSMENT WORK
PERFORMED ON THE
ADD & MOLY CLAIMS
NEAR ASHCROFT, B.C.
BY
SHERWIN F. KELLY, P.ENG.

INTRODUCTION

This report is to record the assessment work conducted on the group of ADD and Moly claims lying immediately west of Red Hill, straddling the TransCanada Highway and lying about 10km SW of Ashcroft, in the Kamloops Mining Division, B.C. The work consisted of geochemical soil and magnetic surveys carried out during the field season of 1981, by Pacific Northwest Geotech Ltd. for Rea Petro Corp. the owner of the claims.

LOCATION AND ACCESS

The ADD and Moly claims lie in the southern part of the NW $\frac{1}{4}$ of sheet 92-I/II of the National Topographic System, the Ashcroft sheet at the scale of 1:50,000. The co-ordinates are, roughly, 57° 39' N latitude and 121° 22' W longitude. The area is one of rolling topography with much grass and sagebrush, forming the upland portion of the valley of the Thompson River; the river lies a couple of kilometres east of the claims. Elevations in the claim area are mostly in the range of 1,500 to 2,500 ft. The southern tip of the rugged Cornwall Hills lies about a kilometre west of the western portion of the claims.



Area covered by Vancouver-Victoria and vicinity

CLAIM AREA

British Columbia

SCALE OF MILES
648 INCH EQUALS APPROXIMATELY 51 MILES

FIG. 1
LOCATION
MAP

The claims are of easy access from the TransCanada Highway. About 8 km south of the right-angled turn-off to Ashcroft, a dirt road turns off to the west, where the TransCanada crosses Minaberriet Creek. This is the Upper Hat Creek Road, which also leads to the Cornwall Lookout. It winds south and west through the claim area, to Oregon Jack Creek where it turns westerly to run up the Creek, out of the group of claims. Various logging roads and old exploration roads give access to various parts of the claim holdings. Fig. 1, the Location Map, faces this page.

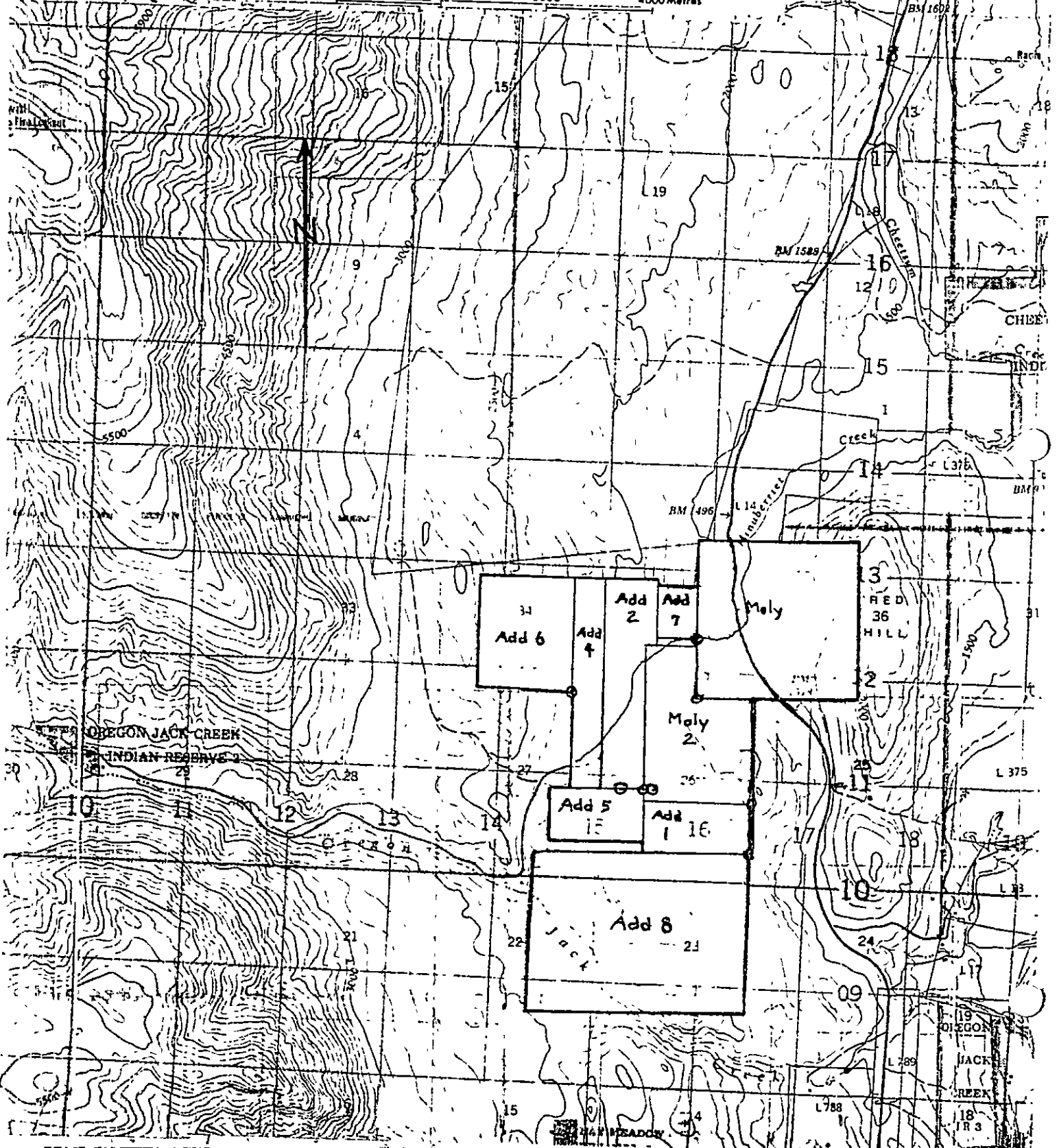
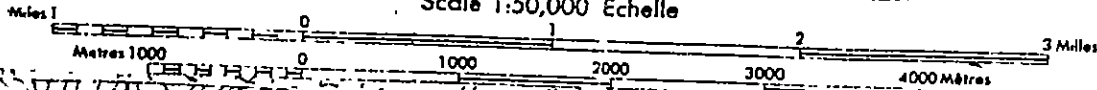
CLAIMS

The claim groups composing these holdings consist of the Moly claim, the Moly 2 claim, the ADD 1 to 8 claims and the ADD Fraction. The Moly claim straddles the TransCanada Highway and extends part way up the west slope of Red Hill, on the east side of that Highway. All the rest of the claims lie west of the Highway.

The NE corner post for the ADD 3 claim (a one unit claim) stands some 15m north of the access road close to a cattle guard, about half a kilometre from the turn-off at the highway. Some 600m further south, along the road, the legal corner posts for ADD 3 and Moly claims stand about 30m SE of the road.

Particulars regarding the claims are as follows:

FIG. 2
ASHCROFT MOLY & ADD
INDEX MAP KAMLOOPS DIVISION OF YALE LAND DISTRICT CLAIMS
BRITISH COLUMBIA
 WEST OF SIXTH MERIDIAN - OUEST DU SIXIÈME MÉRIDIEN
 Scale 1:50,000 Échelle



<u>CLAIM</u>	<u>NO. OF UNITS</u>	<u>VALIDITY DATE</u>	<u>RECORD NO.</u>
Moly	9 (3x3)	March 6/83	1730 (3)
Moly 2	6 (2x3N-S)	May 22/82	1858 (5)
ADD 1	2 (E-W)	Dec. 20/82	2323 (12)
ADD 2	4 (1x4N-S)	Dec. 20/82	2324 (12)
ADD 3	1	Dec. 20/82	2325 (12)
ADD Fr	1	July 18/81	2828 (7)
ADD IV	4 (1x4N-S)	Aug. 8/82	2893 (8)
ADD V	2 (E-W)	Aug. 8/82	2894 (8)
ADD VI	4 (2x2)	Aug. 21/82	2895 (8)
ADD 7	5	July 29/82	3732 (7)
ADD 8	12	Aug. 24/82	3769 (8)

All of the above claims, with a total of 50 units, were grouped as the Molly & Add Group on Sept. 22, 1981 by a Supplementary Notice to Group filed in the Sub-Recorder's office in Vancouver, with the number 1867. Fig. 2, the Index Map, faces this page.

GEOLOGICAL SETTING

The Molly & Add Group of claims, belonging to Rea Petro Corp., lies between the Thompson River on the east and the Cornwall Hills on the west, in a band eight miles or so wide, of the Cache Creek formation of Permian age. This assemblage of volcano-sedimentary beds, possibly 20,000 ft. thick, consists of cherts, argillites, limestones, quartzites, andesite greenstones, consisting of flows, tuffs and agglomerates, plus their metamorphic derivatives. The andesitic

greenstones have their greatest exposures in the area between the Cornwall Hills and the Thompson River, where the claim group is located.

The greenstones forming the bedrock in the claim area have been metamorphosed into predominantly quartz-sericite schists, with a schistosity striking northwesterly and dipping southwesterly. These schists are cut by calcite-quartz veining often carrying pyrite and chalcopyrite. They have also been intruded by stocks of diorite to quartz diorite, presumably off-shoots from the great Guichon batholith to the southeast, as well as by dikes of similar composition.

The Guichon batholith, site of the copper-molybdenum mining in the Highland Valley, consists of a series of intrusions by magmas varying in composition principally between diorite, granodiorite and quartz diorite. Some of these variations served as source rocks or host rocks for the copper-molybdenum mineralisation now being mined in the Highland Valley. The NW end of the Guichon batholith outcrops on the east side of the Thompson River, about four miles (6.5km) east of the claim area.

Within a distance of ten miles or so from the outcropping edge of the batholith, there are numerous dioritic plugs into the Cache Creek rocks and, adjacent to the edge of the Guichon intrusive, into the Nicola formation of Triassic age. These plugs or stocks vary in size from about $\frac{1}{4}$ mile to 2 miles in diameter. The intrusion of these stocks generally caused

intense pyritization and silicification of the greenstone schists, along with the development of calcite, epidote and chlorite. These alterations were also accompanied, in places, by the formation of metasomatic deposits of copper and molybdenum in the invaded rocks and occasionally in the margins of the intrusives.

Surface indications as well as geophysical (magnetic and electrical) results and some geochemical data, demonstrate the presence of important fault systems cutting through this area. There appear to be two principal trends, northerly and north-westerly. Some of the faulting, at least, was post-intrusive as at one locality in the Cornwall Hills, a fault cuts through a diorite plug. The fault carries copper, nickel and some cobalt.

The mineral assemblage in the fault is of a slightly higher temperature of formation than the contact-metasomatic copper-molybdenum assemblages in and near the intrusive stocks. The hydrothermal vein deposit in the fault may therefore be assumed to have resulted from the fault structure tapping a still molten magmatic source, possibly a deeper and hotter portion of the magma that gave rise to the already cooled intrusive stock.

From the above, it is evident that there are at least two, different types of mineral deposition on these claims. They may occur separately or they may overlap. One is the contact-metasomatic copper-molybdenum type, associated with intrusive stocks. The other is the hydrothermal vein type of

copper, nickel and cobalt mineralisation, associated with faults and shear zones. Where a mineralised fault cuts an intrusive stock, mineral deposition of the hydrothermal vein type can occur in the intrusive stock.

BIBLIOGRAPHY OF REFERENCES

The fundamental geological data on this area are to be found in the "Ashcroft Map Area, British Columbia", by S. Duffell and K.C. McTaggart; Memoir 262, Geological Survey of Canada, Ottawa, 1952.

Further details were obtained from "Economic Geology of the West Half of the Ashcroft Map Area, British Columbia, Canada", by G.G. Krause, Sept. 15, 1970. Included with that report was a "Report on Nickel, Chromium, Cobalt, Copper, Zinc, Lead, Silver, Molybdenum and Manganese Soil Survey, Cornwall Group of Claims" by Alfred Burgoyne of Crest Laboratories, Vancouver, dated December 23, 1969. These reports were filed as an assessment work report with the Department of Mines and Petroleum Resources, File No. 2947. It is on public file.

Information on more extensive covering of the area now under consideration, by geological, geochemical and geophysical studies, is to be found in "Geochemical Survey, Induced Polarization and Resistivity Survey, Magnetometer Survey.... (on enumerated Jeff and Jack claims)" by B.O. Brynerson, P. Eng., J.D. Knauer and L. Reinertson; for Noranda Exploration Co. Ltd., Oct. 19, 1971. This was filed with the Department of Mines and Petroleum Resources as an assessment

work report, with file no. 3359. It is on public file.

Further information was derived from sets of geological and geochemical maps prepared by Bethlehem Copper Corp. and kindly loaned by that company to Rea Petro Corp. Useful information may also be obtained from "Ashcroft British Columbia", Map 5218G, Aeromagnetic Series, Geophysics Paper 5218, Sheet 92 I/11, scale one inch to one mile; Geological Survey of Canada, Ottawa, undated. Area was flown in 1966-1967.

The above assessment reports and privately prepared maps, furnish much information on the manner of occurrence of mineralization in this area. The data are set forth, correlated, evaluated and subjected to my interpretation in the "Report to Rea Petro Corp., Cache Creek, B.C., on the Add and Moly Claims Near Ashcroft, Kamloops Mining Division, B.C." dated Aug 28, 1980. It appeared in the Rea Petro Prospectus dated March 4, 1981. Some brief comments on the prior work are offered below.

I have visited the Add and Moly claims area on several occasions.

PRIOR WORK

The earliest exploration work recorded in this area west of Ashcroft, appears to have been on the claims staked by G.G. Krause, a Professional Geologist of Alberta, who located 164 claims in this area, divided into three blocks. This is recounted in his report of Sept. 17, 1970, mentioned in the

Bibliography. He formed a company, Lone Creek Mines Ltd., to pursue the exploration and development of his holdings. The largest block of claims covered an area comparable to, and generally including that of the present Rea Petro ADD & Moly group. The most work was concentrated, however, on a northern block of claims, in the Cornwall Hills, some 4 or 5 kilometres NW of the ADD VI claim.

In that area, he mapped an apparently previously unknown intrusive plug of diorite about three kilometres in diameter, corresponding to a strong magnetic anomaly on the aero-magnetic map, referred to in the Bibliography. Exploration there revealed a strong fault, striking N 8° W across the intrusive and well mineralised over a length of at least 1,200 m (and still open at both ends) with nickel, copper and cobalt.

Only cursory, reconnaissance geochemical work was done on his Jeff claims, in the area now occupied by the Moly and Add group. Three N-S lines, spaced 1,500 ft. and 3,000 ft. apart through the central and western portion of the group, were sampled at 200 ft. intervals. Some anomalous nickel and zinc readings were observed in what is now the northern part of ADD VI. Reconnaissance to the east, in the area of the northwestern part of Moly 2 and on what was then Jeff 3, where some copper showings had been noted, produced anomalous readings. Detailed work ensued, which revealed a discontinuous scattering of copper soil anomalies. Several X-ray drill holes were drilled, but core recovery was very poor to nil. The holes were drilled only to 100 ft. depth. The cuttings were tested

by atomic absorption and results given in parts per million (PPM). Lows ranged from 40 ppm to 90 ppm and highs up to 500 ppm and one of 800 ppm. In view of the type of drill used and the extremely poor core recovery, the copper values are relevant only to the extent they indicate that there is anomalous copper mineralisation within the drilled area.

The same deduction may be drawn from the results of some percussion holes, sunk at various locations in that claim group but without any guidance from a detailed soil sampling survey. Many of the holes had to be drilled dry, compounding the uncertainty of the retrieval of the cuttings. Values were reported in copper, up to 0.17% and in zinc up to 0.24%, which signify nothing more than the fact that copper and zinc mineralisation has taken place.

The subsequent geological, geochemical and geophysical surveys by Noranda Mines were considerably more extensive, but were still on a reconnaissance basis. East-west grid lines were spaced from 330 to 480 ft. apart and readings were taken at intervals of 200 ft. to 400 ft., covering an extensive area, but with very widely spaced observations.

The Noranda geological study revealed some basaltic flows, felsitic volcanics, quartz and calcite veining and an intrusive quartz porphyry sill 50 ft. wide carrying quartz vein stockworks with copper showings both in the sill and at its contacts with basaltic flows. Bodies of magnesite and of serpentine were observed at various localities. Magnesite, the carbonate of

magnesium, occurs as a sedimentary formation and is also the product of hydrothermal alteration of serpentine. The latter is a hydrous silicate of magnesium usually resulting from the hydrothermal alteration of dark-colored igneous rocks high in primary magnesium silicates. Some iron and nickel commonly enter into its composition. Nickel-rich serpentine, known as garnierite, is often an ore of nickel. The possibility that sub-commercial proportions of nickel in serpentine may yield strong nickel soil anomalies, must be kept in mind when evaluating nickel indications in serpentinous areas.

A synclinal folding of the quartz-sericite schists was mapped in the area of what is now the south end of ADD 2 and ADD IV. It plunges south-easterly towards an intrusive body of diorite mapped by the Bethlehem geologists in what is now the claim ADD 8.

It is in this area, which shows evidence of hydrothermal, intrusive and mineralising activity that the Noranda geochemical survey discovered the most impressive copper-zinc-molybdenum anomaly of their survey. It measures about 2,400 ft. by 2,400 ft. The subsequent Bethlehem geochemical survey showed that it extends a further 1,700 ft. into what is now the ADD I claim, with outlying anomalies east and southeast of it. According to the Bethlehem results, the anomaly measures approximately 4,300 ft. N-S by 1,700 ft. E-W. It escaped observation in the Krause survey because the south end of the nearest one of the only 3 N-S lines of reconnaissance observations in that survey, lay 800 ft. to the west.

The Noranda survey showed interesting copper-molybdenum-zinc anomalies in what is now the ADD I claim, in the eastern part of what is now the ADD VI claim and, in the central part of that claim anomalous readings in the region of the nickel-zinc recordings of the Krause survey (Noranda did not test for nickel). These readings occurred within linear, N-S zones of strong magnetic and I.P. reactions. These latter are probably indicative of a strong, N-S fault. A pronounced bulging-out of the area of magnetic and electrical reactions in the vicinity of the high soil readings, leads to the belief that the zone is underlain by sulphides of the respective metals and that magnetic minerals, magnetite and/or pyrrhotite probably accompany them. Nickel mineralisation, in the form of pentlandite, is often associated with the magnetic iron sulphide, pyrrhotite. The electrical reaction in the I.P. survey could also be caused by the presence of graphite in the fault zone.

Noranda's I.P. survey also yielded strong indications of metallic mineralisation on the first-mentioned, large copper-zinc-molybdenum anomaly in the south end of ADD 2 and ADD IV.

The survey by Bethlehem Copper was also of reconnaissance nature, confined to soil sampling for copper, molybdenum, zinc and lead. East-west grid lines were spaced 250m to 500m (815 ft. to 1,630 ft.) apart, with readings along them at intervals of 100m (327 ft.). Consequently, close correspondence between these results and those of the Noranda survey can not be expected. The Bethlehem survey did, however, as previously

noted, confirm and extend the large, copper-molybdenum-zinc anomaly in the ADD 2, ADD IV and ADD I area. Otherwise, about all that can be said is, that there are various isolated or grouped anomalies which deserve further, detailed investigation; the wide spacings between readings preclude drawing any firmer conclusions. Some of the principal groups of anomalies which might be interesting, are found in the Moly, Moly 2, ADD I, ADD IV, ADD V, ADD VI claims.

The distribution, especially of copper-molybdenum anomalies suggests that this type of mineralisation is associated especially with the diorite intrusions and is to be looked for around and just within their peripheries. The nickel anomalies, on the other hand are associated with a geophysically indicated fault structure with a roughly N-S strike. Furthermore, in the Cornwall Hills to the north, Krause discovered a fault, striking N 8° W through a diorite stock, the fault being mineralised with nickel, copper and some cobalt. The two faults are roughly parallel, not on strike.

In addition to the faults just mentioned, the Noranda magnetic survey indicated two other faults, in the western part of their survey area, with a NNW strike. The I.P. survey indicated an unmineralised fault striking NW through the central part of the ADD-Moly group.

From the results of the preceding geochemical and geophysical surveys, it may be deduced that there were at least two episodes of mineralisation in this area. One took place

at the time of the intrusions of the diorite stocks, from which mineralising solutions emanated as the stocks cooled. Circulating in the intruded rocks, these fluids produced copper and molybdenum (with some zinc) contact metasomatic deposits in the invaded rocks and sometimes in the cooled periphery of the stock itself. The nickel mineralisation, on the other hand, is a higher temperature formation and seems to have originated from strong fault structures tapping probably deeper and hotter portions of the magma, which were still liquid even after the diorite plugs had solidified (the Cornwall Hills fault carrying nickel cuts through a diorite stock which must have cooled and solidified before the faulting occurred). The copper-nickel mineralisation is, consequently, a higher temperature, hydrothermal vein formation.

Aside from the data cited above concerning a few X-ray and percussion drill holes drilled in the early stages of the exploration of this area, there appears to be no publicly available information concerning any other, possible drilling programs. In view of the adverse circumstances under which the drilling was done, plus the inherent unreliability in retrieving truly representative samples of the two types of drills used, the results can hardly be considered relevant to any effort to appraise mineral-bearing possibilities of the area. In addition, the drilling was conducted following only a widely-spaced reconnaissance program of geochemical and geophysical observations. It therefor lacked the rational

guidance which a detailed investigation could have provided.

The geological setting is one conducive to mineralisation. A receptive host rock, the Cache Creek greenstones (quartz-sericite schists) have been intruded by stocks of diorite and opened up by a series of faults. The intrusive stocks of diorite have, at least in some cases, produced contact metasomatic deposits of copper-molybdenum-zinc in the intruded schists. Some of the faults appear to have tapped deeper and hotter portions of the intrusive magmas, solutions from which seem to have formed hydrothermal vein deposits of copper and nickel. Geochemical and geophysical studies have indicated areas in which concentrations of minerals have apparently taken place.

Believing the previous explorations were not pushed to the logical end points, I made the following recommendation in my report to Rea Petro Corp., dated Aug. 28, 1980, referred to in the Bibliography of References:- "Detail geochemical and geophysical surveys of the areas of possible interest are, therefor, the essential first stage in the assessment of the mineral possibilities of this area which, on the available evidence, are excellent." It is the results of this recommended program with which the present report is concerned.

ASSESSMENT WORK

The assessment work on the Molly & Add Group of claims (two claims are named Moly claims, but for the group, the spelling Molly was used), consisted of geochemical soil surveys

on the entire group, plus geophysical surveys by magnetometer on the ADD 8 claim and on part of the Moly claim. The work was carried out between August 1 and December 31, 1981, by Pacific Northwest Geotech Ltd., of Kamloops, B.C., which has prepared the relevant maps for Rea Petro Corp. The field crew was under the supervision of Keith D'Angelo, Field Supervisor and Director of the Company. The crew consisted of Brian Cross, Bruce Vogel and Paul Vogel for the geochemical survey and Brian Muloin for the magnetometer survey.

The magnetic survey on part of the Moly claim was the subject of a separate assessment submission, "Report to Rea Petro Corporation on Assessment Work on the Moly Claim Near Ashcroft, B.C., by Sherwin F. Kelly, P.Eng.", dated May 21, 1982. That magnetic survey is consequently not reported on herein, although the results will be referred to for interpretational purposes.

The grid lay-out and soil sampling on the Moly claim were carried out prior to its anniversary year commencing March 6, 1981. The costs are consequently not applicable in this present submission. The chemical determinations on the samples, however, were made Sept. 18, 1981, only after the commencement of the field work now being reported upon. The costs of that work are therefor included in the present submission and the results are recorded, interpreted and commented upon.

In preparation for the geochemical and geophysical surveys, two grids of E-W lines were laid out. The first grid covered Moly 2 and ADD claims 1 to 7, plus ADD Fr. The second one

covered ADD 8. Each grid included three Base Lines running N-S. The total length of lines laid out, cut, flagged and sampled, was 104 km.

For the first grid, Base Line 1 was laid out N-S in the eastern part of Moly 2, for a length of 1,500m. Base Line 2 was run N-S through the eastern part of ADD 5 and the mid-part of ADD 2, for a length of 2,600m. Base Line 3 was laid out N-S in the eastern part of ADD 4, for a length of 1,050m. The grid lines were run off from Base Line 2, spaced 100m apart along that line with the stations at 25m intervals being numbered east and west from that Base Line. The other Base Lines were used as check points, where any deviations in alignment or spacing of the stations, could be corrected. The grid lines turned off Base Line 2 were numbered from south to north, starting with Line 0+00N at the south boundary of Moly 2. They continued at 100m intervals to Line 26+00N at the north boundary of ADD 2 and ADD 4.

The 27 grid lines varied in length from 1,200m to 2,100m, for a total length of 62,350m. The Base Lines totalled 5,150m in length, giving an over-all length of line on this group of the claims, of 67.5 km. Samples were collected at 25m intervals along each grid line.

On the ADD 8 claim there were also three Base Lines, but not continuous with the three mentioned above. Base Line 1 was run along the east boundary of the claim, in line with the east boundary of ADD 1 adjacent to the north, and of Moly 2. Base Line 2, laid out N-S, parallel to Base Line 1, lies 700m

west of BL 1. Another 700m west, Base Line 3 runs N-S, 600m from the west boundary of ADD 8 claim. All Base Lines are 1,500m long and run south from the north boundary of the claim. The grid lines, at 100m intervals, are numbered south from the north boundary, as 0+00S, 1+00S, 2+00S, etc. The stations, at 25m intervals along the lines, are numbered west from the east boundary, at BL 1. The numbering of the stations on this claim does not, therefor, correspond with the numbering of the grid previously described. All grid lines on ADD 8 are 2,000m long. The total lineage on this claim amounts to 36.5km. Samples were taken at 25m intervals along the grid lines, as were the magnetometer readings.

Although the grid lay-out and sampling on the Moly claim are not part of this report, the analyses of the samples are, so the distribution of the samples must be described. They were taken at 25m intervals along E-W lines, there being 11 lines spaced 100m apart N-S, each line measuring 1,500m in length. The samples were numbered in metres east of the west boundary of the Moly claim, starting at the south end and moving north.

When the magnetic survey was made by Pacific Northwest Geotech Ltd., a N-S Base Line was laid out, designated BL 800E Moly, indicating that it lies 800m east of the west boundary of the Moly claim. It also lies 600m east of the north end of the Base Line 1 of the Molly and ADD Group, first described above. The magnetic observations were taken at 25m intervals along the lines extending east from this BL. The lines were numbered from 15+00N to 25+00N and the stations numbered east from the BL.

Soil sampling stations on the original grid are hard to identify, so stations of the present magnetic survey and of the prior geochemical sampling, will be designated by the line numbers 15+00N to 30+00N and by station numbers east and west of the Moly claim BL. The line numbers conform with the line numbers of the Molly & ADD Group, but the station numbers along the lines do not conform to the station numbers off BL 1.

Both the Moly claim and the ADD 8 claim actually belong to the Molly & ADD Group, but for convenience I am referring to the Moly 2 and ADD 1 to 7, as the Molly & ADD claims, and designating ADD 8 and Moly claims separately. These last two were surveyed separately and have different Base Lines and are shown individually on their own maps.

The maps of these surveys are in an envelope accompanying this report, and will be referred to in the text.

The correlation of claim posts with stations on the grid lines and Base Lines, when entered on the maps, revealed some gaps and some overlaps which merit attention. Of ADD 7, only the eastern unit, No. 1, appears to have covered open ground. The remaining units, extending westerly, are in apparent contravention with the north ends of ADD 2, ADD 4 and ADD 6. ADD 3 is in apparent contravention with the NW unit of Moly 2. The NE unit of Moly 2 is in apparent contravention with the SW unit of the Moly claim. These situations require careful review, because reduction in size

of some claims and possibly abandonment of some, could effect economies in work requirements.

There appears to be a gap some fifty metres wide between ADD 7 and Moly 2. Between ADD 5 and ADD 8, a gap about one hundred metres wide is evident.

ADD Fraction does not show on the map. It covers an irregular area at the southern end of the Moly claim, which had been thought to be in contravention with a prior, existing claim. When the overlapped area was deemed open, the fraction was staked to cover it and bring the Moly claim to full size.

MOLY CLAIM, GEOCHEMICAL

Soil sampling for copper yielded a background value of 45 ppm (parts per million). Threshold is therefor 90 ppm and anomalous is 135 ppm and higher; see Fig. 3.

The threshold value is the lowest value contoured and is entered merely to give an overview of the area within which anomalies occur. The anomalies themselves are outlined by the 135 ppm contours and go as high as 2,300 ppm. No attempt has been made to enter all the contours around the high values as their locations are evident from the figures shown on the grid lines.

The Base Line is a rough, fortuitous boundary between the area of anomalies and the region to the west, which appears devoid of anomalous reactions. At the north end, however, there is a slight overlap from the strikingly anomalous area on the east.

The anomalous contours exhibit a pronounced N-S elongation and lineation. The contoured area spreads out to the north, from a fairly narrow zone in the SE corner to the full width of the survey area east of the BL, at the north end of the survey area, Line 25+00N. In the general area between Line 21+00N and the north limit, Line 25+00N, which measures 400m north and south (and is still open to the North) by 700m east and west, (and is still open to the east), the anomalies appear larger and stronger and occupy more area, than they do to the south.

The molybdenum contours show much the same, general pattern; see Fig. 4. Background was taken as 1 ppm, although it might possibly be set at 2 ppm. In the southern and western parts of the survey area, it is obviously 1 ppm. To the north, especially in the east, it could be 1.5 or 2 ppm. Molybdenum background for the Moly 2 and ADD 1 to ADD 7 claims is 2 ppm. It is the Moly claim under discussion, that offers a clue to explain this discrepancy. The area characterised by the 1 ppm background is well-nigh devoid of anomalies. Where the anomalies are numerous, the background appears to be 2 ppm. Consequently, where little or no molybdenum mineralisation has occurred, the general tenor in molybdenum of the bedrock may be expected to be very low and background in the soil above it is only 1 ppm. Where molybdenum has been carried into veins or disseminated in portions of the bedrock, it has also leaked out into the surrounding rocks, creating a wide, slightly higher tenor in molybdenum. The soil above such infiltrated rock has a higher

background of 2 ppm.

Threshold value is 2 ppm and anomalies would be values of 3 ppm and higher. The lowest contour used is the anomalous value, of 3 ppm. From what has been said above, it would probably be wiser to look at the 3 ppm contour as a threshold one and consider the 4 ppm contour as the first anomalous one. Contour intervals are 1 ppm up to 5 ppm, where they jump to 5 ppm and continue as 5, 10, 15 and then 30 ppm. The high values are evident in the figures inscribed at the observation stations. The wider contour interval avoids over-crowding the high-value contoured area with a multitude of contour lines.

The high values occur in the northern part of the survey area, between the BL and the east boundary, as do the high copper values. There is good correlation between high copper readings and high molybdenum values. Going south, towards the SE corner of the claim, the molybdenum soil values fall off more dramatically than do the copper ones, so that the SE portion of the Moly claim is nearly devoid of molybdenum anomalies.

In the north, however, the molybdenum soil anomalies extend farther west of the BL, up to 200m west of it, than do the high copper soil values. The implication is, that the molybdenum mineralisation leaked farther out into the wall rocks than did the copper. The area of anomalous molybdenum is still open to the north and to the east.

There is an isolated but strong molybdenum anomaly in the SW corner of the Moly claim, 100m east of that corner, on

Line 15+00N. The value is 29 ppm. This may be the northern tip of a series of arcuate anomalies in molybdenum, copper and silver, on Moly 2, lying across Lines 10+00N to 15+00N between the east boundary of that claim and the SW corner of Moly. The Pacific NW Geotech survey of the Moly 2 claim did not check that anomaly, however, but did find anomalous values along Line 15+00N, from 125 to 175 metres east of the SW corner of the Moly claim.

The zinc anomalies on the Moly claim follow the same general pattern described above; see Fig. 5. Background is taken as 100 ppm and the contours start with the threshold value of 200 ppm. Anomalous values are 300 ppm and higher. Zinc is a mobile ion and is usually widespread. The narrow confines within which anomalous, or even threshold readings are found here on the Moly claim, are therefore somewhat surprising. The high zinc readings, up to 2,800 ppm, are found between the BL and the east claim boundary, from Line 21+00N to Line 25+00 N, the north boundary of the survey area, and are still open to the north. This is the area of high copper readings, so it may be assumed that zinc accompanies some of the copper but is less widespread in its occurrence than the copper.

The zinc anomalies are contoured at intervals of 100 ppm, up to 1,000 ppm. Above that, no contours are drawn and the maximum values can be read from the figures inscribed at the indicated stations.

Silver anomalies on the Moly claim are outlined on the map, Fig. 6. Background was taken as 0.1 ppm, the situation being similar to that for molybdenum, previously described. Namely, the background on the other claims was set at 0.2 ppm and for the anomalous area on the Moly claim, it could be considered the same. At the far north end and at the south end of the study area, however, the background is 0.1 ppm.

The contours start at 0.2 ppm, the threshold value for the lower figure for background. That contour encloses so much of the Moly claim area that it is probably wiser to look at 0.4 ppm as the anomalous figure, rather than 0.3 ppm. On that basis, there are but few, small and scattered anomalies in the region west of the BL. East of the Base Line, however, the pattern of silver anomalies resembles the pattern already described for copper, molybdenum and zinc. There is a cluster of strong silver readings, 0.4 ppm up to 4.1 ppm (twenty times the higher figure for background) concentrated in the area between the BL and the east boundary and stretching from Line 21+00N to Line 25+00N. The area is still open to the north and east.

Contour values for silver are 0.2, 0.3, 0.4 and 0.5, where they jump to 1.0 and 2.0 ppm. The magnitudes of the top values can be read from the figures recorded at the observation points.

The pattern of copper anomalies shows a broad anomalous area in the northern part of the claim, narrowing to the southeast. The silver and molybdenum anomalies exhibit the narrowing connection to the southeast portion, not as strikingly as the copper but more clearly than the zinc. All these metals

concur in providing noticeably strong anomalies in the same northern portion of the survey area. The actual stations of very high readings are often the same and, if not the same are adjacent or close to each other. The high values also tend to stand out somewhat abruptly, rather than building up gradually over a wide area.

The above pattern of strong anomalies suggests that a warning may be in order. In this general area, previous workers have recorded the occurrence of some residual soils as well as transported soil deposited as a covering of glacial till. Where the soil mantle is the residue from the weathering of the bedrock, any metallic minerals in that bedrock will be present in the soil in unusually high quantities. Where the soil mantle is not residual, but transported in and dropped as till, on the other hand, any metallics in the bedrock can manifest themselves at the surface only as a result of dissolution by groundwater from the rock and then, in solution in the groundwater, moving by capillary action up to the surface. Consequently, a covering of till masking a well-mineralised bedrock might show a weaker anomaly than would be observed in residual soil over a poorly mineralised bedrock. It is therefore inadvisable to base a drilling program on soil anomalies alone; where sulphide mineralisation is concerned, they should be checked and evaluated on the basis of electrical investigations before planning a drill program.

A strong, 1.0 ppm anomaly in silver occurs 100m east of the SW corner of the claim, at the same location as a similar

molybdenum one, mentioned above. The Pacific NW Geotech survey did not find an anomaly at that point, but did show one of 0.8 ppm 175m east of the BL, although on the line 100m south of the Moly south boundary.

MOLY CLAIM, MAGNETIC

The magnetic survey on the Moly claim, east of the BL and extending from Line 15+00N to Line 30+00N, was the subject of a report dated May 21, 1982, previously mentioned. The results show a good correlation with the soil anomalies.

Except for a few strong anomalies, the magnetic relief of the larger part of the survey area is relatively weak. The contours are elongated north-south, generally parallel with the trends of the soil anomaly contours. The resemblance to the copper contours is especially noticeable.

There are some high magnetic values between the BL and the east claim boundary, on Lines 23+00N to 30+00N. Within the geochemical survey area, magnetic highs are especially prominent at the west ends of Lines 23+00N to 25+00N. These highs lie immediately north of, and adjacent to sets of impressive copper anomalies on Lines 22+00N to 24+00N. On Line 24+00N, 275 to 350 metres east of the BL, there are also high magnetic readings corresponding with strong copper anomalies. On Line 23+00N, a strong magnetic reaction at 150m west of the east claim boundary, is tangent to high copper values at 175 to 200m west of the boundary.

Since copper minerals are not magnetic, there must be an association between the copper mineralisation, probably

chalcopyrite, and the mineral responsible for the high magnetic reactions. The latter is probably either magnetite, the magnetic oxide of iron, or pyrrhotite, the magnetic sulphide of iron. Either, or both could be present in the hydrothermal solutions which presumably deposited the mineralisation responsible for the copper and the magnetic anomalies.

This association of magnetic minerals with portions of the presumed deposit of copper, endows the northern part of the claim area with considerable interest. Strong magnetic reactions are found at the western ends of Lines 26+00N and 27+00N and moderately high readings in the western portions of Lines 28+00N to 30+00N. A moderate high occurs in the eastern portion of Line 28+00N and very strong reactions were recorded on Line 30+00N between the east boundary and 250m west of it. This area was not covered in the earlier geochemical survey and should now be subjected to a northerly continuation of that survey.

MOLY CLAIM, NICKEL

The nickel results are depicted on Fig. 7. The reactions recorded were weak and the major expressions of slightly anomalous conditions were confined to the area west of the BL. This pattern is in striking contrast with the patterns recorded for copper, molybdenum, zinc and silver. In the area marked by the strong soil readings of those metals, there are only three, small contours of threshold nickel readings.

Background for nickel in this area, is 55 ppm. Threshold is 110 ppm and the first anomalous contour is 165 ppm. There

are only two anomalous areas indicated. One is at the south border of the Moly claim, where it extends from 175m to 300m west of the BL, on Line 15+00N. It is open to the south, but towards an area just east of the Moly 2 claim and not included in the Rea Petro holdings. The maximum reading was 410 ppm, at 275m west of the BL.

The principal anomaly, and only other one, was found on Lines 22+00N to 24+00N, between 450m and 650m west of the BL. There is only one anomalous contour, that of 165ppm and the highest value recorded there was 203 ppm.

From the studies made of the nickel occurrences not far north, in the Cornwall Hills, described in the G.G. Krause and Crest Lab. reports previously cited, it was concluded that nickel anomalies in the 100 ppm to 300 ppm bracket are probably ascribable to minor nickel associated with diorite or serpentine. Good nickel mineralisation was expected to give anomalies of around 700 ppm and higher.

The pattern of the minor nickel reactions shows weaker anomalies in the east than in the west. This suggests that, if there is a major source of nickel mineralisation, it should be looked for to the west of the Base Line. The pattern of copper, molybdenum, zinc and silver reactions, on the other hand, shows weak to negligible anomalies in the west but major ones to the east of the Base Line. The source of this mineralisation probably lies in the area east of the Base Line.

MOLY CLAIM, SUMMARY AND CONCLUSIONS

Nickel reactions on the survey area of the Moly claim are negligible; they indicate that the search for better nickel showings should be pursued elsewhere on the Rea Petro holdings. Copper, molybdenum, zinc and silver, however, are represented by strong soil anomalies in the northern part of the survey area, Lines 21+00N to 25+00N, between the Base Line and the east claim boundary. The reactive areas are still open to the east and the north. The magnetic anomalies, which correlate well with the soil reactions, especially the copper, imply that the same pattern probably extends to the north claim boundary, Line 30+00N, where the magnetic indications are still open to the north. The soil sampling did not extend north of Line 25+00N. It should be continued to Line 30+00N. The entire width of the claim should be covered, provided the mineral rights are available in the portion west of the Base Line, where an old land grant may retain mineral titles.

The N-S elongation and linear orientation of the soil anomalies imply the presence in the bedrock of conduits with that orientation, capable of channelling mineral-bearing hydrothermal solutions through some areas of bedrock physically favorable (fractured, brecciated, etc.) or chemically favorable (soluble and amenable to replacement) to the deposition of their mineral loads. Such channels could be fractures, bedding planes, foliations etc. The "tailing out", especially of the copper and magnetic contours towards the southeast

portion of the claim, suggests that the solutions may have emanated from that area and moved northerly. In the region north of Line 21+00N they spread out westerly and probably easterly, guided possibly by cross fractures or encountering rocks more susceptible to alteration and replacement.

The geological maps of this area, both governmental and private (Krause and Noranda) show an oval body of diorite intrusive, about a mile in length and striking NE-SW, which lies adjacent to, or overlaps the SE corner of the Moly claim. This intrusive body is probably the source of the mineralising solutions. They may have emanated from the now exposed portion of the intrusive and moved northerly, along fractures, bedding planes or foliations in the Cache Creek formation. Then, some 500 metres into the wall rocks, they spread out more widely into those formations. Or, the intrusive body may slope out at depth from the exposure and underlie the surrounding Cache Creek beds. The solutions may have been given off from some such concealed portion of the magma, and moved up through the overlying Cache Creek rocks in both N-S and E-W conduits. This produced the anomalous area, with minor "leakage" southerly along fractures leading to the exposed portion of the intrusive.

The soil anomalies in this portion of the Moly claim are impressive and underline the desirability of completing the soil sampling survey on the balance of the claim area. Before spotting any drill holes, however, it is most advisable that

an electrical survey be conducted to define the areas of stronger sulphide mineralisation.

MOLY 2, ADD 1-7 & FRACTION, GEOCHEMICAL

The nickel anomalies on some of the claims in this group of Rea Petro holdings, are in strong contrast with those just discussed. Between the west boundary of the Moly claim and the ADD 4 claim, there are a few threshold contours and only a couple of low anomalies; see Fig. 8. Some low anomalies appear on ADD 4, but the striking ones occupy the northeast half of ADD 6. The background for nickel is again 55 ppm, with threshold at 110 ppm and anomalous readings being 165 ppm and higher. Contours start with the threshold value of 110 ppm and top anomalous values lie in the bracket of 500 ppm to over 700 ppm.

The most noticeable anomaly is at the center of ADD 6, extending over 200m N-S across Lines 20+00N to 22+00N with a width of 150m between Stations 9+00W and 11+00W. The top values lie between 382 and 766 ppm. This anomaly, and others en echelon to the northwest and southeast, show contours elongated north and south but the line through the centers is oriented about N 35° W. Another set of highs striking about N 20° W across the NE corner of the claim, lies some 300m to the east.

These nickel anomalies lie in the general area wherein G.G. Krause's two N-S reconnaissance lines encountered nickel and zinc values. They also lie on, and near the N-S fault outlined by the magnetic survey conducted by Noranda. That

survey showed a much broadened area of strong magnetic reaction in this immediate vicinity. Electrical work (I.P. survey) indicated metallic conductivity along this fault, which the Noranda geologists noted might indicate sulphide mineralisation or might signify graphite.

In an electrical conductivity study of this magnetic formation, several alternative possibilities must be kept in mind. Electrical conductivity plus high magnetic susceptibility can signify the presence of the magnetic, metallicly conductive pyrrhotite, an iron sulphide. Pentlandite, a nickel-iron sulphide and the usual ore of nickel, is often a constituent of pyrrhotite deposits. But the conductive-magnetic pattern could also result from the association of the magnetic oxide of iron, magnetite, with such non-magnetic sulphides as pyrite, chalcopyrite, etc., with or without any nickel.

A non-conductive but magnetic formation could result from a mass of serpentine. But the non-conductivity does not rule out the possible presence of nickel. The serpentinous mineral, garnierite, is a hydrous silicate of magnesium which usually carries nickel and may, on occasion, be an ore of nickel. The area consequently requires further, intensive exploration, including drilling.

An electrically indicated fault (non-magnetic and poorly conductive) was shown on the Noranda I.P. survey to strike northwesterly from near the southeast corner of ADD 1 towards the northwest corner of ADD 6. It thus appears to form,

roughly, the southwest boundary of the nickel anomalies. This fault could have dislocated, or influenced the deposition of the minerals responsible for the nickel anomalies. Further study on this score is needed.

The distribution of copper in this survey area is distinctly different from that of nickel. On ADD 6, where nickel is spectacular, there is hardly any copper. A few threshold contours are extended NNW across the mid-part of the claim, with one, isolated anomaly at Station 12+00W on Line 23+00N. It is marked by a soil content of 236 ppm and is adjacent to a small nickel anomaly of 348 ppm. The spectacular copper anomalies are in the southern part of ADD 2 and ADD 4, extending south across the eastern half of ADD 5 and overlapping on the west end of ADD 1; see Fig. 9.

Background on these claims is again 45 ppm with threshold at 90 ppm. The first anomalous contour is 135 ppm, continuing to higher figures in steps of 45 ppm. Top values are in the 300 to 800 ppm spread, i.e., roughly six to seventeen times background.

The threshold and anomalous contours are characterised by a pronounced N-S elongation, there being several of them, parallel and closely spaced. They extend north from the south boundary of ADD 5, close to Line 1+00N, for 800m to Line 9+00N. This group of anomalous contours is generally wider at the south end, where it extends from 4+00E of BL 2, to 3+00W of that BL. At the northern end, the boundaries lie at 1+00E and 2+75W of BL 2.

There are some scattered anomalies nearby, in the western and southern part of ADD 1. It is worth noting that the electrically indicated (but apparently non-mineralised) fault, extending northwesterly from near the SE corner of ADD 1 towards the NW corner of ADD 6, seems also to mark the boundary of the copper mineralisation just described. Most of these copper contours lie SW of that fault. The nickel anomalies lie NE of it.

Another set of less spectacular but interesting contours, lies across the 2N, 1W, unit of the Moly 2 claim. They extend in an arcuate form from 125m east of BL 1 on Line 10+00N, north and a little westerly, almost to Line 15+00N at 100m west of BL 1. The mineralisation responsible for these anomalies may have had its origin in the same intrusive body as that believed responsible for the mineralisation on the Moly claim. Top values lie between 138 ppm and 321 ppm.

This intrusive body is oval in shape, about a mile long and is oriented NE-SW. It lies tangent to, or under the SE portion of the Moly claim. The Noranda geological map shows it extending SW slightly across the highway some 400m or 500m east of the boundary of the Moly 2 claim and about opposite the area of anomalies. There are no linear alignments of anomalies here which would indicate possible "conduits" to conduct mineralising solutions outward from the vicinity of the intrusive exposure, as there are on the Moly claim. The presumption is, therefore, that the magma had a considerably wider,

subterranean extension than is indicated by the exposed portion, with mineralising solutions arising from some parts of it. They conceivably moved upward in arcuate cracks in the overlying rocks. Such channels could have been created by tension fractures opened in the intruded rock by the force of the invading magma.

There is a small copper anomaly on ADD 7, extending across Lines 20+00N to 22+00N, between 5+00E and 5+75E, with a top value of 421 ppm.

A molybdenum anomaly covers the same area, with top values of 6 and 7 ppm. One hundred metres west of the north end of the anomaly, on Line 22+00N, a molybdenum anomaly of 10 ppm lies adjacent to a copper threshold contour.

The pattern of molybdenum anomalies shares features of both the copper and nickel distributions; see Fig. 10. Background is 2 ppm with threshold 4 ppm and anomalous values are 6 ppm and higher. A phenomenon is noted here similar to that remarked upon in discussing results on the Moly claim. In areas nearly devoid of anomalies, 1 ppm may be a reasonable background figure. Where there are numerous anomalies, however, the background figure of 2 ppm seems more appropriate. This was adopted.

The arcuate pattern of copper anomalies in the eastern portion of Moly 2, is repeated by the molybdenum contours. They generally coincide with the copper ones, except that, at the north end, on Line 14+00N, the molybdenum anomaly lies 75m

east of the copper one and coincides with a copper threshold contour. Top values are in the range of 7 to 12 ppm.

Molybdenum anomalies are numerous in the area marked by abundant copper anomalies, in the southern part of ADD 2, ADD 4 and the eastern part of ADD 5. They show top values of 6 to 21 ppm. They are not as numerous nor as closely crowded as the copper ones and a good many of them are one-station anomalies. Anomalies continuous across two or more lines, are more trustworthy. Such a one appears across Lines 8, 9 & 10N only 75 to 100m east of BL 2. It conforms closely with a similar copper contour. Some strong, one-station anomalies are strung out along the Line 2+00W of BL 2. They lie in a strong copper anomaly and deserve credence.

Scattered anomalies lie west of the copper, in and beyond the west end of ADD 5. A few molybdenum contours occur in the east portion of ADD 1, but only two conform to copper contours. One is adjacent on the west to BL on Lines 0+00 to 3+00N. The other lies on the east side of the BL, on Line 3+00N. The copper contour there is, however, only a threshold one.

A few, one-station anomalies are scattered in the area immediately north of the concentrated copper anomalies, in ADD 2 and ADD 4. They are on strike of the copper contours and may signify that the structures carrying the mineralisation (fractures, foliations, bedding planes, etc.) continue beyond the copper area and that the molybdenum moved farther out along them.

Farther north, the molybdenum contours decrease markedly. A couple of small centres in the north end of ADD 2 have no accompanying copper ones, but on ADD 7 there are a couple of molybdenum centres with corresponding copper ones (anomalous and threshold).

To the west, however, on ADD 6, a distinctive pattern appears. Some fairly strong molybdenum anomalies, elongated N-S, occupy the east portion of ADD 6. Top values range from 7 to 19 ppm. There are no copper anomalies in this area, but some strong nickel ones lie within it. The contour elongations are distinctly northerly, implying northerly-striking faults, shears, or foliations, etc. as the mineral carriers. Top nickel values are in the range of 320 ppm to over 700 ppm.

There is no molybdenum, or copper, within the largest nickel anomaly that occupies the central portion of the claim. There are, however, small showings of these metals just east and west of it. To the east, between that anomaly and BL 3, a small molybdenum anomaly coincides with a nickel one on Line 21+00N. To the northwest, on Line 23+00N, a couple of molybdenum anomalies correspond with a couple of nickel ones on that line, and with a copper one which lies between the two nickel anomalies.

There is nothing, however, in the central and western portions of ADD 6 to compare with the unusual association of strong nickel and molybdenum soil values in the eastern part of that claim. This suggests that the channelways for the two

systems may be different, and/or that there was more than one episode of mineralisation. The nickel would normally be expected to derive from a magma of basic character, whereas the molybdenum, along with copper, is usually associated with a more acidic magma, such as diorite or quartz diorite. The channelways in the eastern part of the claim, may thus have tapped two magmas to produce a commingling of the two different types of hydrothermal solutions. The channel on which the large anomaly formed, however, may have tapped only the basic magma. Drilling in this area must be done keeping in mind the possible existence of more than one system of mineralisation.

The silver anomalies show a somewhat similar pattern; see Fig. 11. Silver reactions are so widespread that a background of 0.2 ppm is pretty clearly indicated. Threshold is 0.4 ppm and anomalous is 0.6 ppm and over. Top values go as high as 4.0 ppm, although mostly they are in the range of 0.9 to 2.3 ppm.

A strong silver anomaly (1.1 to 4.0 ppm) extends from Line 21+00N to Line 24+00N in the western part of ADD 6. It covers roughly the same area as the copper, molybdenum and nickel anomalies just NW of the big centre of nickel readings in the mid-part of ADD 6, described above. This silver anomaly continues, however, slightly east of south, to the south boundary of the claim where it is still open to the south. There are no nickel, copper, molybdenum or zinc anomalies in this southward extension of the silver reactions. This raises

a question as to whether the silver here accompanies lead mineralisation. Lead minerals seem not to have been reported in this area, but the Bethlehem reconnaissance survey revealed a few lead anomalies, some in this vicinity. Testing soil samples for lead in this area, and possibly elsewhere, is advisable.

There are three anomalous contours of silver in the eastern part of ADD 6, which correspond roughly with some of the nickel, copper and molybdenum ones in that portion of the claim. The silver presence is not, however, as striking as the other metals.

In the central south portion of ADD 7, there is a strong silver anomaly (2.3 ppm) coinciding with the copper and molybdenum ones at that location.

The northern portions of ADD 2 and ADD 4 carry little silver. In the southern part, and in ADD 5 and ADD 1, silver contours increase and correspond well with the copper and molybdenum ones, especially the copper. The silver presence in this portion of the survey area, especially on ADD 1 and spilling over onto Moly 2, is impressive: silver shows maximum values in the range of 0.9 to 2.4 ppm.

The arcuate system of anomalies on unit 2N, 1W, of Moly 2, is followed by the silver anomalies, with top values of 1.3 ppm.

Zinc is more sparsely spread about than the other metals described above; see Fig. 12. Background is 100 ppm, threshold is 200 ppm and anomalous is 300 ppm and higher. Top values

are in the range of 600 ppm to 1,300 ppm.

A zinc anomaly lies across Lines 22+00N to 24+00N in the western part of ADD 6. It corresponds with the minor nickel, copper, molybdenum and silver anomalies in that same location, on the NW side of the big, central nickel anomaly. This center of zinc activity has no extensions, north or south; its top value is 1309 ppm.

Three zinc anomalies lie east of the central nickel one, in the eastern part of ADD 6 which is marked by N-S contours of nickel, molybdenum and silver. Maximum zinc values are in the range of 400 ppm to 1275 ppm.

In ADD 7, on Lines 21+00N and 22+00N, there is a strong zinc anomaly, coinciding with the previously-mentioned silver, copper and molybdenum ones. The top zinc value is 1,012 ppm.

Zinc contours are well-nigh absent on the remainder of the survey area, down to the vicinity of Line 13+00N. There, and on Line 10+00N, they sketchily pick up the arcuate anomaly of copper, molybdenum and silver near the east border of Moly 2, with highest values of 330 to 640 ppm. in zinc.

Strong anomalies of zinc appear in the southern portion of ADD 2 and ADD 4, in the area of strong copper, silver and molybdenum values; top values range from 487 to 1300 ppm. The zinc tends to fade out on ADD 5 and ADD 1, however, and is not as impressive in this latter area as the copper and silver.

MOLY 2, ADD 1-7 & FRACTION, SUMMARY AND CONCLUSIONS

In this segment of the Molly & Add Group, there are two major centres of soil anomalies, plus one medium and a minor one. The most arresting area occupies a large part of the claim ADD 6, where a number of nickel anomalies are associated with strong silver, molybdenum and zinc reactions, but only insignificant copper ones.

The mineral anomalies on ADD 6 are notable for a strong silver anomaly extending SSE across the full length of the western part of the claim, for a length of 800m. A big area of high nickel anomalies, 250m by 175m, occupies the central portion of that claim, immediately east of the silver reactions. In the eastern part of the claim, there are numerous contours of anomalous values, elongated N-S and enclosing high readings in nickel, silver, molybdenum and zinc, over a N-S length of 1,000m and a width of 200m.

Either copper, zinc or lead are the usual accompaniments of silver. The virtual lack of copper and zinc in the long silver anomaly suggests the advisability of investigating the vicinity for signs of lead minerals, not heretofore reported in this area.

The unusual association of zinc, molybdenum and silver with nickel, in the eastern part of ADD 6, suggests the possibility of there having been more than one mode, or one period of mineral deposition in that area. Nickel usually originates in a basic magma but the copper, molybdenum and

zinc sequence is likely to arise from a more acidic magma, such as diorite or quartz diorite. There may thus have been a commingling of hydrothermal, mineralising solutions from different sources which may possibly have even circulated at different times.

The other, principal area of highly anomalous values, lies at the south ends of ADD 2 and ADD 4 and across ADD 5 and ADD 1. Strongly elongated, N-S contours outline anomalies of copper, silver, molybdenum and zinc. The copper are the most persistent and noticeable. They extend over a width of 500m from Line 9+00N, south 900m to the south claim line of ADD 1. The contours are still open to the south.

The silver contours are not quite as abundant as the copper ones, but occupy about the same area. Some of them are also still open to the south.

Molybdenum contours are not as numerous, and some lie to the west and some to the east of the copper series, but most conform to the latter. A few are open to the south. Zinc contours are concentrated in the south end of ADD 2 and do not extend south of ADD 5 or ADD 1. See the discussion of ADD 8, below, for the southward continuation of this zone.

The area of medium interest embraces the eastern part of Moly 2, the unit 2N, 1W. An arcuate formation of the anomalous contours of copper, molybdenum, silver and to some extent zinc, extends from Line 10+00N, north for 500m to Line 15+00N, in the vicinity of BL 1. It suggests that mineralisation arose from a deeply buried, southwest extension of the diorite

batholith exposed east of the highway. The western tip of the exposure is some 400m or 500m east of the Moly 2 boundary. It is possible that arcuate tension cracks, opened in the overlying Cache Creek formation by the intruding magma, provided channelways for mineral deposition by the hydrothermal solutions rising from that intrusive magma. Deep drilling may be indicated to test for more continuously and more heavily mineralised formations nearer the source of the mineralising solutions.

There is an area of minor interest on ADD 7, where contours of copper, silver, molybdenum and zinc extend across Lines 20+00N to 22+00N in the mid-south portion of the claim. Should further investigation show that this is the tip of a deposit which lengthens and thickens with depth as the presumed origin is approached, the minor interest might develop into a major one.

ADD 8 CLAIM, MAGNETIC

It should be recalled that, as explained early in this discussion, the lay-out of grid lines on the ADD 8 claim differs from that on the group to the north of it. Three N-S Base Lines were run, but were not extensions of the three to the north. On ADD 8, the Base Line 1 coincides with the east boundary of the claim and all stations are numbered west of it. The E-W grid lines are numbered south from the north boundary of the claim. The subsidiary Base Lines, numbers 2 and 3, are 700m and 1400m respectively west of BL 1; they served as check points to rectify any errors in orientation or spacing of the grid

lines and of the stations on the grid. The grid lines are all 2,000m long E-W, and the Base Lines are 1,500m long, N-S.

The magnetic survey was carried out by Brian Muloin with a Scintrex MP-2 magnetometer, assisted by Brian Cross with a Geometrix Unimag. The work was performed between Nov. 22 and 24, 1981.

The MP-2 portable proton precession magnetometer is manufactured by Scintrex Limited of Concord, Ontario. It has a ± 1 gamma accuracy. The Unimag Field Proton Magnetometer is manufactured by EG&G Geometrics and marketed in Canada from that company's offices in Downsview, Ontario. It has an accuracy of ± 5 gammas.

A closed loop of stations was established, with base values recorded at each station after eliminating the effect of diurnal variation. The readings on the grid lines were then corrected for diurnal variation by checking periodically on base stations established in the closed loop. The statement is made on the map, Fig 13, that the estimated error is ± 10 gammas. That should probably read ± 5 gammas, for a total range of 10 gammas.

The total earth field in this vicinity is a little over 57,000 gammas. To simplify the presentation, that figure is subtracted from all readings and the residual is plotted on Fig. 13. For very low or very high figures, the thousand digit is entered on the map to emphasize this fact. That is, a reading of 56,543, for example, would be recorded on the map

as 6543. A reading of 58,277 would be recorded as 8277. The contours are drawn at 100 gamma intervals; see Fig. 13.

A striking feature of the magnetic map of ADD 8, is the clear division of the area into three segments of different magnetic patterns. West of BL 3 and extending some 200m east of it at the south end of the grid, the magnetic pattern is one of very low relief, marked by meandering contours of 200 gamma values and a few, small ones of 300 gammas. There is a generally northerly orientation to the contours, in spite of their irregularity. The boundary of this area is, in effect, BL 3, but there is a small centre of 500-gamma activity 100m west of it at the north end; at the southern end, a few small, 200 and 300 gamma contours spill over for about 200m east of that BL.

Meandering SSE from the vicinity of the 500-gamma centre just west of BL 3 in the north, a 300-gamma contour separates the pattern just described on the west, from the distinctly different ones east of it. North from Line 5+00S the pattern between stations 4+00W and 12+00W is one of northerly to northwesterly-striking and elongated contours around very high and very low magnetic readings. The true width of this zone is 400 to 500 metres. Its appearance is significantly similar to the magnetic pattern recorded on the Moly claim to the north, which was recorded and evaluated in my recent assessment report on that claim, previously referred to.

South of Line 5+00S and east of BL 3 (especially east of the 300 contour) the pattern is largely one of flat relief in the range of 300 to 400 gammas, and no contours. This is interrupted, however, by a southeasterly extension from the just-described zone of high reactions. It is surrounded by a 400-gamma contour which encloses a few broader and much lower anomalies, narrowing to the southeast. It terminates at Line 11+00S, a couple of hundred metres west of BL 1.

The geological survey by Bethlehem Copper in 1977, described in my report appearing in the Rea Petro Prospectus cited above, recorded a dioritic intrusion lying about 450m south of the present ADD 1 claim. It was not completely outlined and all that appears on their geological map is an arcuate exposure about 450m long, of what is presumably the north contact. The area of flat magnetic response may be underlain by that intrusive body. The bands of strong magnetic reactions extending northwesterly from the contact are reasonably ascribable to magnetic minerals carried by hydrothermal solutions emanating from the intrusive magma. They found their way along channels extending northwesterly from the intrusive contact, in which mineral deposition then took place.

The geological survey by Bethlehem Copper in 1971, also described in my prospectus report to Rea Petro and cited in the bibliography above, outlined geological structures which indicated a southeasterly-plunging synclinal fold in the

southern ends of ADD 2 and ADD 4. The southern limb of this syncline lies at the south end of the boundary between those two claims and strikes towards the area of the intrusive mapped later by Noranda. The vicinity of this synclinal fold is marked by evidence of hydrothermal activity and the speculation was offered, in my prospectus report to Rea Petro previously cited, that "...the magma of the intrusive mass at the south was the source of the hydrothermal, intrusive and mineralizing activity already put in evidence by the sparse showings examined." The magnetic results strengthen that hypothesis.

ADD 8 CLAIM, GEOCHEMICAL

The results of the copper and molybdenum investigation of ADD 8, are shown on Fig. 14. Copper background is 40 ppm, threshold is 80 ppm and anomalous values are 120 ppm and over. On this map, it is only the 120 ppm contours and higher, that outline anomalies. Maximum values are in the 300 to nearly 500 ppm range.

The copper soil anomaly contours closely reflect the magnetic contours. West of about the mid-portion of the claim, there are only scattered copper anomalies with a generally northerly strike and limited length. Top values are in the range of 123 to 182 ppm, except for one, strong anomaly on Line 8+00S with a maximum of 480 ppm. With one exception, a small anomaly of 132 ppm, they all lie on the north and east side of Oregon Jack Creek.

The trend of these contours, projected northerly, would carry them west of the west end of ADD 5 and of ADD 4. They are close to aligning, however, with the strong, northerly striking fault across the middle of ADD 6. That fault was delineated by the Noranda magnetic survey; it is apparently the locus of the high nickel anomalies outlined on ADD 6 by the present geochemical survey, as previously described.

The northeastern portion of ADD 8 is marked by a striking series of copper anomalies, oriented northwesterly with peak values as high as 470 ppm. They closely parallel, sometimes coinciding with the magnetic contours. The copper anomalies continue a little farther south than the magnetic ones, however, and die out only south of Line 8+00S; the magnetic contours well-nigh terminate at Line 5+00S. The magnetic anomaly on Line 8+00S, the only important one south of Line 5+00S, is bordered on the east by a strong copper one.

This pattern of copper anomalies supports the suggestion made previously, when discussing the magnetic results; namely, that the deposition of minerals took place in channelways trending northwesterly from the contact zone of an intrusive diorite plug, whose northern contact had been mapped in the vicinity of Line 5+00S. The extension of weak magnetic anomalies into the area underlain by the intrusive plug, led to the speculation that they represent sparse deposition of magnetic minerals, possibly in an inlier of a fragment of Cache Creek

beds engulfed in the peripheral portion of the invading magma; or, alternatively, in fractures opened in the cooled, outer shell of the intrusive body while the core was still molten and giving off mineralising solutions.

Copper anomalies are stronger than the magnetic ones over the intrusive plug, so the conditions for mineral precipitation, probably the temperature, favored the formation of the copper sulphide, chalcopyrite, over the magnetic minerals, pyrrhotite or magnetite. The latter were in a favorable environment for precipitation when the mineralising solutions encountered the Cache Creek formation in the contact zone around the intrusive. The concurrent deposition of the copper mineral, probably chalcopyrite and the magnetic mineral, pyrrhotite or magnetite, then continued along the northwesterly channelways to the boundary of this present survey area.

Molybdenum is not contoured, as there are not many anomalies for that metal. They may be noted where there are high readings along the grid lines. Background is principally 1 ppm, but in areas of the copper anomalies, it appears to be closer to 2 ppm. Conceding a 1 ppm background, it nevertheless seems advisable to look at 4 ppm as anomalous, rather than 3 ppm. Top values go as high as 30 ppm.

In the area of strong copper anomalies in the eastern portion of this claim, molybdenum anomalies are scarce and weak. What few there are, occur closely associated, but not always coincident with the copper anomalies. Either this magma

was low in molybdenum, or the mineralising solutions had to get farther away from the magma before encountering favorable conditions for precipitation.

The strong and more abundant molybdenum anomalies are associated with the copper anomalies in the northwestern portion of ADD 8. The values there go up to 20 and 30 ppm and are found in a band extending from the NW corner of the claim, southeasterly to Line 9+00S, with a few high readings on Line 15+00S. Strong molybdenum readings are found south and west of the Oregon Jack Creek, as well as east of it.

The distribution of molybdenum along this latter, NNW axis in the western part of the claim, implies that the source of the depositional fluids here was a different one from those mineralising the NW channelways in the eastern segment of ADD 8.

Zinc, being a mobile ion, frequently produces a more-than-usual spread of high-value anomalies. Strongly elongated contours are widely distributed over this map area; see Fig. 15. Background is 100 ppm, threshold is 200 ppm and anomalous is 300 ppm and over. The threshold contour of 200 ppm helps to visualise the trends and connections of the anomalous areas, but it is only the 300, and higher value contours that enclose anomalies.

The trend of contours in the eastern part of the ADD 8 map area, reflects the trends of the strong magnetic readings and the high copper values. But, the zinc anomalies extend all the way south to Line 14+00S. They get scarcer and weaker towards the south, so essentially reflect the magnetic and copper patterns, except that in this area, the zinc anomalies are not as

strong nor as numerous nor as closely spaced as the copper ones.

In the western portion, the zinc contours are more impressive and continuous than the copper ones; they extend all the way from the northwest corner to the south boundary just east of BL 3. They cross the Oregon Jack Creek so lie on both sides of that stream. Peak values here are in the range of 400 to over 600 ppm. The range is about the same in the eastern part, except for one maximum of over 700 ppm, near the east boundary, on Line 8+00S.

There is a striking association of copper and zinc anomalies on Line 8+00S just east of BL 3. Others are evident in the eastern end of the claim.

Silver anomalies are not very well developed in this area. Background was figured at 0.1 ppm, but again, in the vicinity of anomalies, it might be closer to 0.2 ppm. Consequently, to be conservative, anomalous values are set at 0.4 ppm or higher. Peak values are 0.5 to 0.8 ppm, mostly in the NW quadrant of the map area, as were the molybdenum ones. In the eastern area of copper and zinc anomalies, silver ones are few and far between, with a top value of only 0.5 ppm. Their pattern here is similar to the molybdenum pattern.

The nickel values are shown on Fig. 16. Background was taken as 55 ppm. Nickel mineralisation is not as strong here as in the area of ADD 6, and background might actually be a bit lower. To keep the contouring consonant with that to the north, however, it was done on the basis of a 55 ppm background.

Threshold is 110 ppm and anomalous values are 165 ppm and higher. The threshold contour of 110 ppm is a useful guide in outlining the areas of over-all mineralisation, but anomalous values are found only within the 165 ppm contours.

Nickel is strikingly absent from the eastern part of the ADD 8 claim, where copper and zinc were strong. Only a couple of small anomalies occur on the southern boundary of the claim, between BL 1 and BL 2.

The concentration of nickel contours is in the western third of ADD 8, between BL 3 and the west boundary. There, a series of northerly trending anomalies occupies the same area as the similar contours of copper and especially zinc. The higher value centers are in a band trending SSE from the northwest corner of the claim to the south boundary, just east of BL 3. This pattern parallels those of zinc and copper, though it is not necessarily coincident with those highs. The nickel highs are in the range of 300 to 700 ppm. Only the anomaly of 705 ppm in the northwest corner of the ADD 8 claim, is high enough to be ascribable to nickel mineralisation, according to the conclusions reached by Crest Lab. in the Cornwall Hills area (report by Crest Lab. to G.G. Krause, in 1969, cited in Bibliography). The rest of these anomalies would be considered due to serpentinous material. That hypothesis has yet to be verified, especially in this area.

The alignment of these contours, like that of the copper and zinc ones, suggests that the underlying, mineralised structure may be the southern continuation of the fault indicated by the magnetic survey of Noranda Mines and which appears to be the site of Pacific NW Geotech's strong nickel indications on ADD 6.

ADD 8 CLAIM, SUMMARY AND CONCLUSIONS

The ADD 8 claim lies at the southern extremity of the Rea Petro holdings, the Molly and ADD Group of claims. It shows two areas of prime interest. At the eastern end of the claim, anomalous contours of copper and zinc soil values extend in a northwesterly direction, paralleling and occasionally coinciding with narrow, strong magnetic reactions. Silver and molybdenum anomalies are scarce. The location and orientation of these elongated contours, suggests that the causative mineralisation, copper and zinc sulphides, accompanied by magnetite or pyrrhotite, may have emanated from a dioritic intrusive, mapped by the Bethlehem geologists. They showed it as an exposure about 400 or 500 metres long, located approximately along what is now the eastern part of Line 5+00S. Some mineralisation may occur within the diorite, in peripheral cooling cracks of the magma, or in an inlier of Cache Creek beds engulfed in the invading magma.

The outflowing, mineralising solutions probably found channelways in the southern limb of a southeasterly plunging syncline, mapped by Bethlehem geologists at the southern end of

the boundary between ADD 2 and ADD 4.

Contours extending southerly from the northwest corner of ADD 8, to the vicinity of BL 3 on the south boundary of the claim, show anomalous values for copper, zinc and nickel. Molybdenum and silver occur here, in slightly greater quantities and higher values, than in the eastern zone of anomalies. In general, the copper anomalies extend only as far south as the Oregon Jack Creek valley, but the zinc ones are prominent to the south limit of the mapping. The nickel anomalies are stronger in the north, but continue with weaker values to the south limit of the map. The magnetic contours in this area, irregular in shape, do exhibit a suggestion of a N-S trend. It is probable that these anomalies represent the southern extension of the strong fault, magnetically indicated to the north and which carries highly anomalous nickel values on ADD 6.

EVALUATION

Recent geophysical (magnetic) and geochemical (soil sampling for copper, molybdenum, zinc, silver and nickel) surveys by Pacific Northwest Geotech Ltd., on the Molly & Add Group of mineral claims, near Ashcroft, B.C., have demonstrated a high probability for the occurrence of valuable deposits of those metals, on these claims. The data from these detail surveys were supplemented with information from earlier, reconnaissance geological, geochemical and geophysical (magnetic and Induced Polarisation) surveys, to arrive at the conclusion that there are three principal systems of mineral

deposition on these holdings of Rea Petro Corp.

The three systems are postulated on patterns of soil anomalies, especially of copper and nickel, re-enforced by geological data and by deductions regarding structural features, especially faults, derived from geophysical indications. The three systems, or patterns, fall into two categories:- (1) fracture-filling hydrothermal vein formations carrying nickel and possibly silver and (2) copper-molybdenum deposits in and near the contact zone of intrusive diorite plugs with the invaded Cache Creek greenstones, predominantly quartz-sericite schists. Silver and zinc also may occur with the latter. On the Rea Petro holdings, there are two centres of mineralisation associated with diorite intrusives, one close to the Moly claim and the other on the ADD 8 claim.

An oval plug of intrusive diorite, about a mile long, strikes southwesterly across, or adjacent to the southeast corner of the Moly claim. Radiating north from the vicinity of that claim corner, a narrow band of elongate anomalies spreads out to cover an area 700m E-W by 400m N-S. The anomalies are open to the north and the east. The magnetic anomalies nevertheless continue 500m to the north boundary of the claim, where they are still open. The geochemical survey did not extend that far, however, and the association of soil anomalies with the magnetic ones indicates the desirability of continuing the soil survey to the north boundary of the claim.

The impressive anomalies of copper, molybdenum, zinc and silver appear to indicate mineralisation by solutions emanating from the intrusive plug on the south. They apparently moved through northerly-striking conduits (fractures, bedding planes, foliations, etc.) and then spread out, possibly along a set of cross fractures. Alternatively, solutions may have had their sources in a still deeper, subsurface portion of the intrusive and have risen up from it through channelways offered by the presumed intersecting fracture sets.

Some of the anomalies present very high values, 28, 40 and 50 times background. These especially high maxima are usually separate and scattered, however, without a regular build-up from surrounding anomalous values. This may indicate the area is one of residual soil, in which degradation of the bedrock resulted in a residual concentration of metallic elements in the remaining soil. Where transported glacial till forms the soil, metallics from the covered bedrock can reach the surface only as they are dissolved in the ground water and move up through the overburden to the surface, by capillary action. This procedure can result in a considerable attenuation of metallic content. It is consequently possible that a medium anomaly in an area of glacial overburden, may overlie a deposit more strongly mineralised than one producing stronger anomalies in an area of residual soil.

This area is a very promising one for copper, molybdenum, silver and possibly zinc. It requires further exploration,

first to continue the soil sampling to the north boundary of the Moly claim. Second, a careful evaluation of the soil situation to determine what areas of interest may be covered by residual soil. Third, an electrical survey to define the areas probably underlain by strong concentrations of sulphide minerals. The correlation of the data thus gathered, will serve as a valuable guide for follow-up drilling. Drilling should be done with core drills recovering an adequate core diameter (such as BQ) since this is fractured rock and a small diameter core will get poor recovery.

This same intrusive body is presumably responsible for another zone of promising anomalies. On Moly 2 claim, adjoining the south boundary of the just-discussed Moly claim, there is a band of arcuate anomalies in the 2S 1W unit of Moly 2. It extends, in a curve slightly convex to the west, from near the west end of the south boundary of Moly, over 500m southerly to near the east boundary of Moly 2. The maximum anomaly values are six and seven times background and are especially prominent for copper, molybdenum and silver, with zinc also present.

The southwestern tip of the exposure of the oval diorite intrusive described above, lies some 400 or 500 metres east of the arcuate anomalies just mentioned. They give the impression of having been formed in curved tension fractures probably created by the intrusive action of the underlying diorite magma. Mineralising solutions arising within the magma, made

their way upwards in those fractures, depositing their mineral loads as they ascended.

The anomalies do not form a continuous arc, but they are generally coincident, or adjacent to each other. The maximum values for all the metals are in the range of 6 to 7 times background. It is probable that, with closer approach to the source, the mineralisation will intensify and become more continuous. Deep diamond drilling should therefor be envisaged. Before drilling, however, an electrical survey should be applied in order to outline the zones more heavily mineralised with sulphides.

The second centre of mineralisation lies in the eastern part of ADD 8 claim, roughly 500m south of its north boundary. The source is presumably a dioritic intrusive, mapped several years ago by Bethlehem geologists, who showed its north contact extending E-W for some 500m about where the eastern part of Line 5+00S is now located. Numerous elongated contours, of copper and zinc anomalies and of high magnetic readings, extend north-northwesterly from the contact area. Copper values go up to 9 times background; zinc values, less abundant, rise to 6 times background. Silver and molybdenum anomalies are but few in number, are scattered and isolated and were not contoured.

The close association and parallelism between the soil anomalies and the magnetic highs, recall the similar situation described on the Moly claim. On ADD 8 the high magnetic

contours extend northerly, predominantly from the presumed contact zone, as do most of the copper anomalies. There is an extension of some copper and zinc values south, however, into the area probably underlain by the intrusive. This suggests zinc and copper mineralisation but very low in magnetite or pyrrhotite, either in cooling cracks in the outer portion of the intrusive, or in an engulfed inlier of Cache Creek beds.

The northwesterly soil anomaly contours on ADD 8, tie in with the corresponding contours on ADD 1 and 5, where they continue north onto ADD 2 and ADD 4. The overall length of soil anomalies is approximately 2,300 metres, extending from Line 8+00S on ADD 8, to Line 15+00N on ADD 2 and 4. The width is some 600 to 800 metres.

Copper highs extend over a length of about 1,800m, with the most impressive development on ADD 5 and ADD 2 & 4, showing peak values of 12 to 19 times background. Silver values reflect the copper distribution, with the best development on the same claims, showing maximum values of 5 to 7 times background. The distribution of zinc values is more restricted, and the best showings are on ADD 2, with peak values of 7 to 13 times background. Molybdenum maxima, though strong, are mainly isolated and scattered and extend some 500m beyond the copper anomalies, to Line 15+00N. Their distribution is otherwise similar to that of the copper ones. Top molybdenum readings were 8 to 20 times background.

Noranda geologists mapped a southeasterly plunging synclinal fold at the south end of the boundary between ADD 2 and ADD 4. The formations in the south limb of this fold strike towards the intrusive mass of diorite on ADD 8. It is reasonable to suppose that mineralising solutions emanating from that intrusive, found northwesterly channelways in the limb of the syncline, where the folding had cracked and broken the Cache Creek beds. The hydrothermal solutions migrated along these northwesterly trending breaks, depositing minerals therein, until they encountered a system of N-S faults transecting the northwestern, terminal portion of the syncline. There they continued their migration and mineral deposition along these northerly fractures until the mineral load was depleted.

That portion of these impressive anomalies occurring in the southern part of ADD 2 & 4 and extending into ADD 5, lie in the copper soil anomalous area outlined by the Noranda and Bethlehem reconnaissance surveys. Noranda's electrical (I.P.) survey confirmed the presence of conductive formations beneath the soil anomalies, at this location. That reconnaissance work, however, failed to define the shapes and trends of the anomalies. The present detail work conducted by Pacific Northwest Geotech on behalf of Rea Petro, has yielded data which now make it possible to define the shapes and trends of the anomalies, evaluate their significance and permit speculations on the origins of the mineralisation and

on the structural features influencing migration of the mineralising solutions and the deposition of their mineral loads.

It now becomes necessary to apply electrical methods of exploration to outline those zones underlain by conductive sulphide mineralisation, in order to select targets for diamond drilling.

The third centre of mineralisation lies on ADD 6. This claim is crossed, north and south, by a series of elongated soil anomaly contours. Copper is quite minor, zinc is only moderately impressive, molybdenum is reasonably important, silver is outstanding and nickel is the most impressive.

In the eastern third of the claim (which is a 4-unit one, 2x2) the particularly prominent contours, trending slightly west of north are nickel with 6 to 10 times background as peak values, molybdenum with top readings of 5 to nearly 10 times background and zinc, with a maximum of 12 times background. In this portion of ADD 6, silver and copper are negligible. A mineral-bearing structure striking slightly east of south is implied, either serpentinous or nickeliferous, or both and with associated molybdenum and zinc. The association of these metals with nickel is unusual and suggests two different systems, or episodes of mineralisation, in this band of anomalies.

In the middle of the claim, some 300m west of the above bands of contours, lies a large and impressive nickel anomaly,

nearly 300m N-S by 125m E-W, with top readings of 11 to 13 times background. A scattering of smaller nickel anomalies lies just to the northwest, of which one, along with small copper and weak molybdenum readings lie in the north end of an impressive silver anomaly.

This band of silver anomalies extends, from close to the NW corner of the claim, for over 800m east-of-south to the south border in the vicinity of station 10+00W. Top values are from 5 to 20 times background. The anomaly is about 25m wide and is still open to the south.

Silver usually accompanies copper, zinc or lead. Except for the small copper anomaly at the north end, the southwards extension of this anomaly is devoid of any accompany readings for copper or zinc. No mention seems to have been made of observing lead minerals, especially galena (lead sulphide) the usual ore of lead, in this area. The Bethlehem reconnaissance survey did report a few, scattered lead anomalies, however. One, small group of threshold and anomalous lead values was observed just west of the magnetic and I.P. anomalies on what is now ADD 6. They might be associated with the present silver anomaly. More intensive investigation on this score is advisable.

The area of strong soil anomalies on ADD 6 corresponds with the expanded zone of magnetic highs on the magnetically indicated N-S fault, as mapped by the Noranda geologists. They did not test their soil samples for nickel. They did

make I.P. observations in this area, however, and noted that the strongly magnetic N-S band, interpreted as a fault, was also electrically conductive. They sounded the valid warning that this conductivity could be due to sulphides, or to graphite.

The ADD 6 claim should be subjected to detailed electrical investigation as a preliminary to selecting the drilling targets. Attention should be given to the effort to determine if there are two or more separate N-S structures and to define them. The old soil samples should be tested for lead, or new ones gathered.

The strike of this major fault system, as magnetically defined, carries it south to the vicinity of the west end of ADD 5 and probably across the west end of ADD 8.

West of BL 3, on ADD 8, there is a scattering of nickel anomalies which are prominent between Lines 1+00S and 9+00S, with maxima of 6 to 12 times background. To the south border, they are weaker, and at the north border they decrease to threshold, the values they show on the west end of ADD 5. A few, small zinc anomalies in the NW corner of ADD 8, show top readings of 4 times background. There are a few, strong silver ones in this area, however, with a maximum value of 8 times background. Some strong, but small molybdenum anomalies (top reading 18 times background) also occur in the NW corner of the claim. In the western end of the claim there are only four, minor copper anomalies. Only the molybdenum anomalies on the west end of ADD 8, continue to the north onto ADD 5 with any significant showings.

The apparent trend of these anomalies is a little west of north, rather than the N-S orientation of the big, magnetically-defined fault. They may be on a cross structure, or the fault may have slightly changed orientation in this area. In either event, there is a weakly mineralised structure probably underlying these anomalies, which would warrant a few lines of electrical surveys when the major showings are being further defined in preparation for drilling.

This detail survey by soil sampling and magnetic techniques, has outlined four principal areas of mineralisation, related to three, probable centres of mineralising activity. They are located on the Moly, Moly 2, ADD 6, and on ADD 2, 4, 5, & 8 claims. The metals of principal interest appear to be copper, silver, nickel and molybdenum, with zinc in a minor role, but nevertheless of possible interest.

Further studies by electrical techniques is essential, before picking targets for drilling. This will define the positions of underlying, sulphide bodies which would be the drill targets. This is especially desirable in view of the possible displacement, as by down-hill creep and drainage, of the soil anomalies from their expected position of vertically above the causative mineralisation. This is an extremely interesting area and deserves careful and meticulous exploration.

WORK PROGRAM AND COSTS

The geochemical and geophysical surveys carried out on the Moly & ADD Group of mineral claims, consisted of a

magnetic survey on ADD 8 and soil sampling surveys on Moly, Moly 2, ADD 1-8 and ADD Fraction. The gathering of soil samples on the Moly claim is not included in this work program, but the analysis of the samples is. The reason for the exclusion of the sampling program is, that it was conducted prior to the commencement of the anniversary year which is the concern of this report. The analyses of the samples, however, was not made until the field work now being reported, had started.

The field work was carried out between August 1st, 1981 and December 31, 1981, by Pacific Northwest Geotech Ltd., of Kamloops, B.C. The field crew was under the supervision of Keith D'Angelo, Field Supervisor and Director of Pacific Northwest Geotech. The crew consisted of Brian Cross, Bruce Vogel, and Paul Vogel for the geochemical work and Brian Muloin, assisted by Brian Cross, for the magnetic survey.

Soil samples were taken, from the B horizon at a depth of some 20 to 35cm and sent to Acme Analytical Laboratories Ltd., in Vancouver, for analysis. The -80 mesh fraction was dissolved in hot, dilute aqua regia and analysed by atomic absorption, for copper, molybdenum, zinc, silver and nickel. Pacific NW billed Rea Petro for 4,458 samples.

In preparation for the sampling and magnetic program, two grid systems were laid out. The first covered Moly 2 and ADD 1-7 and ADD Fraction. Lines spaced 100m apart, N-S, were run east and west from a N-S Base line and were verified and corrected at two subsidiary Base Lines. The second grid covered

ADD 8. Grid lines spaced 100m apart, N-S, were run west from a N-S Base Line along the east boundary of the claim and were verified and corrected at two subsidiary Base Lines to the west. Stations were established at 25m intervals along grid and base lines. A total of approximately 104km of line was laid out. The lines were correlated with claim posts and claim boundaries, by compass and Topofil.

In addition to the above-mentioned lineage, Base Line 1 was extended north from the south boundary of the Moly claim, at Line 15+00N, for 1.1km to Line 26+00N. It was also sampled, with 45 samples gathered and assayed. These were not entered on the Moly map as the line lies on ground included in a Land Grant to which the mineral rights may accrue. There were no copper, zinc or nickel anomalies on this line, only a threshold contour or two. One, small molybdenum anomaly showed between Lines 21+00 and 22+00N. Six silver anomalies were recorded between Lines 16+00 and 19+00N, with four of them between Lines 17+00N and 18+00N, close to a silver anomaly recorded on Line 17+00N.

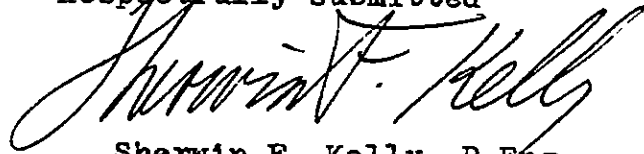
The expenditures billed to Rea Petro by Pacific Northwest Geotech Ltd., were:-

Establishing boundaries, Base Lines and grid lines.....	\$ 1,831.80
line cutting, flagging and gathering soil samples (4458 samples).....	21,539.25
Assaying samples.....	17,783.95
Magnetometer survey, ADD 8.....	3,960.00
Drafting and printing.....	1,400.00
Cost of report.....	<u>1,200.00</u>
	\$47,715.00

Of the cost of the report on this property, \$300.00 was allocated for the separate report on the Moly claim magnetic survey, covered in a report dated May 21, 1982. Substituting the balance of \$900, for the \$1,200 above, leaves a total of:- \$47,415.

Of the total assessment expenditures, the sum of \$45,000 was requested to apply to the eleven claims. That leaves a balance of \$2,715 which might be applied at a later date.

Respectfully submitted



Sherwin F. Kelly, P.Eng.
Geophysicist & Geologist

Box 277
Merritt, B.C.
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August 5, 1982

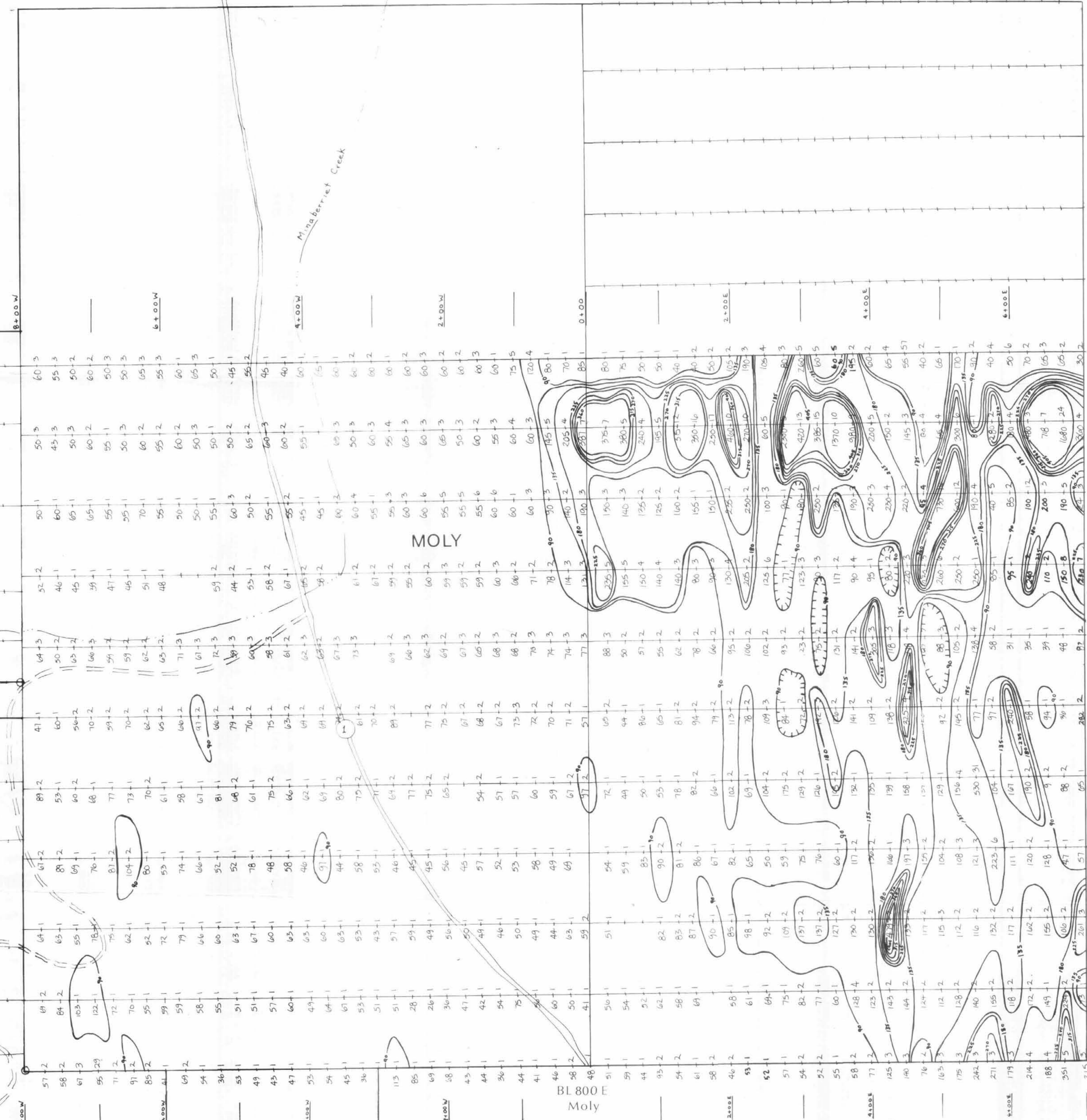


ADD 7

MOLY

MOLY 2

Mingberran Creek



30:00N

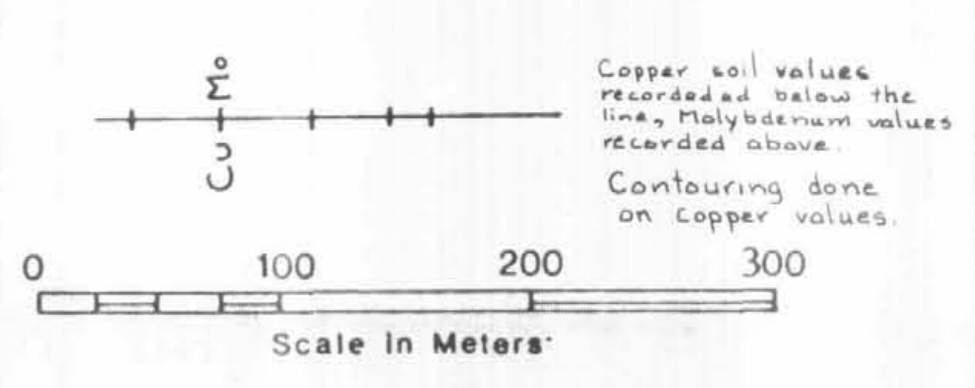
25:00N

20:00N

15:00N

Moly Claim

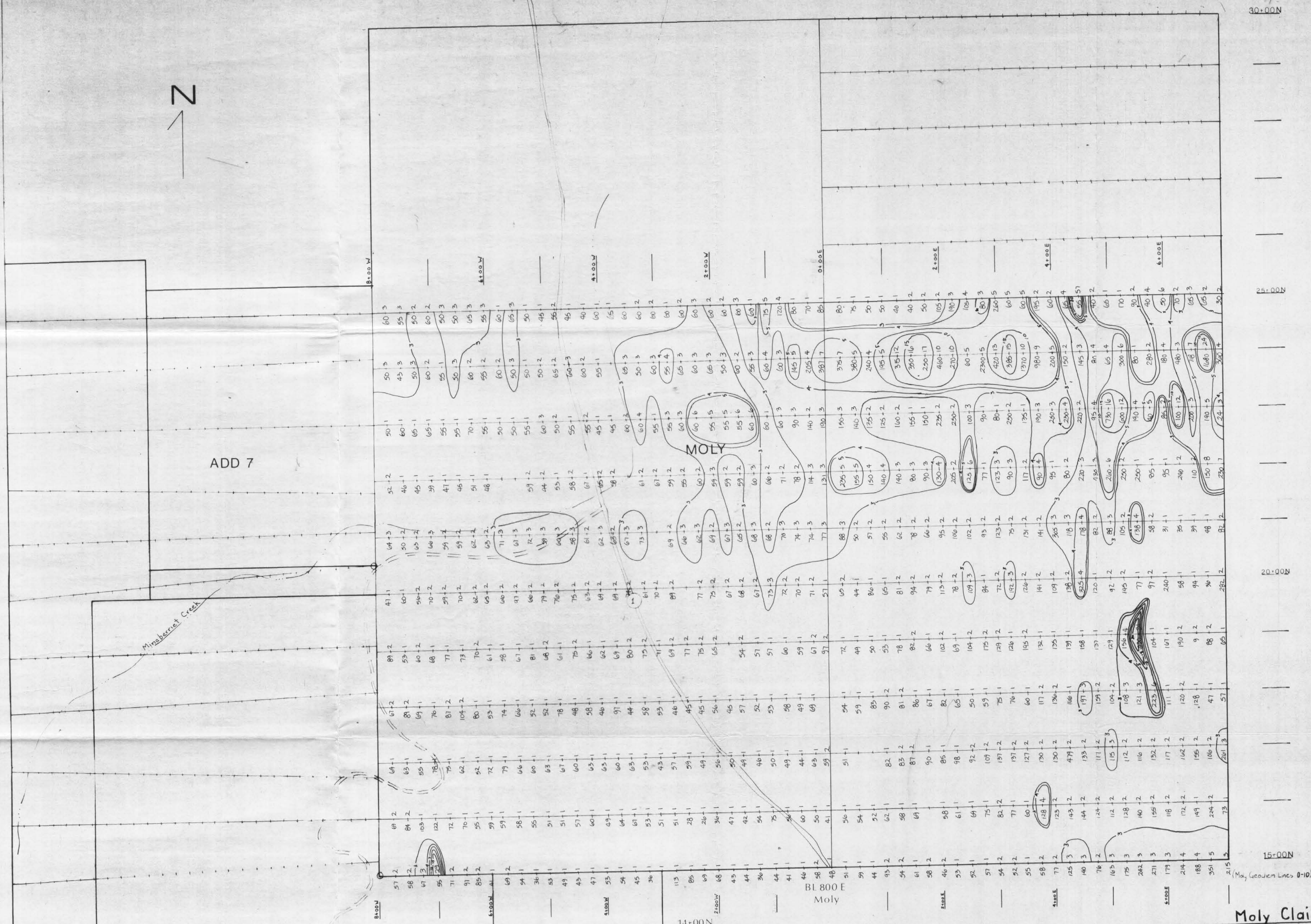
Copper, Molybdenum Concentrations (PPM)
 Geochem Survey Fig.3
 REA PETRO CORP
 KAMLOOPS B.C.



Date by Pacific NW Geotech Ltd
 Drawn by E King Contoured by L. Trout
 Scale 1:3125
 Date Contoured May, 1982
 NTS 92 III
 Contour Interval: 90, 135, 180, 225, 270, 315, 360, 405, ppm in Copper
 Background 45

Map accompanies Rea Petro Corp.
 assessment report by
 Shevlin E. Kelly, P. Eng. Aug. 6, 1982.
 Fig.3

MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
 10513



30-00N
25-00N
20-00N
15-00N



ADD 7

MOLY

Minaabana Creek

MOLY 2

Moly Claim

BL 800 E
Moly

Pacific NW Geotech Ltd

Copper, Molybdenum Concentrations (PPM)
Geochem Survey Fig. 4
REA PETRO CORP
KAMLOOPS M.D.

Molybdenum soil values recorded above the line, Copper values below.
Contouring done on Molybdenum values.

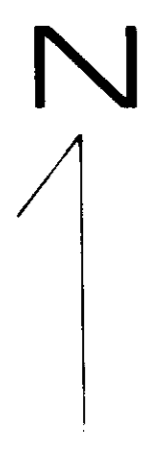
CU-MO

0 100 200 300
Scale in Meters

Roads
Streams

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10513

Data by Pacific NW Geotech Ltd
Drawn by E King, Contoured by L. Trout
Scale 1:3125
Date: Contoured May, 1982
NTS 92 III
Contour Interval 3, 4, 5, 10, 15, 20 ppm in Moly Background 1



ADD 7

Ministerial Creek

MOLY 2

MOLY

BL 800 E
Moly

Moly Claim

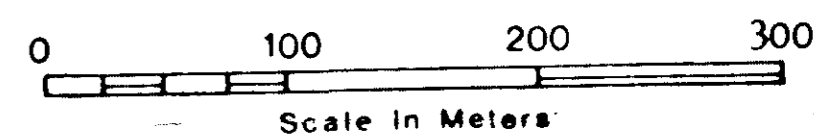
Zinc, Silver
Concentrations (PPM)

Geochem Survey Fig. 5

REA PETRO CORP

KAMLOOPS M.D.

Zinc soil values recorded below the line, Silver values above. Contouring done on Zinc values.



Roads

Streams

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10513

Data by Pacific NW Geotech Ltd
Drawn by E King, Contoured by L. Trout
Scale 1:3125
Date Contoured May, 1982
NTS 92 I II
Contour Interval: 200, 300, 400, 500, 600, 700, 800, 900, 1000 p.p.m. in Zinc Background: 100.



ADD 7

MOLY 2

Minaberrilet Creek

14+00N

11+00N

9+00N

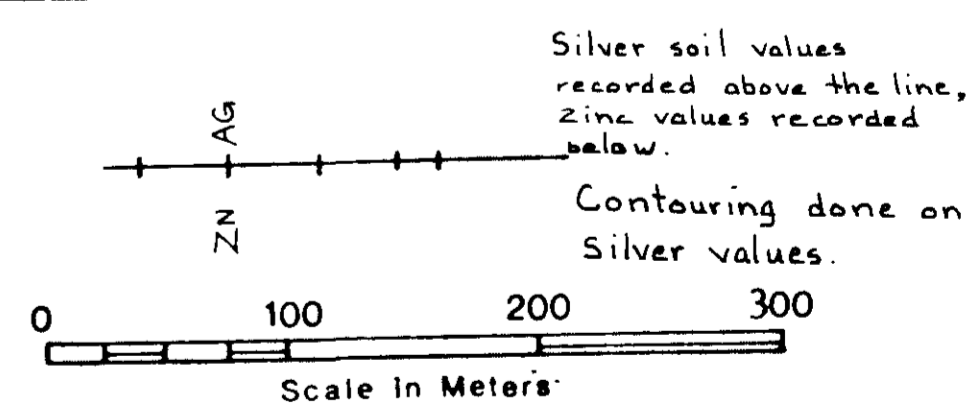
BL 800 E
Moly

Moly Claim

Zinc, Silver
Concentrations (PPM)

Geochem Survey Fig. 6

REA PETRO CORP
KAMLOOPS B.C.



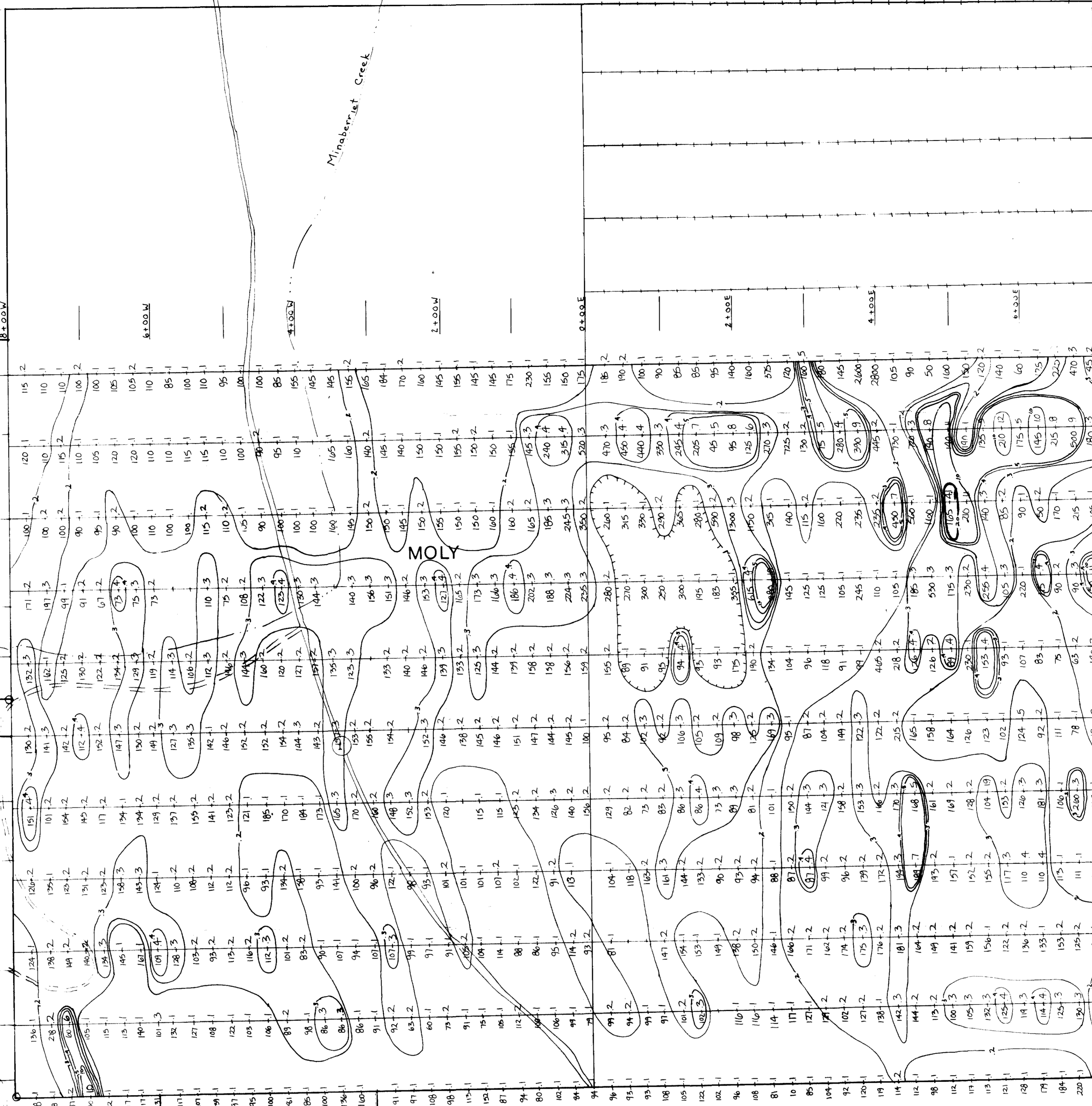
Roads

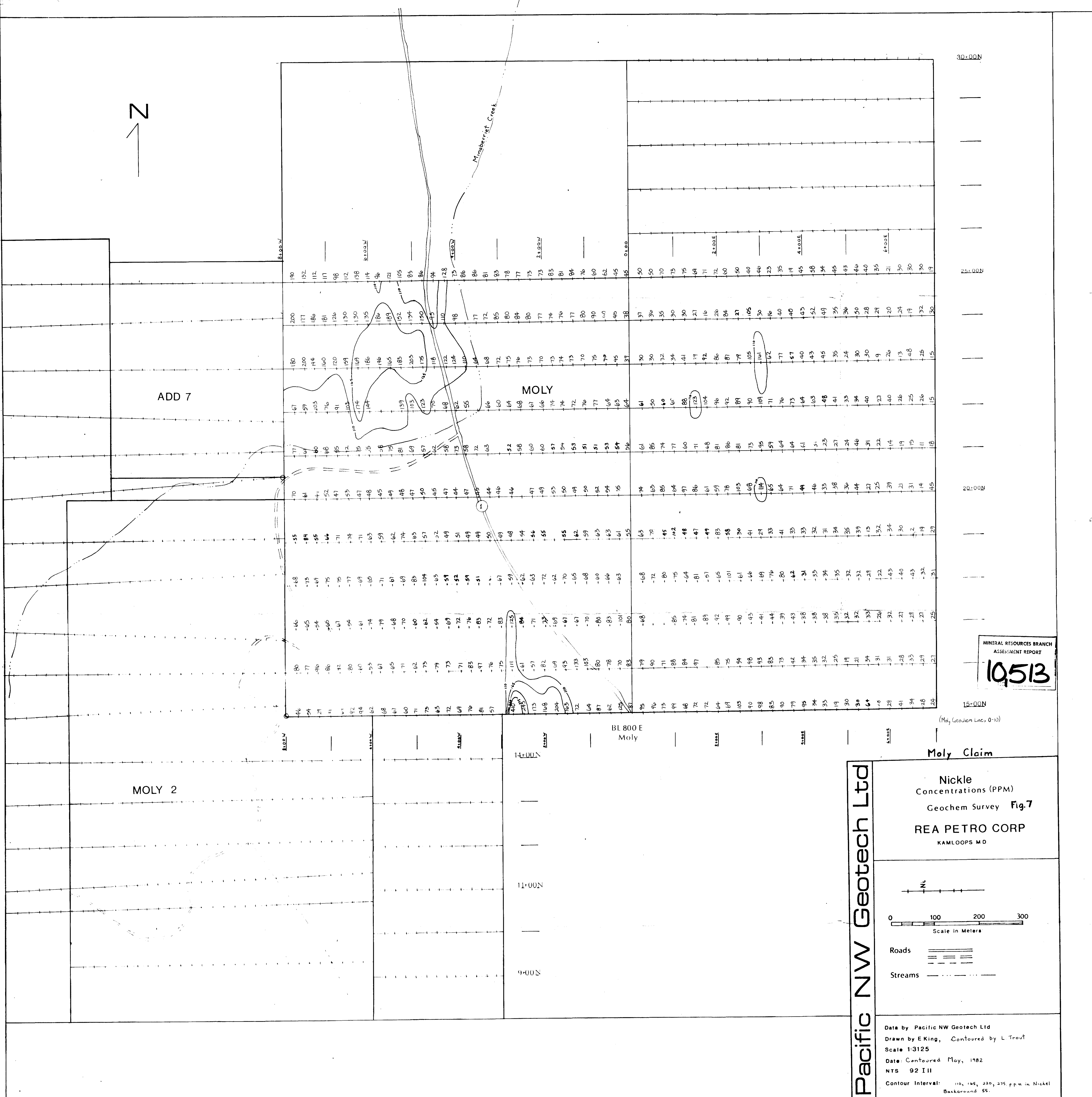
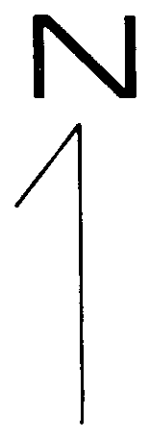
Streams

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
1053
NO.

Data by Pacific NW Geotech Ltd
Drawn by E King, Contoured by L. Trout
Scale 1:3125
Date: Contoured May, 1984
NTS 92 I II
Contour Interval: 2, 3, 4, 5, 10, 20 ppm in Silver
Background .1

30+00N
25+00N
20+00N
15+00N





ADD 7

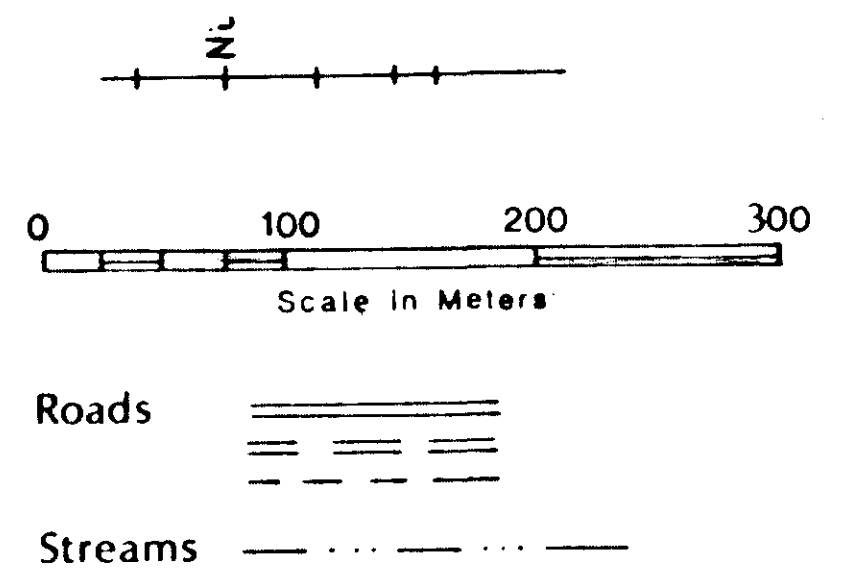
MOLY

MOLY 2

BL 800 E
Moly

Moly Claim

Nickel
Concentrations (PPM)
Geochem Survey **Fig. 7**
REA PETRO CORP
KAMLOOPS MD



Date by Pacific NW Geotech Ltd
 Drawn by E King, Contoured by L Trout
 Scale 1:3125
 Date: Contoured May, 1982
 NTS 92 II
 Contour Interval: 110, 165, 220, 275 p.p.m in Nickel
 Background 55.

MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
10513

NICKEL
Concentrations (PPM)
Geochem Survey Fig. 8

Distance Between Lines 100 Meters
Distance Between Samples 25 Meters

Nickel (ppm)

Scale in Meters

Roads

Streams

REA PETRO CORP.
MOLY 2 ADD GROUP

Data by: Pacific NW Geotech Ltd.
Drawn by: Rowland + L.T. Foot
Checked:
Scale: 1:5125 Map Reference: NTS 92 I/II
Date: 10/01 Revised 7/82
Sources:
Contour Intervals: 10, 15, 20, 25, 30 ppm in Nickel
Background: 96

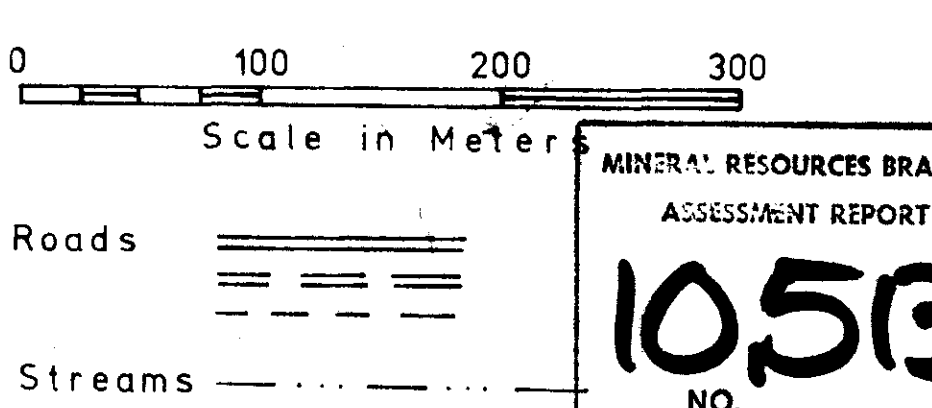
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,513



COPPER, MOLYBDENUM Concentrations (PPM) Geochem Survey Fig. 9

Distance Between Lines 100 Meters
Distance Between Samples 25 Meters

Contouring done
Copper (ppm) for Copper values
Moly (ppm)



Date by Pacific NW Geotech Ltd.
Drawn by ROUSAL + L. TROUT
Checked
Scale 1:5125 Map Reference: NTS 422/1
Date 10/81 Revised 7/82
Sources
Contour Intervals: 90, 135, 180, 225 ppm in Copper
Background 4s



COPPER, MOLYBDENUM Concentrations (PPM) Geochem Survey Fig.10

Distance Between Lines 100 Meters
Distance Between Samples 25 Meters

2 58 1 47 2 24
Copper (ppm)
Moly (ppm)

Contouring done for Molybdenum values.

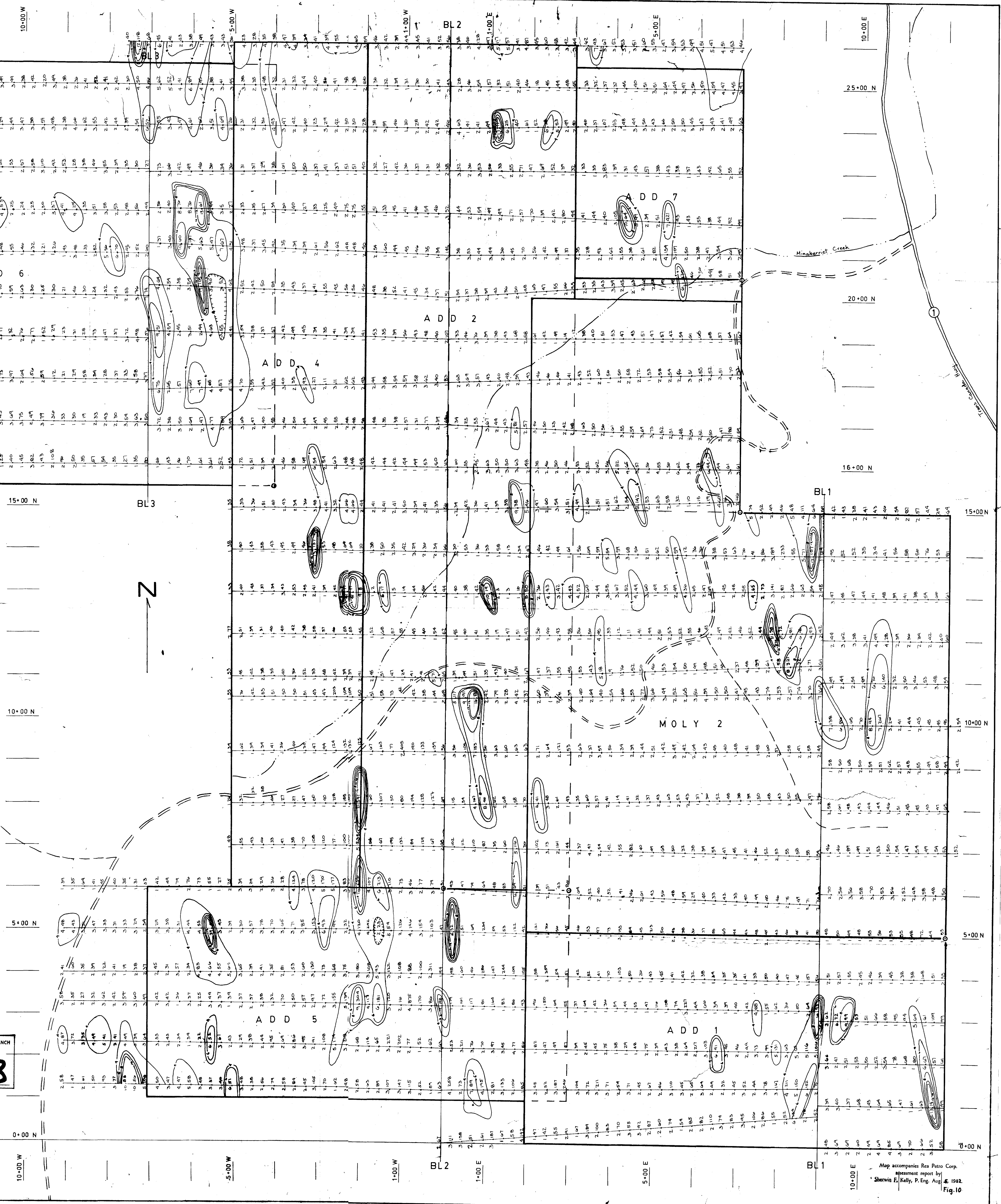
Scale in Meters
0 100 200 300

Roads
Streams

MINERAL RESOURCES BRANCH ASSESSMENT REPORT
105B

REA PETRO CORP.
MOLY 2 - ADD GROUP

Data by: Pacific NW Geotech Ltd.
Drawn by: ROUBAL + L. Trout
Checked
Scale: 1:5125 Map Reference NTS 92 2/11
Date: 10/81 Revised: 7/82
Sources
Contour Intervals: 4, 6, 8, 10, 12 ppm in Moly Background: 2



ZINC, SILVER
Concentrations (PPM)
Geochem Survey Fig. II

Distance Between Lines 100 Meters
Distance Between Samples 25 Meters

Contouring done
for Silver values.
Zinc (ppm)
Silver (ppm)

Scale in Meters
0 100 200 300

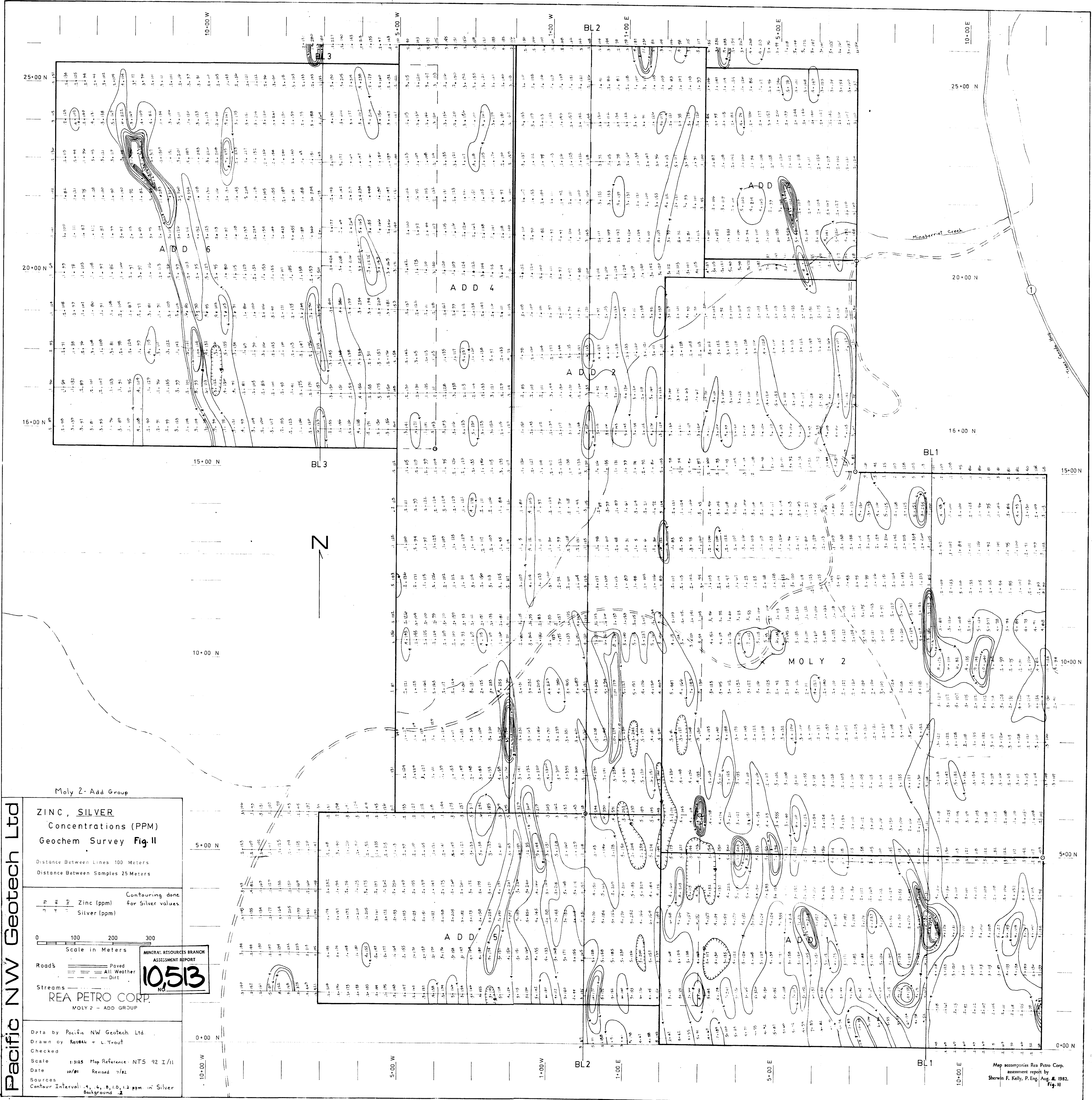
Roads
Paved
All Weather
Dirt

Streams

REA PETRO CORP.
MOLY 2 - ADD GROUP

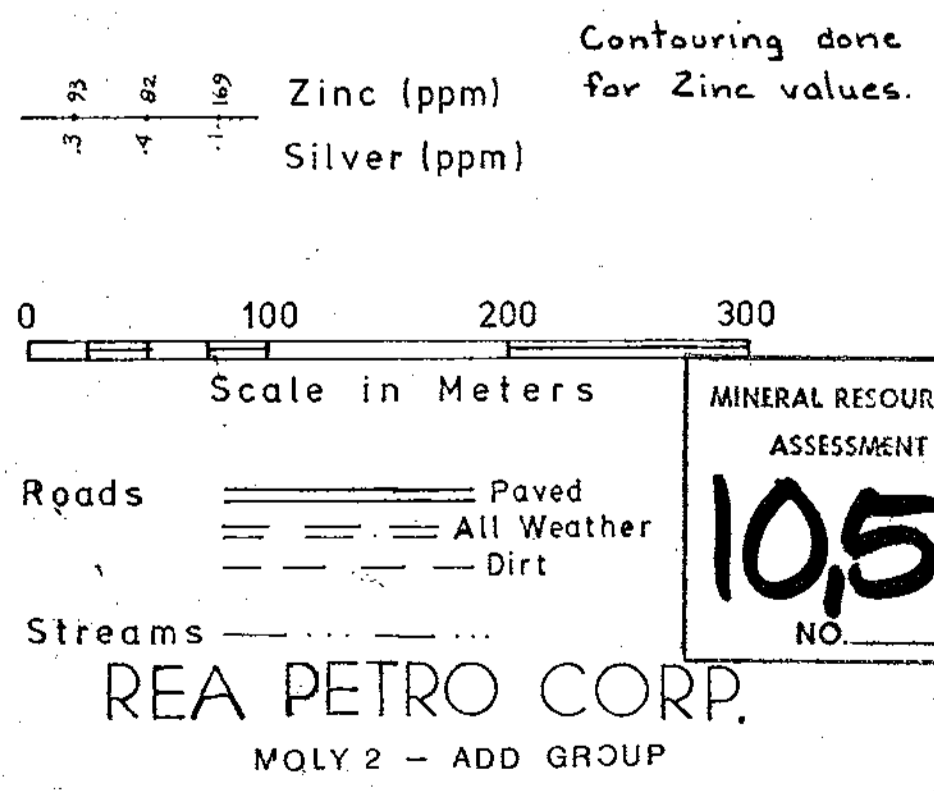
Data by Pacific NW Geotech Ltd
Drawn by Rouhal + L. Trout
Checked
Scale 1:3125 Map Reference: NTS 92 I/11
Date 10/81 Revised 7/82
Sources
Contour Interval: 4, 6, 8, 10, 12 ppm in Silver
Background 2

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,513
NO.



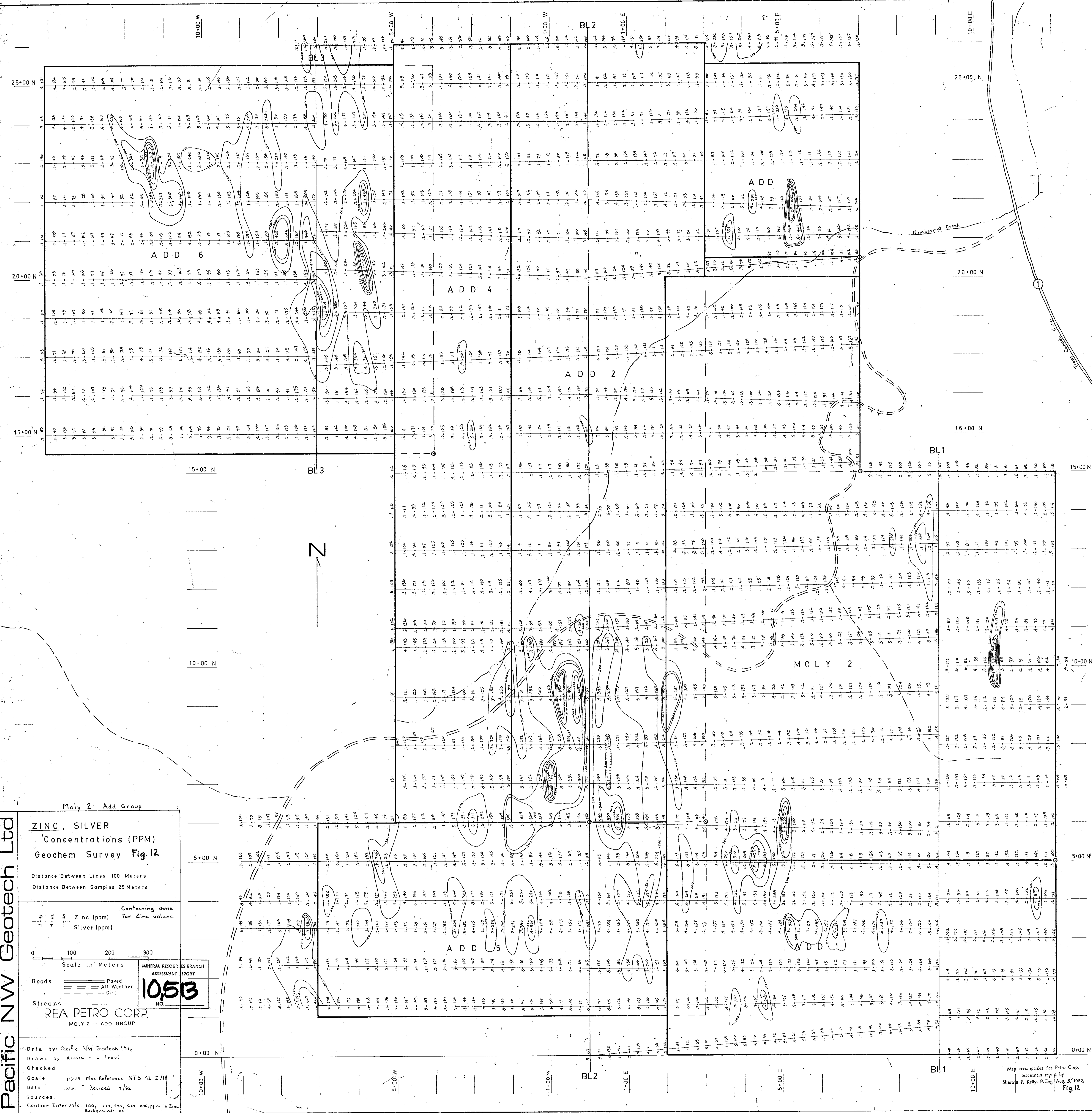
ZINC, SILVER Concentrations (PPM) Geochem Survey Fig. 12

Distance Between Lines 100 Meters
Distance Between Samples 25 Meters



REACTOR CORP.
MOLY 2 - ADD GROUP
Data by: Pacific NW Geotech Ltd.
Drawn by: ROBERT L. TRAUT
Checked:
Scale: 1:3125 Map Reference: NTS 92.1 I/R
Date: 10/01 Revised: 7/82
Source(s):
Contour Intervals: 200, 200, 400, 600, 800 ppm in Zinc
Background: 100

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,53
NO.

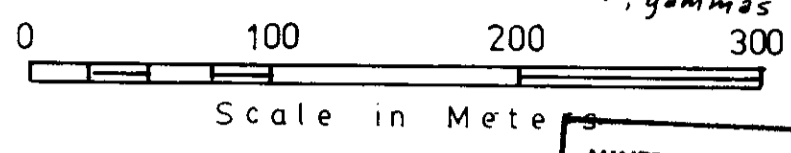


MAGNETOMETER SURVEY

Fig. 13

ADD 8 CLAIM
REA PETRO CORP
KAMLOOPS M.D.

Total Field Magnetometer Survey:
The diurnal drift is corrected by re-reading
of previously read stations in a closed loop sequence
estimated error of $\pm 10\%$
contour interval is 100 Y, gammas

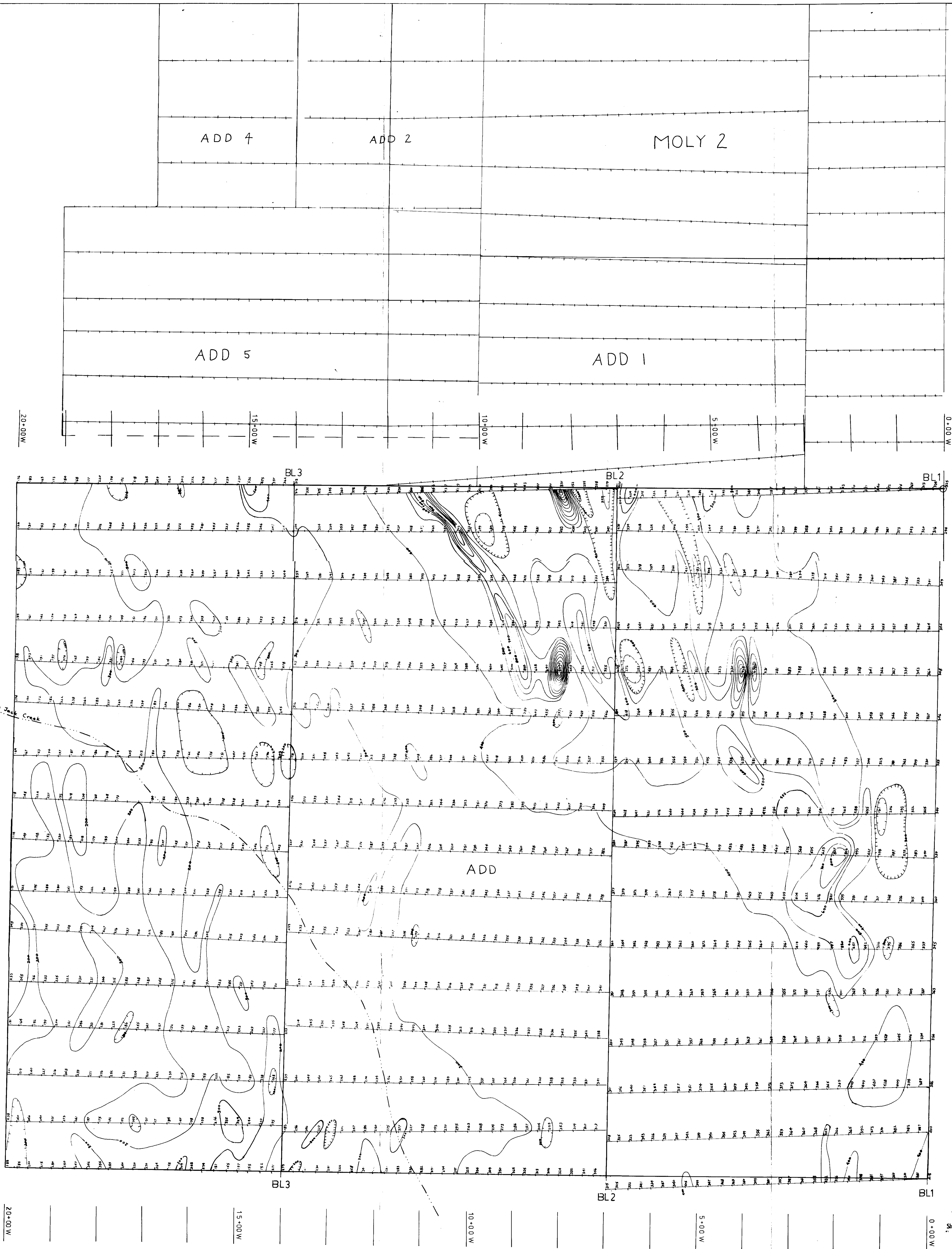


Roads
Streams

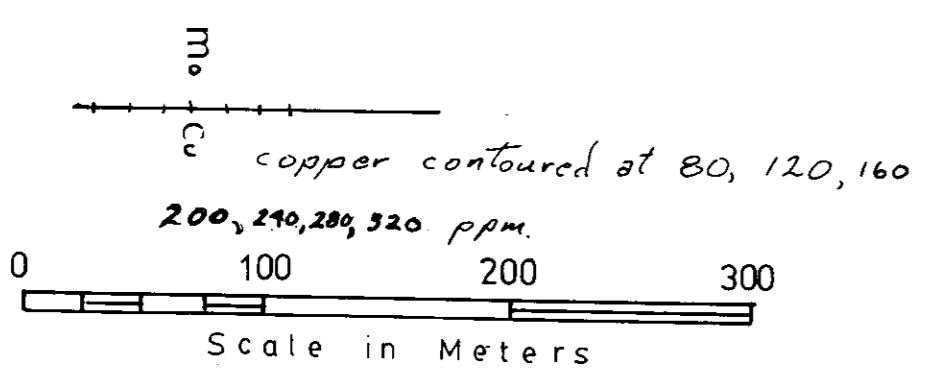
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
195B

NO magnetic
*873 value in gamma
intensity with 57000 to be added
ie. *87373
*543 where otherwise indicated value is 56,543
or 877 is 58,277 Y

Data by: PACIFIC NW GEOTECH;
B.T. MULLON with a Suiter MP2, B CROSS with a
Geometrics GOMAG
Drawn by: E. King, intensity values and contouring
by B.T. MULLON
Scale: 1:5125
Date: 11/12/81, Full survey Nov 22, 23, 24, 1981
N.T.S. 921.11

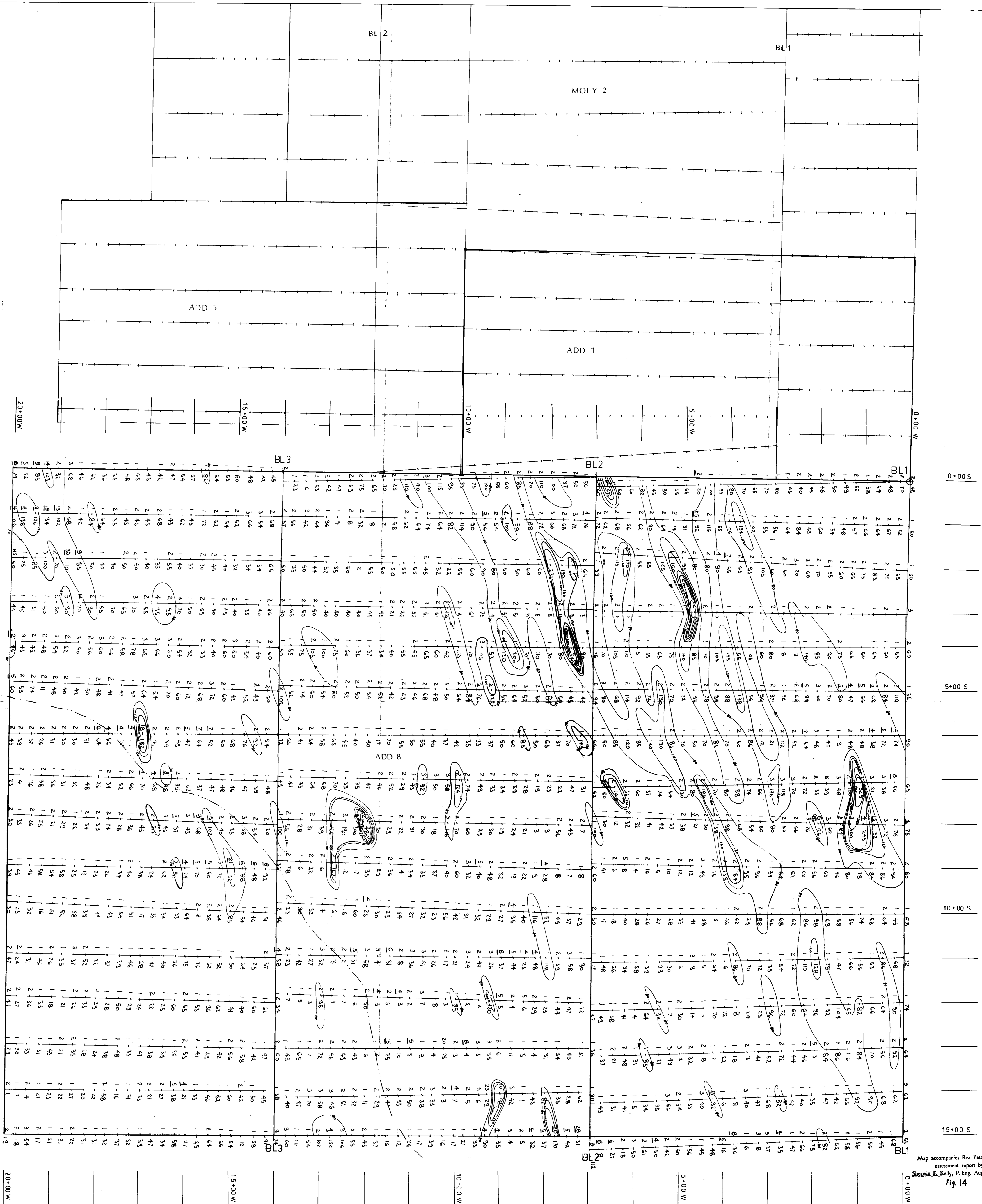


COPPER, MOLYBDENUM
Concentrations (PPM)
Geochem Survey
ADD 8 CLAIM
REA PETRO CORP
KAMLOOPS B.C.
Fig. 14



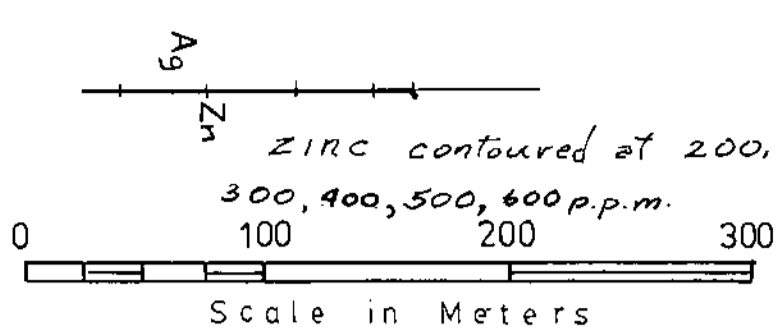
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 1053

Data by Pacific NW Geotech
Drawn by E. King
Scale 1:3165
Date 11/14/81
N.T.S. 921 II
Contoured by Bryan T. McLean 12/81
Revised July 82
Background: 40ppm for Copper, 1ppm for Molybdenum



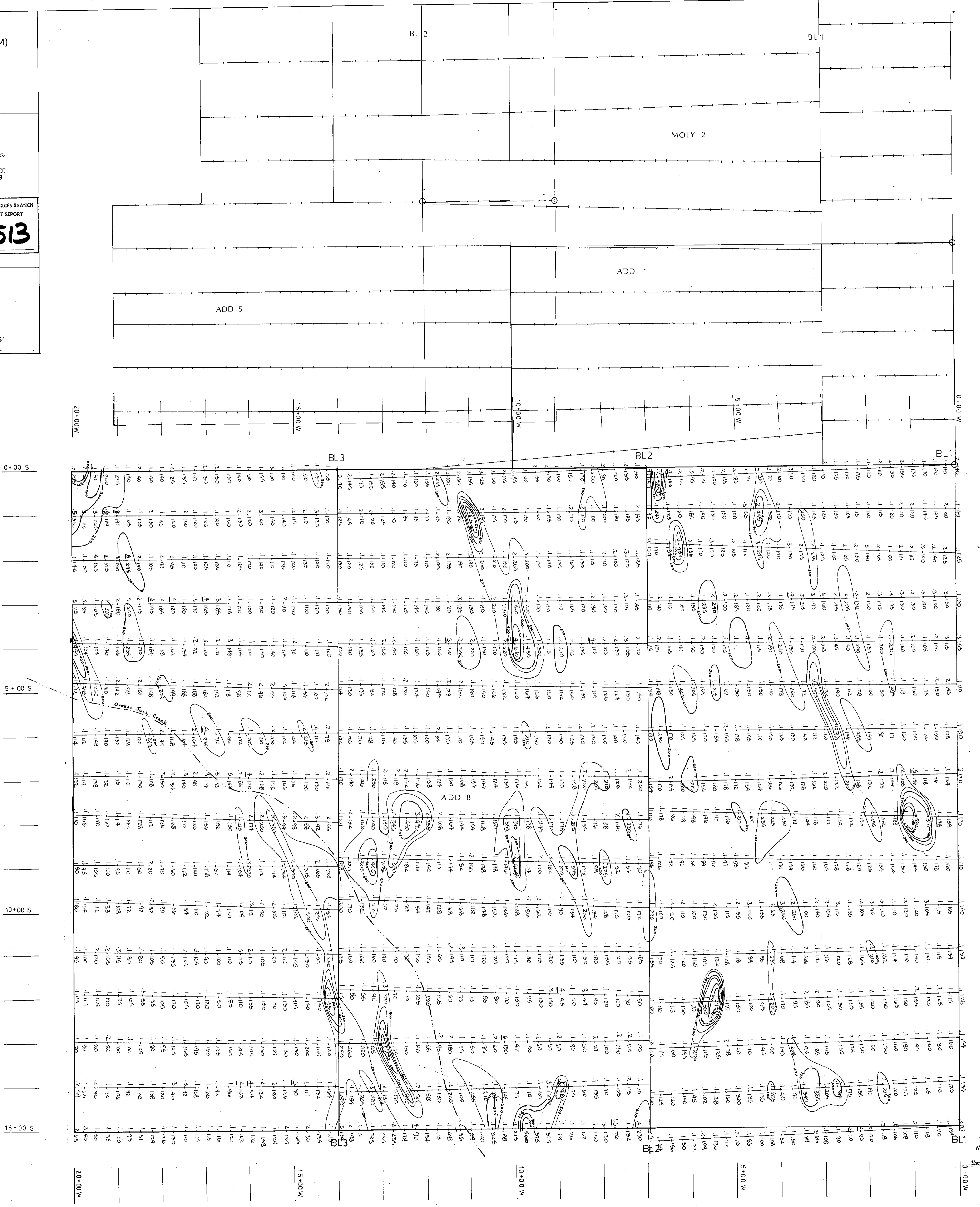
ZINC SILVER
Concentrations (PPM)
Geochem Survey
ADD 8 CLAIM
REA PETRO CORP
KAMLOOPS M.D.

Fig. 15



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,513
NO.

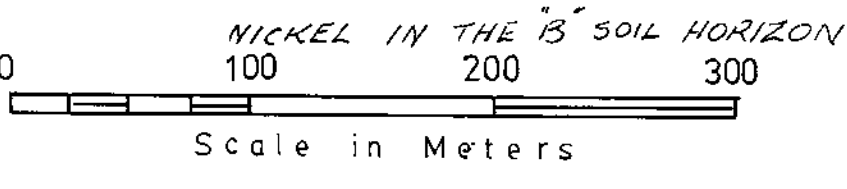
Data by PACIFIC NW GEOTECH
Drawn by E King
Scale 1:5125
Date 11/17/81
N.T.S. 921.11
Contouring by: Bryan T. Maloin 12/81
Revised July 82.
Background: 100ppm in Zinc, 1 ppm in Silver



NICKEL
Concentrations (PPM)
Geochem Survey
ADD 8 CLAIM 3S*4W
REA PETRO CORP
KAMLOOPS MD

Fig. 16

CONTOURS AT: 110, 165, 220, 275, 330, 385, 440 P.P.M.



Roads
Streams

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
10,513
NO.

Data by PACIFIC-NW GEOTECH

Drawn by E King

Scale 1:3125

Date 11/14/81

N.T.S. 92 1: 11

CONTOURING BY: Bryan T. Melin B.S., B.Ed.
Revised July 1982.
Background: 55 P.P.M.

