

LOG NO:	1129	ED.
ACTION:		
FILE NO:		

ANGEL CLAIMS

**REPORT ON RECONNAISSANCE GEOCHEMICAL
SAMPLING AND GEOLOGICAL MAPPING**

ANGEL 1, 2, 3, 4, 5, 6, 7 & 8 CLAIMS

LILLOOET MINING DIVISION

NTS MAP SHEET 92J 12E

50°35'North 123°31'West

AUTHOR: R. Jordan P.Eng.

OPERATOR: R. Jordan and Associates Ltd.

OWNERS: Angel 1, 2, 4, 5, 6, 7 & 8
- R. Jordan and Associates Ltd. 50%
- P. Jordan 50%

Angel 3
- P. Jordan 100%

November 1989

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

19,331

TABLE OF CONTENTS

	Page
1.0 SUMMARY	1
2.0 INTRODUCTION	2
2.1 Location and Access	2
2.2 Physiography and Geomorphology	2
2.3 Claim Description and Previous History	4
2.4 1988 and 1989 Exploration	6
3.0 GEOLOGY	7
3.1 Regional Geology	7
3.2 Claim Geology	7
4.0 GEOCHEMISTRY	9
4.1 Soils	9
4.2 Field Program	9
4.3 Analytical Techniques	10
4.4 Assay Results	10
5.0 CONCLUSIONS AND RECOMMENDATIONS	11
6.0 REFERENCES	12
7.0 STATEMENT OF EXPENDITURES	13
8.0 AUTHOR'S QUALIFICATIONS	14

LIST OF TABLES AND FIGURES

		Page
Figure 1	Index Map	Frontispiece
Figure 2	Claim and Sample Location Map	Back Pocket
Figure 3	Geological Map	Back Pocket
Figure 4	Map of Gold Assays	Back Pocket
Figure 5	Map of Silver Assays	Back Pocket
Figure 6	Map of Zinc Assays	Back Pocket
Figure 7	Map of Lead Assays	Back Pocket
Figure 8	Map of Copper Assays	Back Pocket
Figure 9	Map of Iron Assays	Back Pocket
Figure 10	Map of Arsenic Assays	Back Pocket
Figure 11	Map of Antimony Assays	Back Pocket
Figure 12	Map of Manganese Assays	Back Pocket
Figure 13	Map of Potassium Assays	Back Pocket
Table 1	Sample Locations and Descriptions	15 - 17
Table II	Listing of 1988 Sample Results	18 - 20
Table III	Listing of 1989 Sample Results	21 - 26
Table IV	Analytical Methods	27 - 28

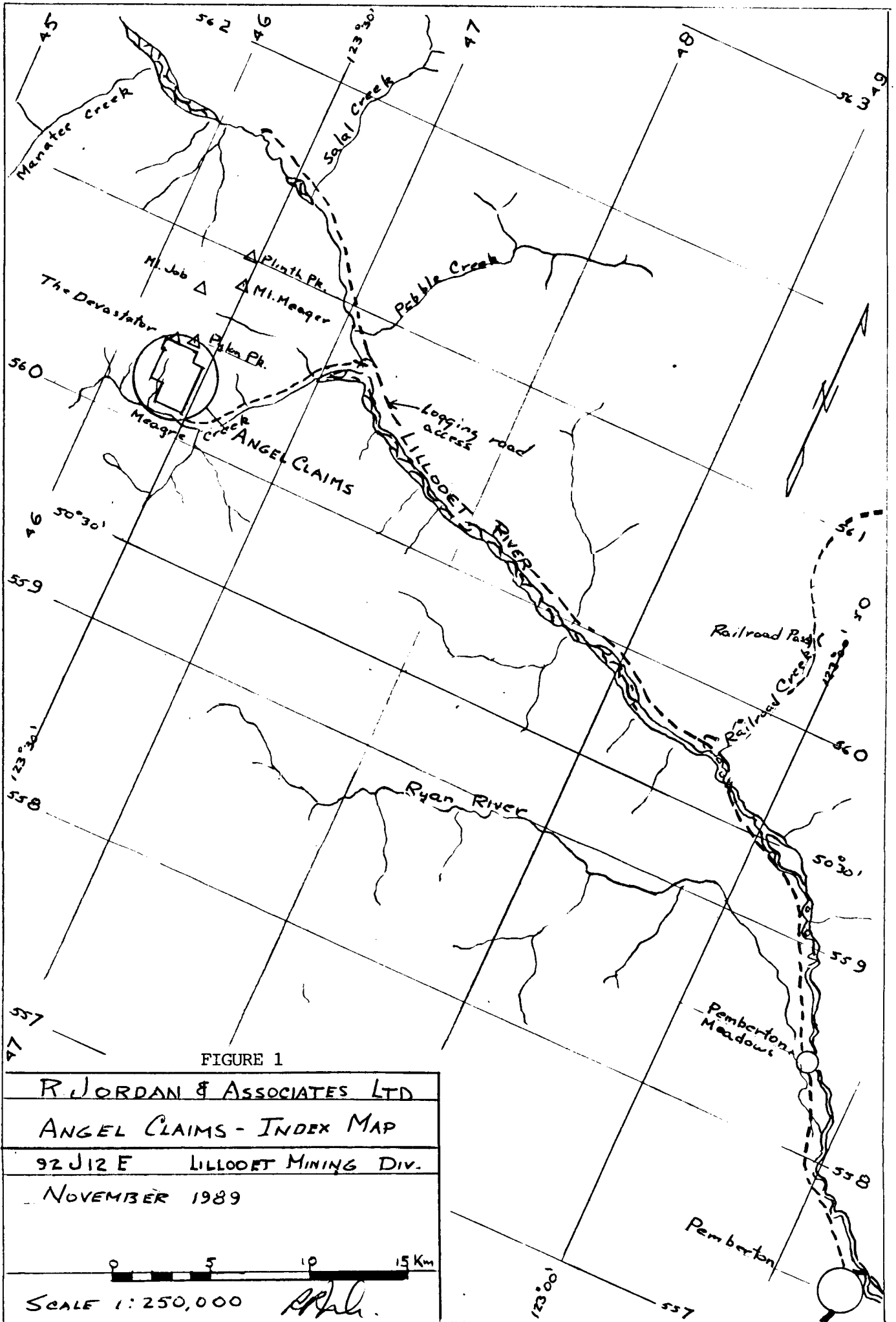


FIGURE 1

R. JORDAN & ASSOCIATES LTD
ANGEL CLAIMS - INDEX MAP
92 J 12 E LILLOOET MINING DIV.
NOVEMBER 1989
SCALE 1:250,000 <i>R. J. Jordan</i>

1.0 SUMMARY

The Angel 1, 2, 4, 5, 6, 7 & 8 claims, 17 units in all, were staked in September 1988. An additional claim, Angel 3, totalling six units, was staked in July 1989. The claims are located on the south facing slopes of Devastator and Pylon Peaks, north of Meager Creek and about 60 kilometres west-north-west of the town of Pemberton. Private logging roads provide good access to the south side of the claims.

Pyrite mineralization occurs in rusty yellow hydrothermally altered rhyodacites of Lower Pleistocene age which occur between the mid-Pleistocene volcanic vents at the Devastator and the older Tertiary exhumed vent outcropping on the precipitous slopes east of Angel Falls. Pre-staking prospecting and sampling had indicated anomalous gold, lead and zinc assays from stream sediment samples taken from No Good Creek. The Angel claims were staked to cover the obviously pyritized rhyodacite volcanics on the Devastator ridge between No Good and Angel Creeks. Exploration target is disseminated Volcanogenic related gold and possible epithermal veins in the lower hydrothermally altered volcanic and plutonic 'basement' rocks.

After staking the Angel 4, 5, 6, 7 & 8 claims, a reconnaissance geological and sampling traverse was run up No Good Creek and along the upper south-east ridge of the Devastator in early September 1988. This was followed by staking of the Angel 1, 2 & 3 claims. A program of soil sampling and geological mapping was carried out in August 1989.

Although no highly anomalous gold assays resulted from these programs, there are a number of distinctly persistent gold anomalies in the 25 to 60 ppb range coincident with other indicator anomalies, associated with a zone of pyritized rhyodacites at the base of the Devastator assemblage.

2.0 INTRODUCTION

This report covers the results of assessment work done on the Angel claims during the period August 19th to August 23rd, 1989 and includes preliminary work done September 3rd and 4th, 1988. This work was done by R. Jordan and P. Jordan from a tent camp located on Pylon Creek on the south side of the logging access road 3 kilometres east of the claims.

2.1 Location and Access

The Angel claim group is located approximately 60 km northwest of Pemberton, on map sheet 92 J/12E. The claims are on the north side of Meager Creek, on the south side of Pylon Peak in the Mt. Meager volcanic complex.

The claim group is reached by following the Lillooet River Forest Road to milepost 24 (60 km by road northwest of Pemberton), then turning left on the Meager Creek logging road. This is followed to km 10.5 on the "Meager North Main" road.

The southern part of the claim group (Angel 3 and part of Angel 2) are reached by spur logging roads. The central and northern part of Angel 2 and Angel 4 to 8 are reached on foot through steep forest above the logging roads. Access to most of Angel 1 along No Good Creek, and the eastern part of Angel 2 along Angel Creek, is limited by steep, unstable cliffs, rockfall hazard, deep gullies and waterfalls.

2.2 Physiography and Geomorphology

The claim group ranges in elevation from 790 m to 2100 m. Most of it consists of steep, extremely rugged terrain on the south side of Pylon Peak, underlain by Quaternary and late Tertiary volcanic rocks, and by

the basement plutonic and metamorphic rocks at elevations below 1000 m. The claim group also includes part of the fairly flat Meager Creek valley bottom.

The landforms and soils of the Meager Creek valley reflect a history of Pleistocene and Holocene volcanic eruptions, and of numerous large landslides from the volcanic peaks along the north side of the valley.

The most recent major eruption took place 2350 year BP (before present), in the vicinity of Plinth Peak on the north side of the volcanic complex. This eruption did not directly affect the Meager Creek valley, although some landslides may have been associated with it. A concentration of radiocarbon dates in the Meager Creek valley at around 4000 years BP suggests that another eruptive period, or a major seismic event, may have occurred at that time. Drill hole data, and a section of Meager Creek canyon near the mouth of Angel Creek¹, show over 250 m of valley fill consisting of numerous landslide and pyroclastic deposits.

A very large landslide, derived from P3 andesitic rocks of Pylon Peak, fills the Meager Creek valley in the area of lower Angel Creek and for several kilometres downvalley. This has been dated at 4000 years BP or younger, and the deposit may include two or more landslide units. This landslide swept down the Angel Creek valley and over the mountainside between Angel and No Good Creeks, stripping off most of the overburden and depositing a thin veneer of landslide debris in some areas of gentler slope. Most of the area covered by soil sampling lies within the area stripped by the landslide.

More recent landslide deposits, two of which have been dated 370 and 900 years BP form an irregular fan at the mouth of No Good Creek.

¹Nevin Sadlier-Brown Goodbrand, 1980. 1979 drilling and exploration program, Meager Creek geothermal area, British Columbia. Report prepared for B.C. Hydro.

Much of the basin of this creek is swept by frequent rockfall, and large debris flows often descend the creek to its mouth during rainstorms. A large slump failure in P1 dacite and tuff fills part of the east side of the No Good Creek valley.

An area of high cliffs on the east side of lower Angel Creek has apparently not been affected by major landslides. Gullies in these cliffs generate frequent, relatively small, debris flows which have formed a small debris fan below the cliffs.

No Pleistocene glacial deposits are to be found in the Meager Creek valley bottom or on the hillsides of the claim group. However, a thin cover may be present on the gentler mountainside east of the Angel Creek basin, which may not have been affected by landslides.

A small glacier has formed in the upper basin of Angel Creek, above 1675 m elevation. Neoglacial moraines from this glacier cover part of the basin. The remainder of the basin above 1675 m is covered by scree from Pylon Peak.

At lower elevations, the Meager Creek valley is heavily forested with Western Hemlock, Red Cedar, Balsam Fir, and Douglas Fir. Most of the forest below 1200 m has been logged since about 1979. Poorly drained areas in the valley bottom, and areas swept by avalanches along Angel and No Good Creeks, are covered with cottonwood and alder. Above about 1400 m the forest consists of Mountain Hemlock, Subalpine Fir and Yellow Cedar interspersed with subalpine meadow and Slide Alder in poorly drained or avalanche-swept areas. Land above treeline at about 1700 m is covered with alpine meadow or bare rock and scree.

2.3 Property Description and Previous History

The Angel claims are located in the Lillooet Mining Division in NTS map area 92J 12E. P. Jordan and R. Jordan and Associates Ltd. are co-

owners of the Angel 1, 2, 4, 5, 6, 7 & 8 claims. The Angel 3 claim is owned wholly by P. Jordan. These claims have been grouped for assessment work purposes. Recording data is listed below:

<u>Claim Name</u>	<u>Units</u>	<u>Rec. No.</u>	<u>Date Staked</u>	<u>Date Recorded</u>
Angel 1	3	4119(9)	Sept. 11/88	Sept. 15/88
Angel 2	9	4120(9)	Sept. 11/88	Sept. 15/88
Angel 3	6	4279(9)	July 28/89	July 31/89
Angel 4	1	4100(9)	Sept. 02/88	Sept. 09/88
Angel 5	1	4101(9)	Sept. 02/88	Sept. 09/88
Angel 6	1	4102(9)	Sept. 02/88	Sept. 09/88
Angel 7	1	4103(9)	Sept. 02/88	Sept. 09/88
Angel 8	1	4104(9)	Sept. 02/88	Sept. 09/88

As far as is known, there has been no previous staking in the immediate area. In the mid and late 1970's, B.C. Hydro carried out an extensive program of geothermal exploration in the Meager Creek area. A number of wells were drilled, however, only one at approximate UTM coordinates 5601730 North and 463740 East was completed as a potential power source. Most of the area now occupied by the Angel 1, 2, 3, 5 & 7 claims was, until it expired in October 1986, covered by Mineral and Placer Reserve O/C 1839.

Detailed mapping of the area was carried out in the late 1970's by B.P. Read (GSC Open File 603, Geology, Meager Creek Geothermal Area). At least seven exploratory geothermal wells have been drilled on or close to the Angel 3 claim, however, as far as we know none of the results of these activities is available in the public domain. Judging by the miles of insulated copper wire left on the Devastator ridge there must have been some geophysical work done, possibly IP, but again none of this data has been found in the public domain.

There has been extensive logging of the gentler slopes below 1200 m on the claims since 1979 after most of the geothermal exploration had ceased. Logging activities have exposed a number of outcrops probably

not seen by previous mappers and this has resulted in some modifications seen on the accompanying geological map (Fig. 3). There is no evidence that any previous attempt had been made to evaluate the mineral potential of this area. None of the samples taken along Meager Creek in the National Geochemical Reconnaissance Pemberton 92J program indicated anything anomolous.

2.4 1988 and 1989 Exploration

Exploration in 1988 was confined to a prospecting and sampling traverse on Sept. 3rd and 4th, up No Good Creek as far as the obvious dike in the upper basin at which point, because of the constant barrage of debris falling off the Devastator into the creek, it was deemed prudent to ascend the slopes to the east. Outcrops adjacent to the large slide between No Good Creek and Devastator ridge were examined and on the ridge, the traverse was extended above timber line to the base of the Devastator. Nine soil, rock chip and stream sediment samples were taken during this traverse (An1-9) and subsequently assayed for gold content.

During the period August 19th to 24th, a soil sampling program accompanied by geological mapping was carried out on the Angel 2 and 3 claims. During this program a total of 73 samples, 8 stream sediment and pan concentrate samples, 2 rock chip samples and 2 float samples were collected. These were assayed by Noranda Exploration Ltd. at the Acme Analytical Laboratories Ltd.

3.0 GEOLOGY

3.1 Regional Geology

The Angel claims are located at the southern edge of the Meager Volcanic complex, a Pliocene to Recent assemblage of andesite, basalt, dacite and rhyodacite flows, tuffs and breccias, contained in seven distinct assemblages. Mount Meager is the most northerly of a string of volcanic areas in the Garibaldi volcanic belt which include Mount Cayley, Mount Garibaldi, Mount Baker and Glacier Peak, the latter two in the state of Washington.

The Meager complex overlies Mesozoic plutonic and metamorphic rocks, predominantly quartz diorites of the coast pluton and pendants of Triassic Cadwallader group gneisses and amphibolites.

The regional geology is covered in detail in GSC Open File 603 (Geology Meager Creek Geothermal Area B.P. Read 1976, 77 & 78).

3.2 Claim Geology

The Angel claims, for the most part, are underlain by a thick sequence (up to 650 m) of hydrothermally altered rhyodacite flows and tuffs of the lower Pleistocene Devastator assemblage, dipping from 20 to 25° to the east. In the southwest corner of the Angel 5 and the northern part of the Angel 1 claims there is a considerable (about 150 m) thickness of pyritized rusty yellowish to white rocks at the top of the rhyodacite P1 unit in the upper basin of No Good Creek below the steep and broken, disintegrating, porphyritic andesite vents of the Devastator P3i and P6i units. Where the P1 unit outcrops along the west edge of the Devastator ridge between elevations of 1600 and 1750 m these rocks are generally rusty whitish yellow, fine grained, siliceous and friable with a high feldspar and clay content and with up to two to three percent fine disseminated pyrite mineralization. Rock chip and soil samples from this unit gave assays of up to 30 ppb gold and 400 ppm zinc. It is quite

probable that this unit is the source of the anomalous gold, zinc and lead assays in stream sediment pans from the lower parts of No Good Creek. The eastern extension of this unit is obscured by glacier, scree and slide detritus on the Angel 5 and 7 claims.

The middle P1 rocks, outcropping between elevations of 1300 and 1600 m on the west slopes of the Devastator ridge, are generally fine to medium grained, less altered, tuffaceous rhyodacites with little or no pyritization. There does, however, appear to be minor pyritization along fracture zones associated with the narrow P3i dikes outcropping just off the west side of the ridge at elevations 1500 to 1550 m, and accompanied by somewhat anomalous gold and zinc assays in soil samples.

In the lower part of the P1 unit which is poorly exposed along logging road cuts at the boundary of the Angel 2 and 3 claims and in a smaller rather questionable outcrop at elevation 900 m in the west part of the Angel 3 claim, there is evidence of extensive alteration in rusty yellowish white pyritized rhyodacite which produced gold assays as high as 60 ppb accompanied by high associated lead and zinc assays.

Mineralization in the quartz diorite basement rocks underlying the P1 unit was noted in only one place at elevation 1040 m in an exposure along the east side of No Good Creek where spotty pyrite and chalcopyrite mineralization occurs in a narrow fracture zone. A rock chip across 25 centimetres from this zone assayed less than 5 ppb gold.

Outcrops of the basal breccia (P2x) and the overlying andesites P2f and P3x on the steep cliffs east of Angel Creek were not examined in any detail except to note that there were no obvious signs of mineralization.

The overlying P3f unit of the Pylon Assemblage is a massive, blocky, fine to medium grained, porphyritic grey to reddish andesite and is the source of a 4000 year old rock slide which crossed the eastern slopes of the Devastator ridge and into Meager Creek leaving behind large areas of debris. These rocks outcrop on the extreme northern edge of the claims.

4.0 GEOCHEMISTRY

4.1 Soils

Soils in the claim group are generally poorly developed, reflecting the young age and active geomorphic environment of the landscape. Podzolic soils are found in most forested areas with slopes gentler than about 30°. These typically have a thin (5 to 15 cm) A horizon with a black organic layer and a light grey leached layer, and a poorly developed, slightly rusty coloured, B or B-C horizon. In wet areas, the surface organic layer is thicker. On steeper slopes, on areas of exposed bedrock, and on young landslide and alluvial deposits, the soils are regosols, with a thin organic A horizon over a relatively unweathered C horizon consisting of fractured rock with a sandy or clayey matrix. The hydrothermally altered lava and pyroclastic rocks are very friable, and the C horizon material consists mainly of small rock fragments with abundant fine material. Most soil samples were collected at a depth of 10 to 25 cm in most cases, under the A horizon in the B, B-C, or C horizon. (In the list of soil samples, all these samples are described as "B-horizon" samples, whether or not a true pedogenic B horizon exists.)

In most of the area covered by soil sampling, bedrock lies at or close to the surface, and the soil consists of colluvium derived from the underlying rock or from a short distance upslope. In some areas of traverses T1, T2, T3 and T6, the soil is derived from debris of the Pylon Peak landslide and is not representative of the underlying bedrock. In some such locations, the underlying weathered bedrock is exposed in road cuts, and additional deep soil samples were taken of this material.

4.2 Field Program

A total of 73 soil samples were taken at 50 m intervals along lines T1 to T6 inclusive. Samples were taken wherever possible from the 'B' layer and each consisted of approximately 500 grams of material stored in

cloth sample bags which were then transported in paniers on mountain bikes to the terminus of the vehicle accessible logging road below Angel Creek. Stream sediment samples were taken at five locations - because of recent disruptions in stream sedimentation due to logging activities and very recent debris flows these might very well be considered as unreliable. Two rock chip samples were taken from a small outcrop of rusty rhyodacite on the Angel 3 claim 400 m west of the Hydro steam well at elevation 900 m. One float sample was taken from quartz rubble at the base of a slide area just east of the T-4-11 soil sample, another from a quartz diorite breccia boulder at the west end of line T-1.

4.3 Analytical Techniques

Under the terms of a prior agreement assays were done through Noranda Exploration Limited. With the exception of three stream sediment samples which were assayed at the Noranda lab, all sample assays were done at Acme Analytical Laboratories Limited, in Vancouver, utilizing their 30 element ICP process plus AA determination for gold. Acme analytical procedures are outlined in Table IV.

4.4 Assay Results

A complete listing of assay results is included in Table III. Assays for gold, silver, zinc, lead, copper, iron, arsenic, antimony, manganese and potassium are plotted on 1:10,000 maps Figures 4 through 13.

Stream sediment and pan concentrate sample assays were disappointingly low, however, samples taken at location A, B & C are probably contaminated by recent debris flows while the samples D3, 4, 5 & 6 may include debris from logging road construction. These low results are in contrast to the anomalous stream sediment pans taken from No Good Creek during pre-staking prospecting.

In the soil sampling program, relatively high and persistent gold and associated indicator assays occur in two distinct areas associated with the lower pyritized altered P1 rhyodacite unit, one at the junction of lines T1, 6 & 7 and the other at the junction of lines T1, 2 & 5. Scattered anomalous values occur in the upper mineralized P1 unit along the north half of line T-4. An anomalous area at stations T-4-23 & 24 is adjacent to a number of narrow andesite dikes which cut through fractured and slightly pyritized rhyodacites.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Anomalous zinc, silver and lead assays are associated with relatively anomalous gold values in two distinct areas in the lower rhyodacite zone on the Angel 2 and 3 claims. Results of samples taken from the upper zone are considered to be disappointing, as were assays from the stream samples taken from Angel Creek.

Additional detail soil sampling is recommended across the lower rhyodacite zone adjacent to the Angel 2 and 3 claim boundary and although assay results in the upper mineralized rhyodacite zone were disappointing, reconnaissance soil sampling should be completed in the upper basin of Angel Creek on the Angel 5 and 7 claims and in the north half of the Angel 3 claim. Wherever topography permits detail mapping and sampling should be carried out in the No Good Creek drainage and along the contact of the basal breccia unit (P2x) with the underlying quartz diorite 'basement' rocks in the southeast quadrant of the Angel 2 claim.

Some consideration should be given to abandoning the five two post claims (Angel 4, 5, 6, 7 & 8) assuming that the area covered by Angel 5 and 7 can be retained in the Angel 2 claim.


6.0 REFERENCES

1. B.P. Read, 1978. Geology Meager Creek Geothermal Area. GSC Open File 603.
2. Woodsworth, G.J., 1977. Geology Pemberton (92J) Map Area. GSC Open File 482.
3. Regional Geochemical Survey, British Columbia, 1981 NTS 92J, Pemberton, B.C. RGS-9, GSC Open File 867.
4. Nevin Sadlier Brown Goodbrand, 1980. 1979 Drilling and Exploration Program, Meager Geothermal Area, British Columbia. Unpublished report prepared for B.C. Hydro.

7.0 STATEMENT OF EXPENDITURES

Transportation Vancouver to site and return 698 kms at .225 x 23/27*	\$ 133.95
Travel Time 10 hours x 2 x \$13.25	265.00
Equipment Rental 4x4 Rental: 5 days at \$40.00 Mountain Bike Rental: 2 x 5 days at \$10.00	200.00 100.00
Supply Costs Meals: 10 man days at \$9.50 Camp Supplies	95.00 45.00
Survey Costs Drafting and Map Preparation Planning and Supervision: 1 day at \$350.00 Geology: 1.5 man days at \$350.00 Labour: 85 man hours at \$13.25 Assays	225.00 350.00 525.00 1,126.25 1,296.05
Report Preparation 1.5 days at \$350.00	<u>525.00</u>
TOTAL	<u><u>\$4,886.25</u></u>

- Pro-rated with assessment work done on the Engineer claims located at Railroad Pass 92J11E, 35 kms ENE.




R. Jordan, P.Eng.

8.0 AUTHOR'S QUALIFICATIONS

I, Robert P. Jordan, certify that:

I am the current holder of the Association of Professional Engineers of British Columbia Certificate of Registration No. 4707 (Professional Engineer, Geological).



R. Jordan, P.Eng.

ANGEL CLAIM GROUP : GEOCHEMICAL SAMPLES, 1989

TABLE 1

SAMPLE NO.	LAB NO.	COORDINATES (M)		ELEV. (M)	TYPE	REMARKS
		NORTH	EAST			
T1-1	121601	5602110	4633215	1057	S/B	Line 1: logging road cut
T1-2	121602	2108	3215	1052	S/C	5m deep, P1 rhyolite fragments
T1-3	121603	2120	3255	1056	S/B	
T1-4	121604	2135	3305	1063	S/B	
T1-5	121605	2140	3325	1064	S/B	P3 slide debris
T1-6	121606	2145	3375	1069	S/B	P3 slide debris
T1-7	121608	2155	3425	1073	S/B	P3 slide debris
T1-8	121609	2180	3460	1070	S/B	P3 slide debris
T1-9	121610	2230	3550	1076	S/B	P3 slide debris
T1-9.5	121611	2255	3590	1077	S/C	3m, P1 rhyolite colluv., base of P3 slide debris
T1-10	121612	2290	3630	1083	S/B	in small gully, surrounded by P3 slide debris
T1-11	121613	2350	3700	1097	S/B	P3 slide debris
T1-12	121614	2430	3730	1120	S/B	P3 slide debris
T1-13	121615	2435	3735	1116	S/C	2m, P1 rhyolite colluv., base of P3 slide debris
T1-14	121616	2480	3725	1130	S/C	1.5m, P1 soil under P3 slide debris
T1-15	121617	2525	3745	1142	S/C	0.4m, weathered p1 soil
T1-16	121618	2580	3750	1140	S/B	
T1-17	121619	2630	3760	1150	S/B	
T1-1.5	121620	2110	3215	1055	RC	Qtz diorite breccia float in P1 debris
T2-1	121621	2660	3710	1190	S/B	
T2-2	121622	2680	3660	1235	S/B	
T2-3	121623	2640	3620	1235	S/B	P1 colluv. with veneer of P3 slide debris
T2-4	121624	2605	3580	1247	S/B	P1 colluv. with veneer of P3 slide debris
T2-5	121625	2575	3530	1255	S/B	
T2-6	121626	2560	3480	1260	S/B	
T2-7	121627	2565	3420	1275	S/B	30m N of line
T2-8	121628	2520	3385	1272	S/B	amongst P3 slide blocks
T2-9	121629	2510	3335	1272	S/B	west edge of P3 boulder field
T2-10	121630	2500	3300	1265	S/B	shallow gully, seepage area
T3-1	121631	2450	3305	1250	S/B	
T3-2	121632	2400	3305	1210	S/B	P1 soil and P3 slide debris
T3-3	121633	2350	3325	1170	S/B	
T4-1	121634	2095	3190	1050	S/B	below qtz diorite outcrop
T4-2	121635	2075	3140	1045	S/B	
T4-3	121636	2110	3120	1080	S/B	
T4-4	121637	2155	3095	1110	S/B	
T4-4A	121638	2170	3115	1110	S/B	P1 debris, in gully 30m E of line
T4-5	121639	2210	3080	1148	S/B	on blazed claim line
T4-6	121640	2260	3090	1160	S/B	
T4-7	121641	2310	3100	1188	S/B	
T4-8	121642	2360	3110	1215	S/B	
T4-9	121643	2415	3125	1235	S/B	
T4-10	121644	2465	3135	1250	S/B	
T4-11	121645	2515	3140	1265	S/B	
T4-11A	121646	2515	3170	1272	RC	quartz float, bottom of steep meadow
T4-12	121647	2565	3130	1297	S/B	
T4-13	121648	2615	3125	1330	S/B	
T4-14	121649	2665	3125	1363	S/B	
T4-15	121650	2715	3120	1397	S/B	
T4-16	121651	2770	3110	1430	S/B	
T4-17	121652	2820	3110	1450	S/B	
T4-18	121653	2870	3105	1480	S/B	

ANGEL CLAIM GROUP : GEOCHEMICAL SAMPLES, 1989

SAMPLE NO.	LAB NO.	COORDINATES (M)		ELEV. (M)	TYPE	REMARKS
		NORTH	EAST			
T4-19	121654	2920	3095	1495	S/B	
T4-20	121655	2965	3075	1520	S/B	
T4-21	121656	3005	3065	1540	S/B	
T4-22	missing	3055	3040	1540	S/B	
T4-23	121657	3105	3025	1560	S/B	
T4-24	121658	3155	3010	1590	S/B	
T4-25	121659	3210	2990	1620	S/B	
T4-26	121660	3260	2980	1655	S/B	at ridge crest
T5-1	121661	2250	3890	937	S/B	
T5-2	121662	2350	3830	1015	S/B	
T5-3	121663	2400	3805	1052	S/C	shallow colluv., mostly dacite, no B horizon
T5-4	121664	2420	3790	1070	S/C	"
T5-5	121665	2465	3770	1097	S/C	"
T6-1	121666	2090	3280	1045	S/B	Line 6: logging road cut
T6-2	121667	2085	3325	1033	S/B	P1 soil and P3 slide debris
T6-3	121668	2080	3375	1032	S/C	0.9m, P1 colluv. under P3 slide debris
T6-4	121669	2075	3420	1030	S/C	0.8m, P1 colluv. under P3 slide debris
T6-5	121670	2085	3470	1018	S/C	P1, P3, and Qtz diorite debris
T7-1	121671	2045	3230	1030	S/B	
T7-2	121672	1995	3220	1010	S/B	
T7-3	121673	1950	3200	980	S/B	
T7-3.5	121674	1950	3185	980	S/B	15m W of line, qtz diorite and dacite rubble
T7-4	121675	1915	3190	960	S/B	
T7-5	23801	1865	3170	925	S/B	
A-1	23802	2285	4440	927	SS	small creek 400m E of Angel Cr
A-2	23803	2285	4440	927	SSP	"
B-1	23804	2610	4045	967	SS	small creek 40m E of Angel Cr
B-2	23805	2610	4045	967	SSP	"
C-1	23806	2370	4000	928	SS	Angel Creek at bridge
C-2	23807	2370	4000	928	SSP	"
D-1	23808	1835	3160	900	RC	
D-2	23809	1820	3165	895	RC	
D-3	23810	1770	3350	837	SS	small creek W of Hydro well
D-4	23811	1770	3350	837	SSP	"
D-5	23812	2085	3290	1030	SS	same creek as D-3/4; at logging road
D-6	23813	2085	3290	1030	SSP	"

TYPE LEGEND: S - soil S/B - B horizon S/C - C horizon or deeper
 RC - rock chips SS - stream sediment SSP - panned stream sediment

- NOTES: 1. Sample depth 10 to 25 cm unless otherwise indicated.
 2. Soils are formed in colluvium derived from underlying or upslope bedrock, unless otherwise indicated.
 3. Coordinates are from UTM metric grid, 1:50,000 and 1:20,000 topo maps.
 4. Samples collected Aug. 19-23, 1989.

ANGEL CLAIM GROUP : GEOCHEMICAL SAMPLES, 1988

SAMPLE NO.	COORDINATES (M)		ELEV (M)	TYPE	REMARKS
	NORTH	EAST			
An-1	0880	2385	765	Debris	Py min.rhyodacite fm debris flow
An-2	2510	2595	1075	RC	Andesite dike fr py min.
An-3	2410	2610	1042	RC	Py,Qp min. frac.quartz diorite
An-4	2045	2645	960	Debris	Py min.rhyodacite fm debris flow
An-5	2785	3080	1435	RC	Py min.rusty rhyodacite fragments
An-6	2515	2955	1255	S/C	rusty ylw soil rhyodacite fragments
^c An-7	3430	2970	1707	S/C	rusty ylw soil
An-8	3450	2940	1707	RC	grab sample py min rusty rhyodacite
An-9	2115	3210	1050	RC	rusty ylw rhyodacite-float?



Chemex Labs Ltd.

Analytical Chemists • Geochemists • Registered Assayers

212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

To: JORDAN, R. & ASSOCIATES LTD.

R.R.1
PRIDDIS, AB
TOL 1W0

Project :

Comments:

**Page No. : 1
Tot. Pages: 1
Date : 14-SEP-88
Invoice # : I-8823069
P.O. # : NONE

CERTIFICATE OF ANALYSIS A8823069

SAMPLE DESCRIPTION	PREP CODE	Au ppb FA+AA							
ANGEL 1	205	--	<	10					
ANGEL 2	205	---	<	5					
ANGEL 3	205	---	<	5					
ANGEL 4	205	---	<	20					
ANGEL 5	205	---	<	25					
ANGEL 8	205	---	<	5					
ENG 1	205	---	<	5					
ENG 2	205	--	<	5					

TABLE 11

CERTIFICATION :

Handwritten signature



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

To: JORDAN, R. & ASSOCIATES LTD.

R.R. 1
PRIDDIS, AB
TOL 1W0

Project :
Comments :

**Page No. : 1
Tot. Pages: 1
Date : 14-SEP-88
Invoice # : I-8823070
P.O. # : NONE

CERTIFICATE OF ANALYSIS A8823070

SAMPLE DESCRIPTION	PREP CODE		Au ppb FA+AA							
ANGEL 6	202	--	30							
ANGEL 7	202	--	25							

CERTIFICATION :

Frank V. ...

19



**MIN
• EN
LABORATORIES**

SPECIALISTS IN MINERAL ENVIRONMENTS
CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

VANCOUVER OFFICE:
705 WEST 15TH STREET
NORTH VANCOUVER, B.C. CANADA V7M 1T2
TELEPHONE (604) 980-5814 OR (604) 988-4524
TELEX: VIA U.S.A. 7601067 • FAX (604) 980-9621

TIMMINS OFFICE:
33 EAST IROQUOIS ROAD
P.O. BOX 867
TIMMINS, ONTARIO CANADA P4N 7G7
TELEPHONE: (705) 264-9996

Geochemical Analysis Certificate 9/V/0411/R/G/001

Company: GALACTIC RESOURCES
Project: MEAGER
Attn: F. BAUMANN

Date: JUN-02-89
Copy 1. GALACTIC RES, VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 6 ROCKS samples submitted MAY-31-89 by F. BAUMANN.

Sample Number	AG PPM	AS PPM	AU-WET PPB	SB PPM	
N1	0.6	1	5	1	
N2	1.7	1	5	1	
H1 (AN-9)	0.8	1	60	1	Pl Rock CHIPS
D1	0.2	1	5	1	
B1	6.0	1	5	2	
N3	0.4	5	5	1	

Certified by *[Signature]*
MIN-EN LABORATORIES

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	AU*
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPM
Soil 22801 T2-5	1	15	57	326	.4	6	6	622	2.60	4	5	ND	1	18	1	2	2	35	.15	.051	6	7	.41	115	.01	2	1.12	.03	.05	1	15
Silt 22803 D1	2	59	125	602	.9	5	7	653	6.53	15	5	ND	1	35	1	2	2	34	.23	.114	7	5	.41	134	.01	2	1.34	.01	.07	1	15
Soil 22805 D2	1	51	81	275	.9	4	7	622	7.37	8	5	ND	1	20	1	2	2	28	.15	.089	5	8	.25	95	.02	2	.83	.02	.10	1	13

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Au*
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	PPM	PPM
✓3803 A001	1	23	15	112	.2	13	12	1090	4.14	5	5	ND	1	222	1	2	2	66	4.32	.156	11	14	1.28	183	.03	6	.97	.01	.17	1	3
✓3804 B001	1	26	33	147	.3	17	13	1105	3.81	8	5	ND	1	221	1	2	3	59	3.92	.114	11	17	1.32	149	.02	4	.83	.01	.09	1	3
✓3806 B002	1	36	20	100	.2	12	12	963	3.61	3	5	ND	1	125	1	2	2	58	2.69	.158	12	13	.90	142	.02	18	.91	.01	.10	1	5
3810 D3	1	16	40	238	.3	8	7	1919	2.29	2	5	ND	1	24	1	2	2	31	.41	.045	7	9	.37	95	.02	2	.81	.01	.07	1	3
3811 D4	1	19	29	187	.6	8	6	999	2.24	2	5	ND	1	20	1	2	2	34	.31	.047	6	8	.36	67	.03	3	.73	.02	.08	1	2
3812 D5	1	23	34	242	.5	9	8	1142	2.51	2	5	ND	1	34	1	2	3	28	.52	.043	9	7	.47	101	.01	4	1.04	.02	.09	1	2
3813 D6	1	15	31	195	.3	9	7	967	2.38	2	5	ND	1	30	1	2	2	29	.46	.045	7	7	.46	107	.01	3	.96	.02	.09	1	2
STD C/AU-S	19	58	42	132	6.8	71	31	1023	4.25	42	18	7	37	48	18	15	20	60	.52	.092	38	55	.93	175	.07	37	2.03	.06	.13	12	49

Silts

-24-

SAMPLE#	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Th PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	K %	W PPM	Au* PPB
121620 T-1-1	7	6	64	.1	1	3	955	1.67	2	5	ND	1	33	1	2	2	10	1.50	.045	9	18	.53	45	.01	2	1.00	.03	.09	1	2	
121646 T-4-1-2	5	2	23	.1	6	1	637	.47	2	5	ND	1	5	1	2	2	1	.49	.008	2	61	.02	52	.01	8	.08	.01	.01	2	1	

Rocks

-25-

Angel

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION: S. GENERAL

CODE : 8909-030

Project No. : 127

Sheet: 1 of 1

Date rec'd: SEP. 05

Material : 3 PANS

Geol.: D. S.

Date compl: SEP. 21

Remarks :

Values in PPM, except where noted.

T.T. No.	SAMPLE No.	wt. (g)	PPB Au	Cu	Zn	Pb	Ag	
8	Accl	23803	150.9	10	22	122	16	0.2
9	BocL	23805	105.0	10	32	250	72	1.2
10	CoOL	23807	93.1	10	22	94	14	0.2

N.B. Pan-con: entire sample used for Au determination.

*Cu, Zn, Pb, Ag values obtained from Aqua Regia sol'n.

Pans

1 tip LE'RK AN

TABLE IV

ANALYTICAL METHOD DESCRIPTIONS FOR GEOCHEMICAL ASSESSMENT REPORTS

The methods listed are presently applied to analyse geological materials by the Noranda Geochemical Laboratory at Vancouver.

Preparation of Samples:

Sediments and soils are dried at approximately 80°C and sieved with a 80 mesh nylon screen. The -80 mesh (0.18 mm) fraction is used for geochemical analysis.

Rock specimens are pulverized to -120 mesh (0.13 mm). Heavy mineral fractions (panned samples * from constant volume), are analysed in its entirety, when it is to be determined for gold without further sample preparation.

Analysis of Samples:

Decomposition of a 0.200 g sample is done with concentrated perchloric and nitric acid (3:1), digested for 5 hours at reflux temperature. Pulps of rock or core are weighed out at 0.4 g and chemical quantities are doubled relative to the above noted method for digestion.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn can be determined directly from the digest (dissolution) with a conventional atomic absorption spectrometric procedure. A Varian-Techtron, Model AA-5 or Model AA-475 is used to measure elemental concentrations.

Elements Requiring Specific Decomposition Method:

Antimony - Sb: 0.2 g sample is attacked with 3.3 ml of 6% tartaric acid, 1.5 ml conc. hydrochloric acid and 0.5 ml of conc. nitric acid, then heated in a water bath for 3 hours at 95°C. Sb is determined directly from the dissolution with an AA-475 equipped with electrodeless discharge lamp (EDL).

Arsenic - As: 0.2 - 0.3 g sample is digested with 1.5 ml of perchloric 70% and 0.5 ml of conc. nitric acid. A Varian AA-475 equipped with an As-EDL is used to measure arsenic content in the digest.

Barium - Ba: 0.1 g sample digested overnight with conc. perchloric, nitric and hydrofluoric acid; Potassium chloride added to prevent ionization. Atomic absorption using a nitrous oxide-acetylene flame determines Ba from the aqueous solution.

Bismuth - Bi: 0.2 - 0.3 g is digested with 2.0 ml of perchloric 70% and 1.0 ml of conc. nitric acid. Bismuth is determined directly from the digest with an AA-475 complete with EDL.

Gold - Au: 10.0 g sample is digested with aqua regia (1 part nitric and 3 parts hydrochloric acid). Gold is extracted with MLBK from the aqueous solution. AA is used to determine Au.

Magnesium - Mg: 0.05 - 0.10 g sample is digested with 4 ml perchloric/nitric acid (3:1). An aliquot is taken to reduce the concentration to within the range of atomic absorption. The AA-475 with the use of a nitrous oxide flame determines Mg from the aqueous solution.

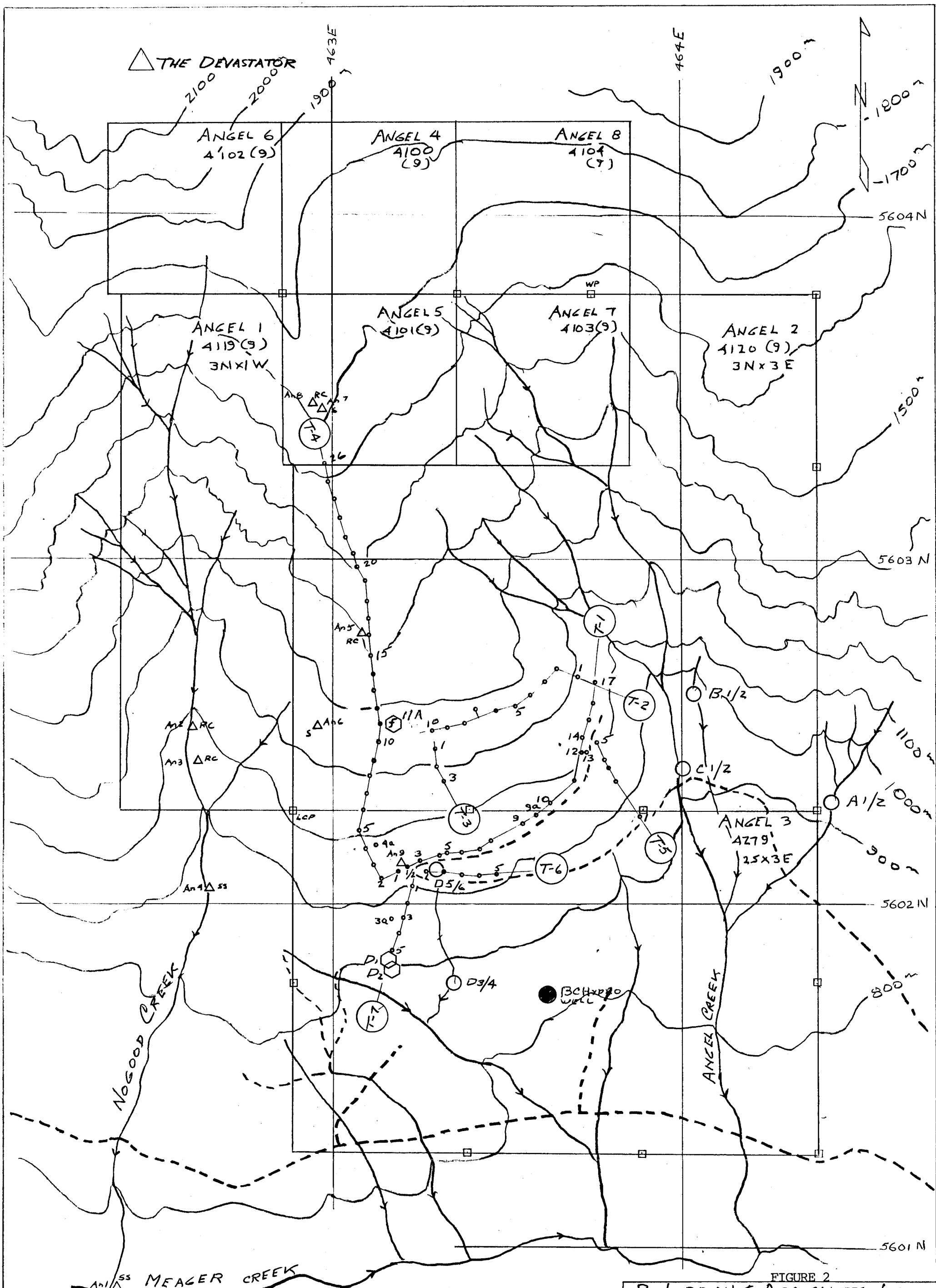
Tungsten - W: 1.0 g sample sintered with a carbonate flux and thereafter leached with water. The leachate is treated with potassium thiocyanate. The yellow tungsten thiocyanate is extracted into tri-n-butyl phosphate. This permits colourimetric comparison with standards to measure tungsten concentration.

Uranium - U: An aliquot from a perchloric-nitric decomposition, usually from the multi-element digestion, is buffered. The aqueous solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

N.B.: If additional elemental determinations are required on panned samples, state this at the time of sample submission. Requests after gold determinations would be futile.

LOWEST VALUES REPORTED IN PPM:

Ag - 0.2	Mn - 20	Zn - 1	Au - 0.01
Cd - 0.2	Mo - 1	Sb - 1	W - 2
Co - 1	Ni - 1	As - 1	U - 0.1
Cu - 1	Pb - 1	Ba - 10	
Fe - 100	V - 10	Bi - 1	



Notes: - Contours, creeks, UTM co-ordinates adapted from G.S.C. open file 603 'MEAGER CREEK GEOTHERMAL AREA'
 - Claim post locations, logging roads, sample locations from Brunton & chain survey & air photos.

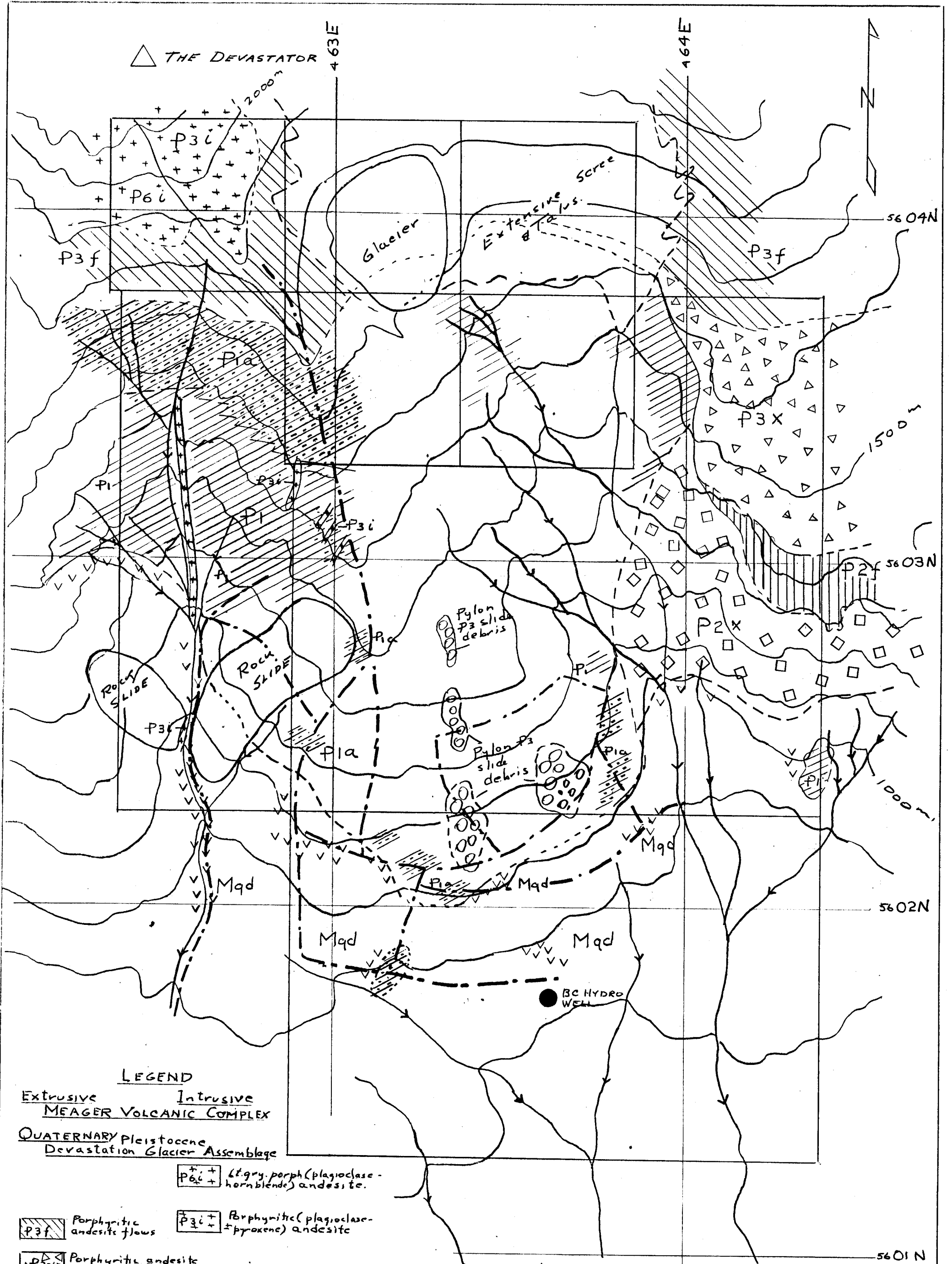
- LEGEND**
- - - Logging road
 - (T-) Traverse number
 - o Soil sample
 - Stream sediment sample
 - Rock chip/float(s) sample
 - △ 1988 Sample { RC rock chip
SS stream sed.
S soil

FIGURE 2

R. JORDAN & ASSOCIATES LTD.
 CLAIM & SAMPLE LOCATION MAP
 ANGEL CLAIMS LILLOOET M.D.
 NTS 92 J12 E
 DRAWN BY: R. JORDAN P. ENG.
 DATE: NOVEMBER 1989

0 100 200 300 400 500 Metres

SCALE 1:10,000 *R. Jordan*



LEGEND

Extrusive Intrusive
MEAGER VOLCANIC COMPLEX

QUATERNARY Pleistocene
Devastation Glacier Assemblage

$\begin{matrix} + & + \\ P6i & + \end{matrix}$ Lt. gry. porph (plagioclase-hornblende) andesite.

$\begin{matrix} \square & + \\ P3f & + \end{matrix}$ Porphyritic andesite flows $\begin{matrix} + & + \\ P3i & + \end{matrix}$ Porphyritic (plagioclase-pyroxene) andesite

$\begin{matrix} \square & \Delta \\ P3x & \end{matrix}$ Porphyritic andesite breccia & ash

$\begin{matrix} \square & \square \\ P2f & \end{matrix}$ Dark gry. aphanitic Andesite flows

Devastator Assemblage

$\begin{matrix} \square & \square \\ P1 & \end{matrix}$ White, altered rhyodacite (a. rusty, yellow, pyritized)

TERTIARY Pliocene

$\begin{matrix} \square & \square \\ P2x & \end{matrix}$ Volcanic Breccia with plutonic & volcanic slasts

COAST PLUTONIC COMPLEX

CRETACEOUS / OR JURASSIC $\begin{matrix} \square & \square \\ Mqd & \end{matrix}$ Biotite hornblends Quartz Diorite

Note: Geology from G.S.C. Open File #603 (Geology Meager Creek Geothermal Area, P.B. Read 1976, 1977, 1978). Modified from air photos & along noted traverses R. Jordan, P. Jordan, 1980-89

--- Traverser lines.

FIGURE 3

R. JORDAN & ASSOCIATES LTD	
GEOLOGICAL MAP	
ANGEL CLAIMS	LILLOET M.D.
NTS 92J 12 E	
COMPILED BY R. JORDAN P. ENG	
DATE: NOVEMBER 1989	
0 100 200 300 400 500 Metres	
Scale 1:10000 c. 1100 metres	

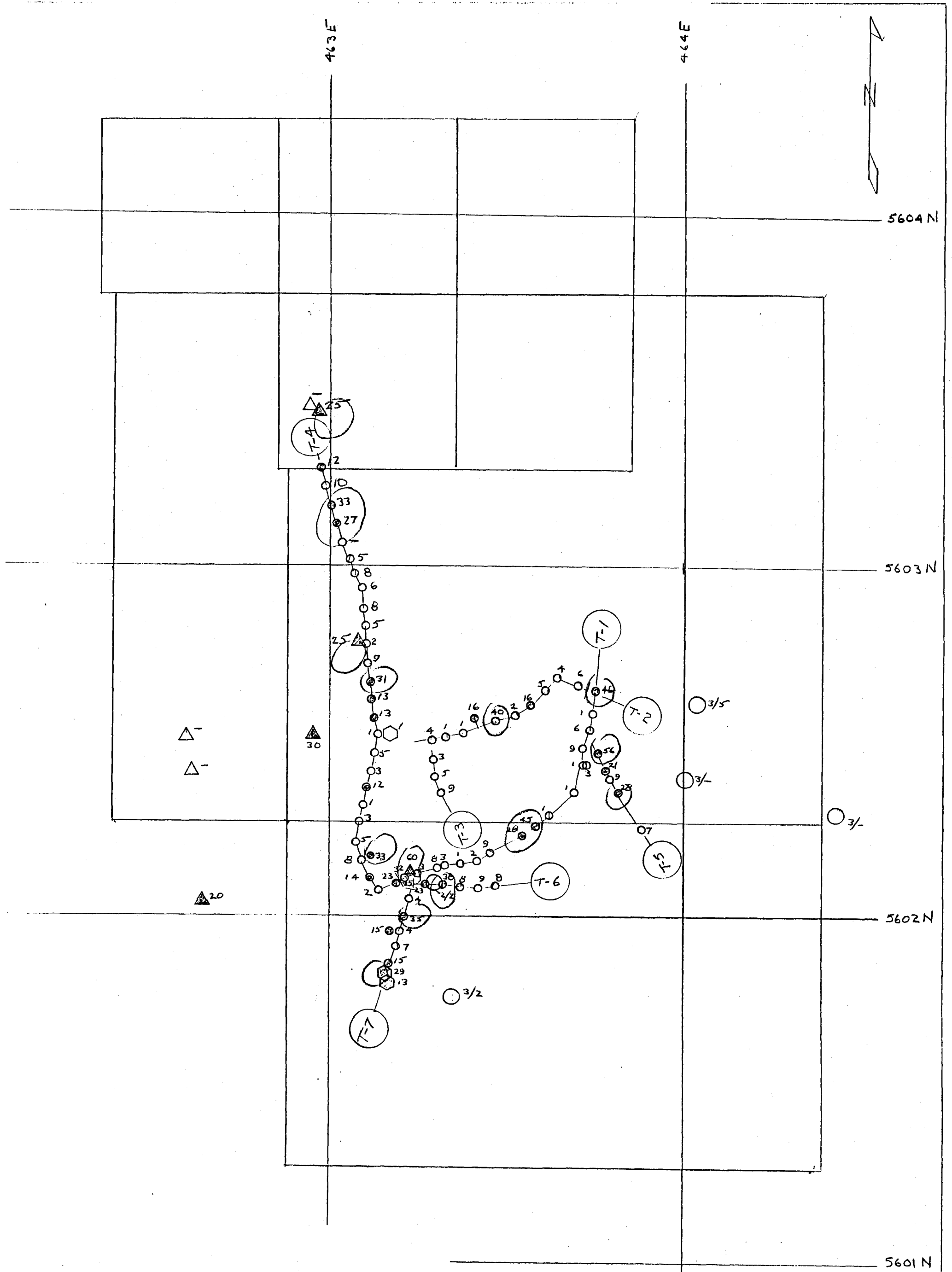


FIGURE 4

R. JORDAN & ASSOCIATES LTD.

GOLD ASSAYS (PPB)

ANGEL CLAIMS | LILLOOET M.D.

NTS 92 J 12E

DRAWN BY: R. JORDAN P. ENG.

DATE: NOVEMBER 1989

0 100 200 300 400 500 Metres

SCALE 1:10,000

RJ

○ >25 ppb

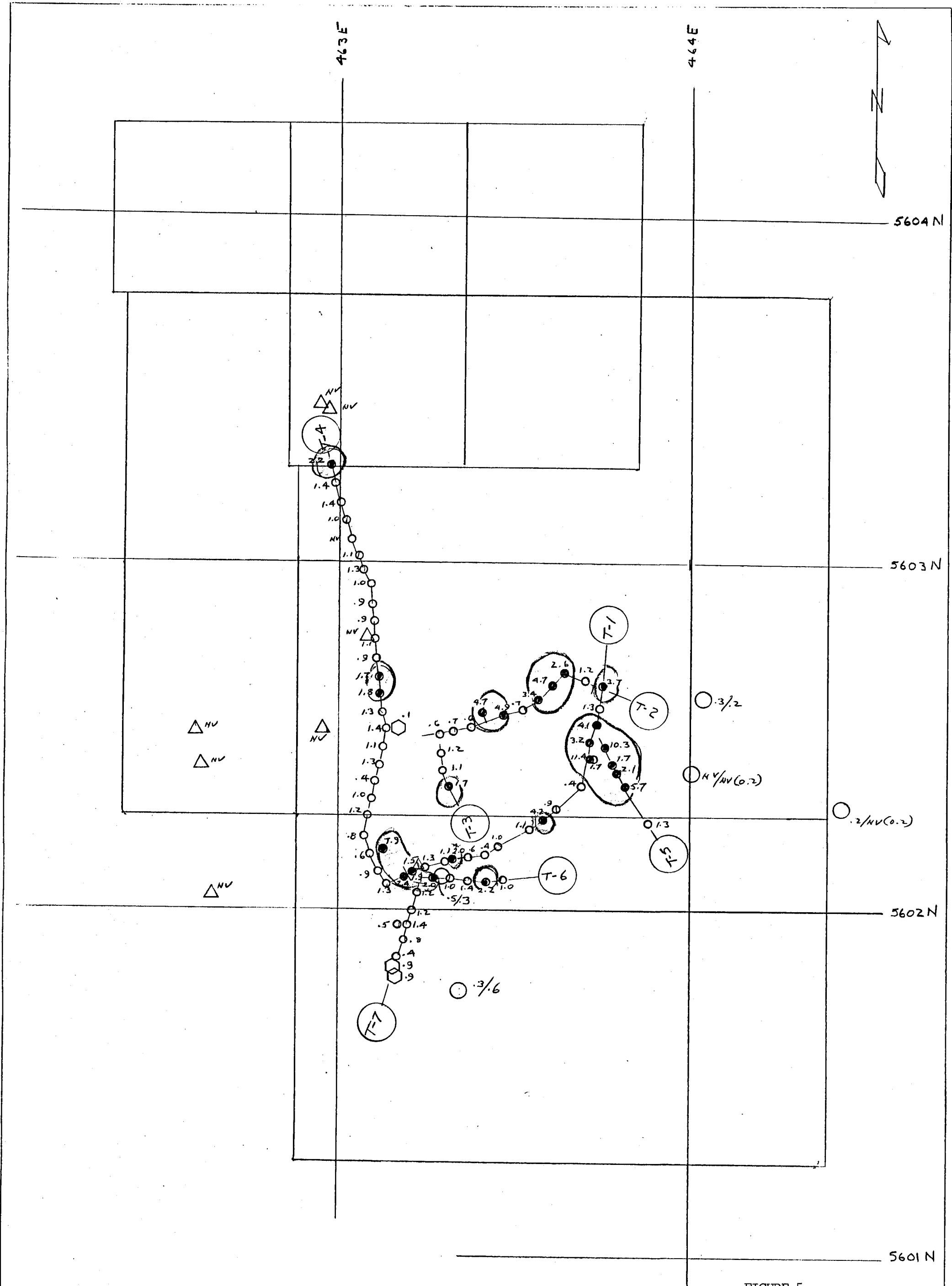


FIGURE 5

R. JORDAN & ASSOCIATES LTD.	
SILVER ASSAYS (PPM)	
ANGEL CLAIMS	LILLOOET M.D.
NTS 92 J12E	
DRAWN BY: R. JORDAN P. ENG	
DATE: NOVEMBER 1989	
SCALE 1:10,000	<i>RJA</i>

○ >1.5 PPM

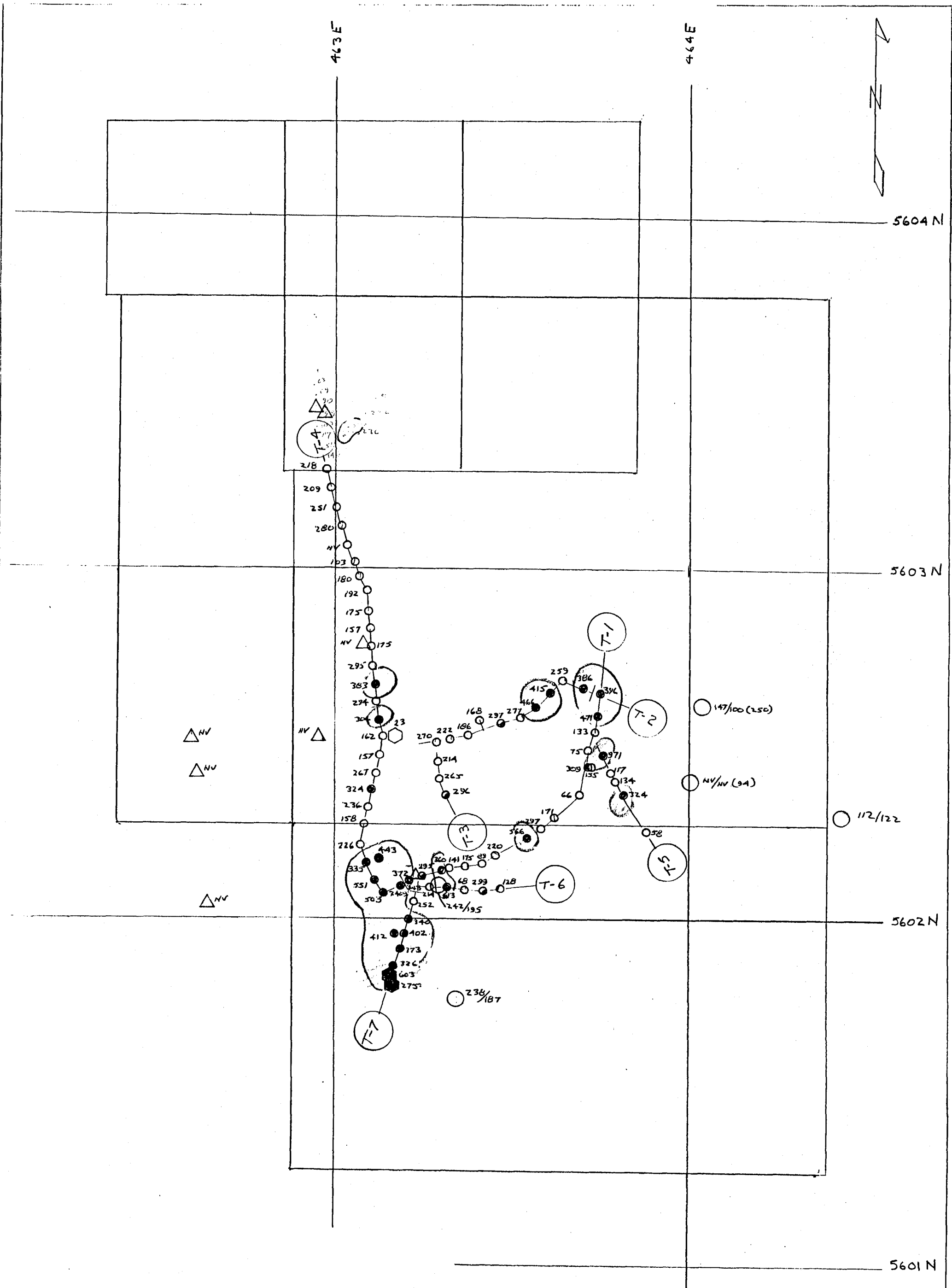


FIGURE 6

R. JORDAN & ASSOCIATES LTD.

ZINC ASSAYS (PPM)

ANGEL CLAIMS | LILLOOET M.D.

NTS 92J12E

DRAWN BY: R. JORDAN P. ENG.

DATE: NOVEMBER 1989

0 100 200 300 400 500 Metres

SCALE 1:10,000

RJA

○ >300 ppm

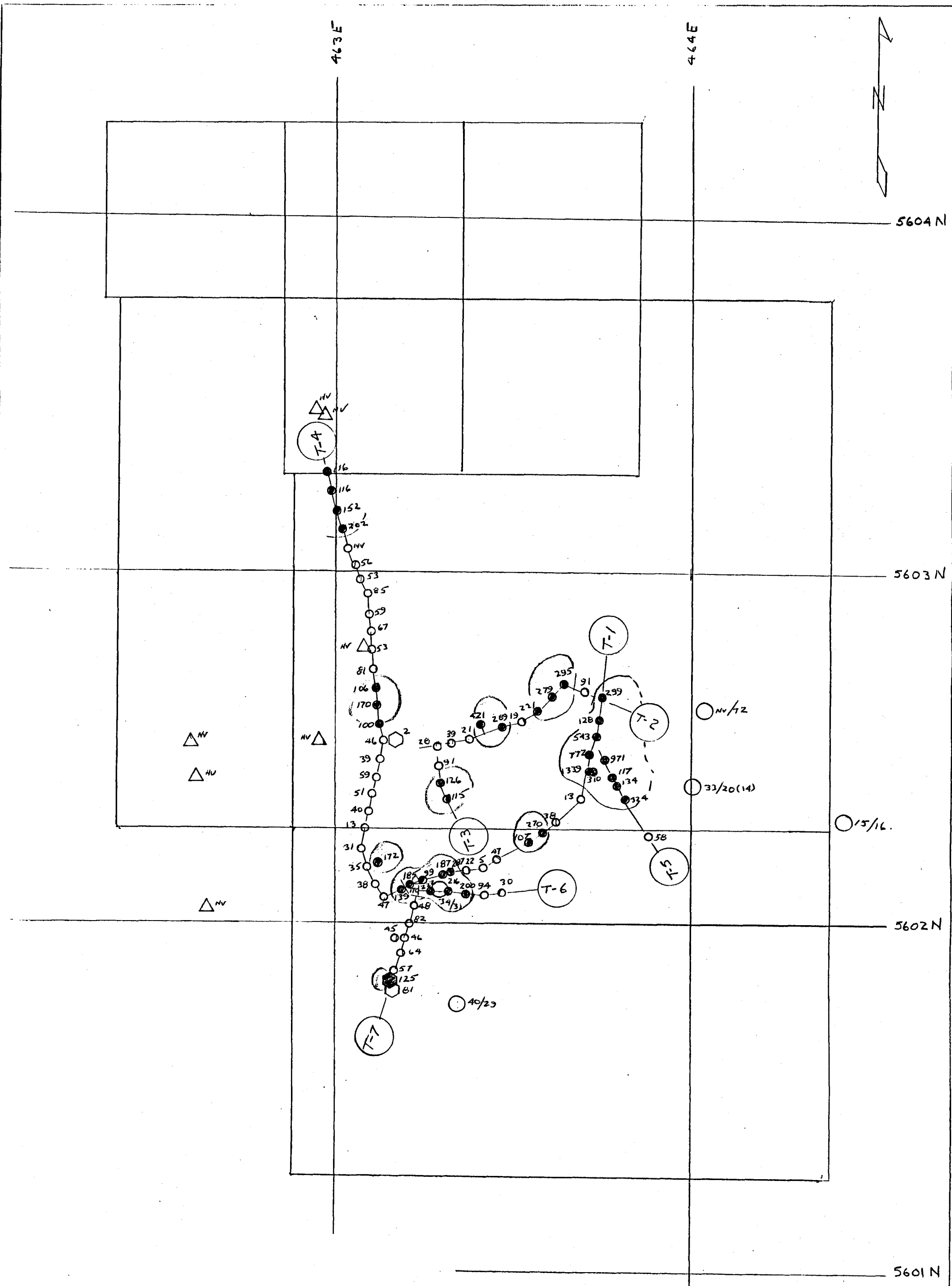


FIGURE 7

R. JORDAN & ASSOCIATES LTD.	
LEAD ASSAYS (PPM)	
ANGEL CLAIMS	LILLOOET M.D.
NTS 92 J12E	
DRAWN BY: R. JORDAN P. ENG.	
DATE: NOVEMBER 1989	
0 100 200 300 400 500 Metres	
SCALE 1:10,000 <i>RJA</i>	

○ >100 PPM

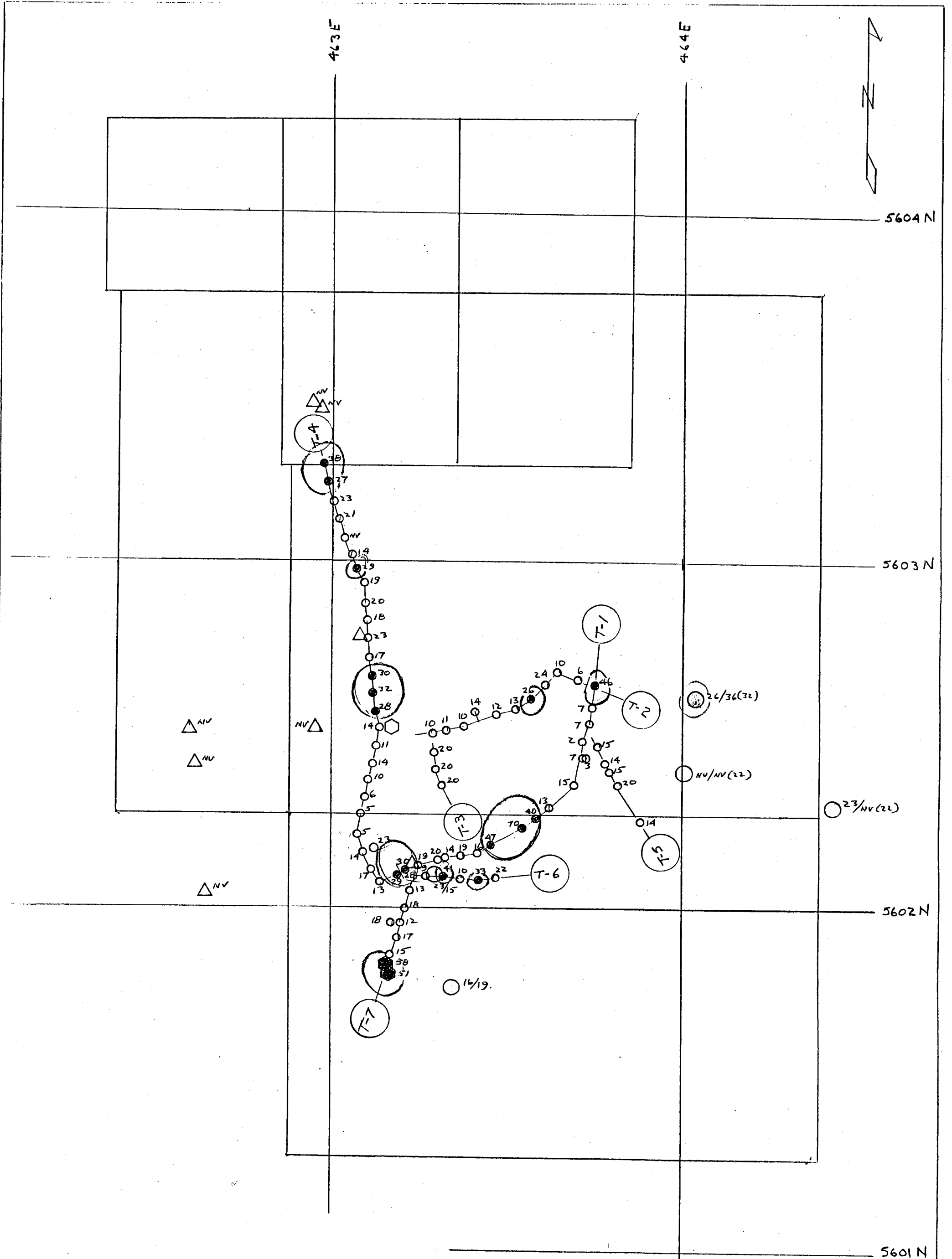


FIGURE 8

R. JORDAN & ASSOCIATES LTD.	
COPPER ASSAYS (PPM)	
ANGEL CLAIMS	LILLOOET M.D.
NTS 92J12E	
DRAWN BY: R. JORDAN P. ENG.	
DATE: NOVEMBER 1989	
0 100 200 300 400 500 Metres	
SCALE 1:10,000	

○ >25PPM

RJA

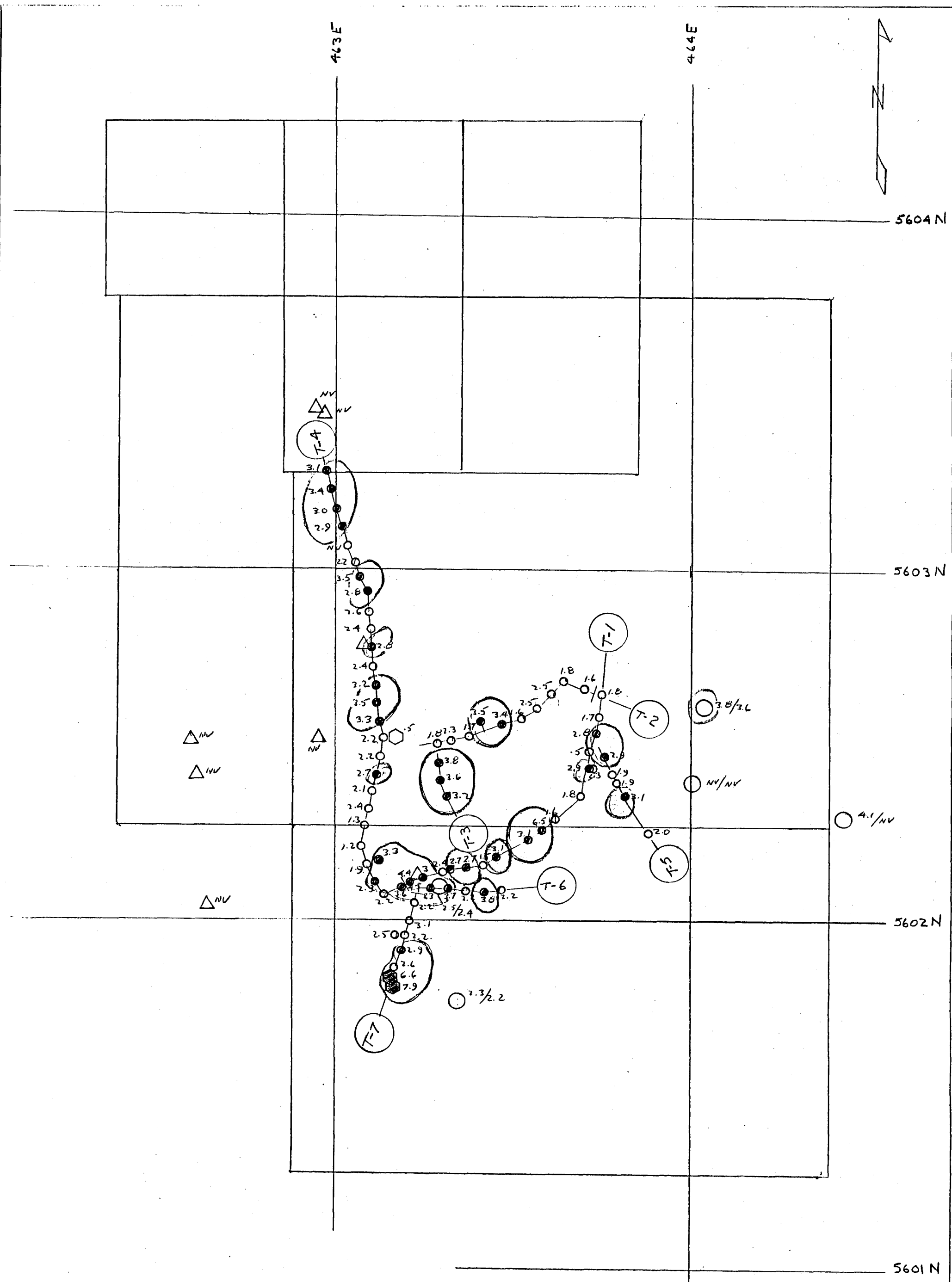


FIGURE 9

R. JORDAN & ASSOCIATES LTD.	
IRON ASSAYS (%)	
ANGEL CLAIMS	LILLOOET M.D.
NTS 92 J12E	
DRAWN BY: R. JORDAN P. ENG.	
DATE: NOVEMBER 1989	
0 100 200 300 400 500 Metres	
SCALE 1:10,000	<i>RJA</i>

○ > 2.7 %

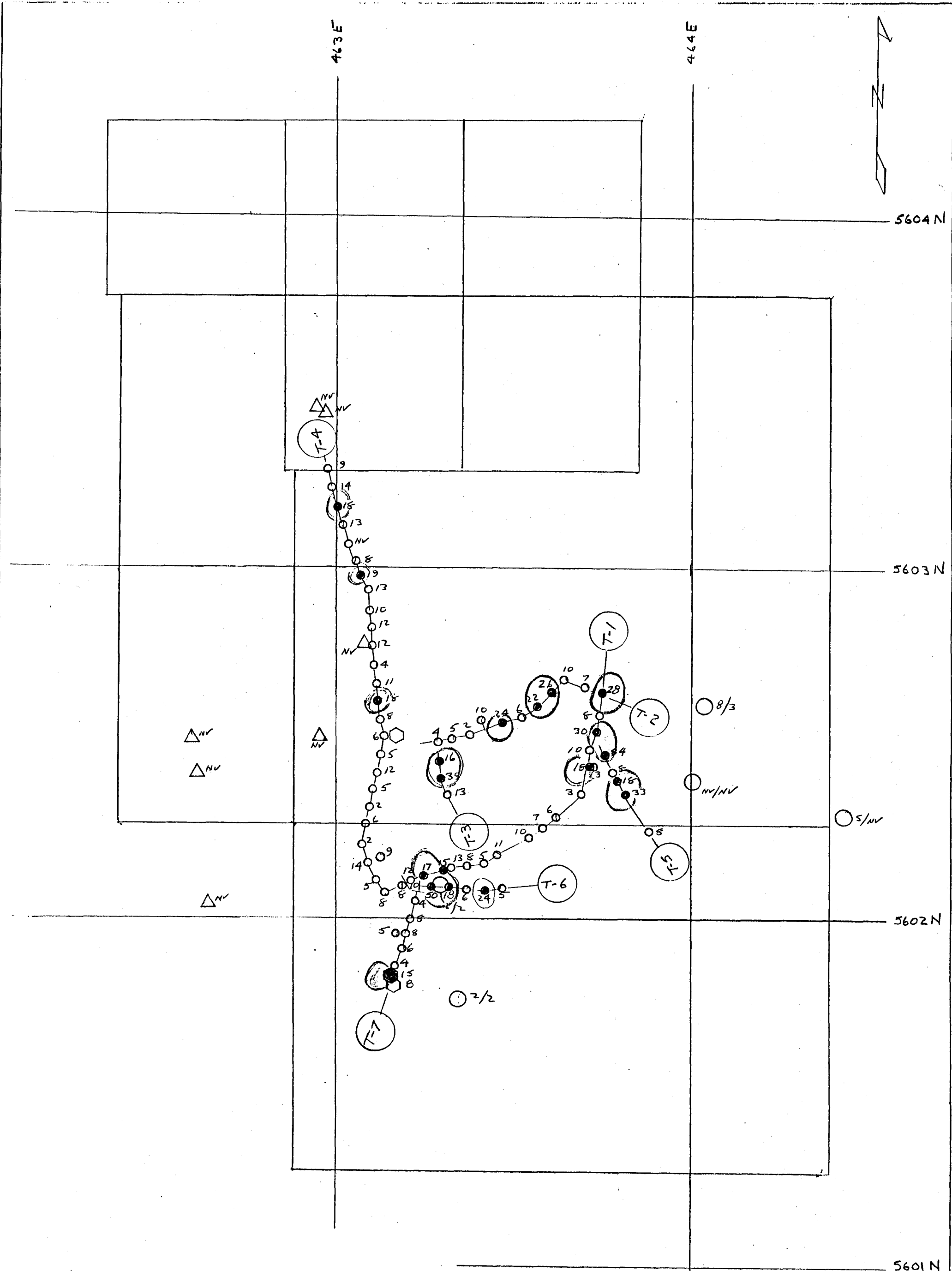
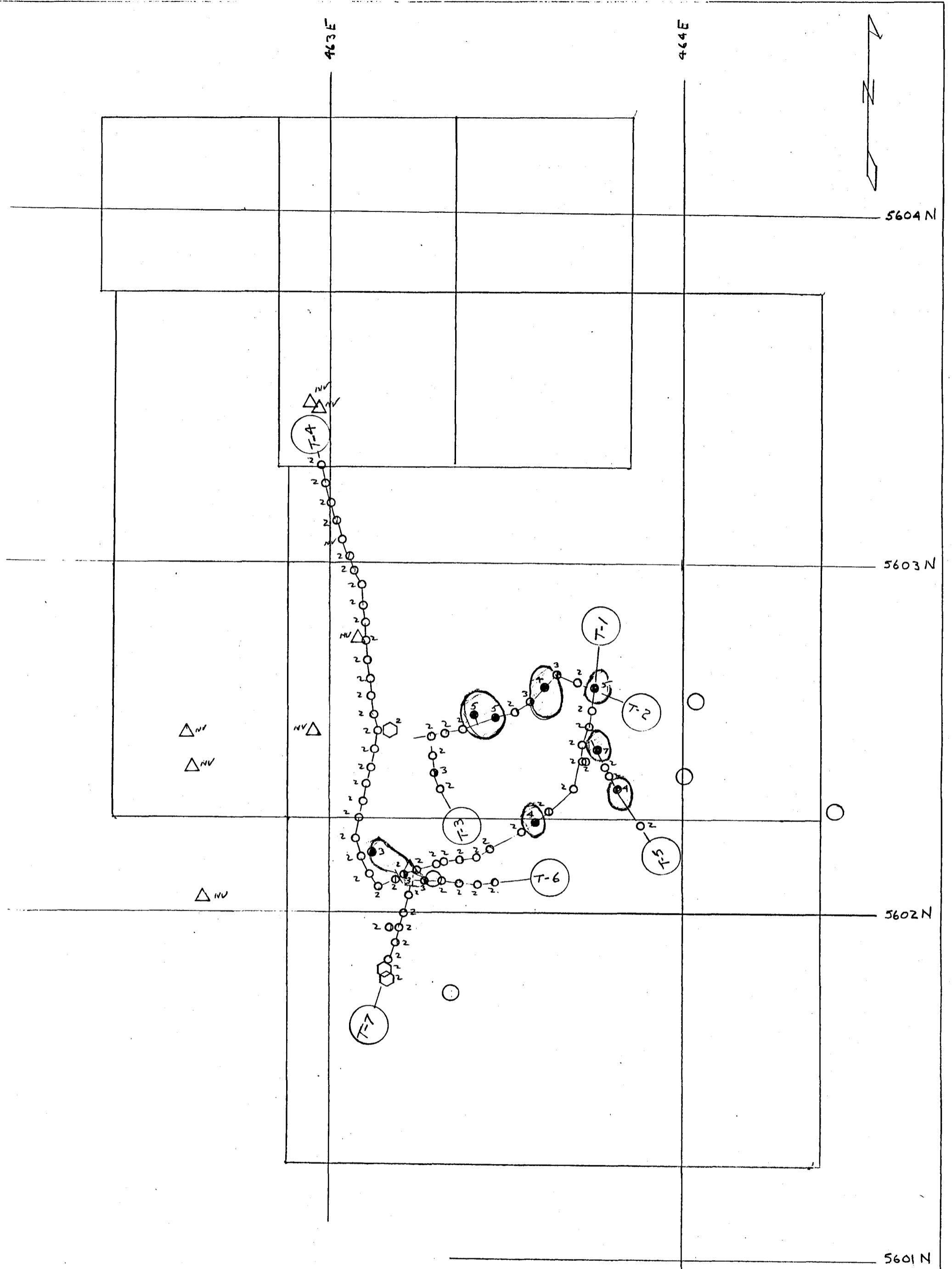


FIGURE 10

R. JORDAN & ASSOCIATES LTD.	
ARSENIC ASSAYS (PPM)	
ANGEL CLAIMS	LILLOOET M.D.
NTS 92 J12E	
DRAWN BY: R. JORDAN P. ENG.	
DATE: NOVEMBER 1989	
SCALE 1:10,000 <i>RJA</i>	

○ > 15ppm



○ >3ppm

FIGURE 11

R. JORDAN & ASSOCIATES LTD.	
ANTIMONY ASSAYS (PPM)	
ANGEL CLAIMS	LILLOET M.D.
NTS 92J12E	
DRAWN BY: R. JORDAN P. ENG.	
DATE: NOVEMBER 1989	
SCALE 1:10,000 <i>RJA</i>	

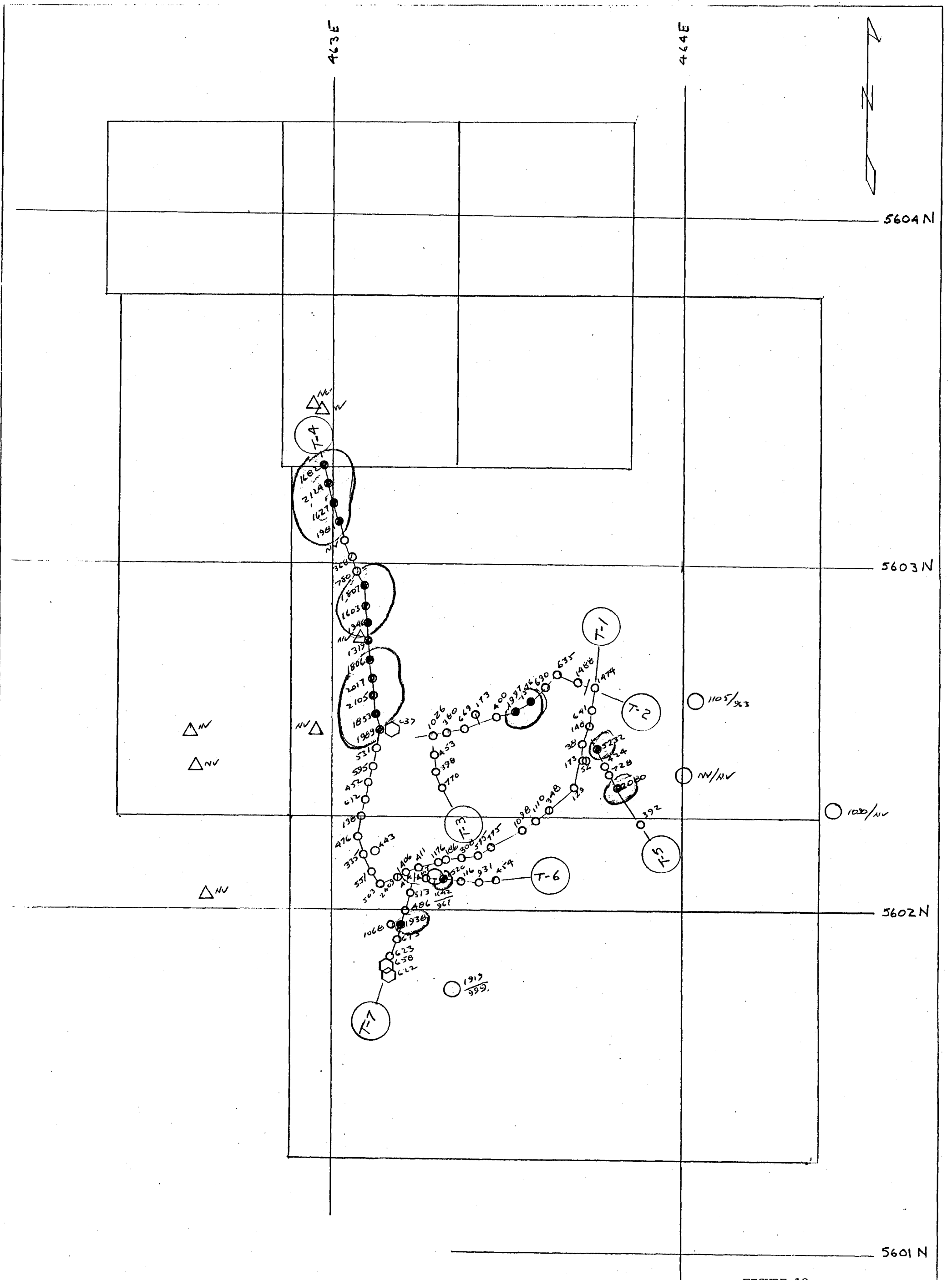


FIGURE 12

R. JORDAN & ASSOCIATES LTD.

MANCANESE (PPM)

ANGEL CLAIMS | LILLOOET M.D.

NTS 92 J12E

DRAWN BY: R. JORDAN P. ENG.

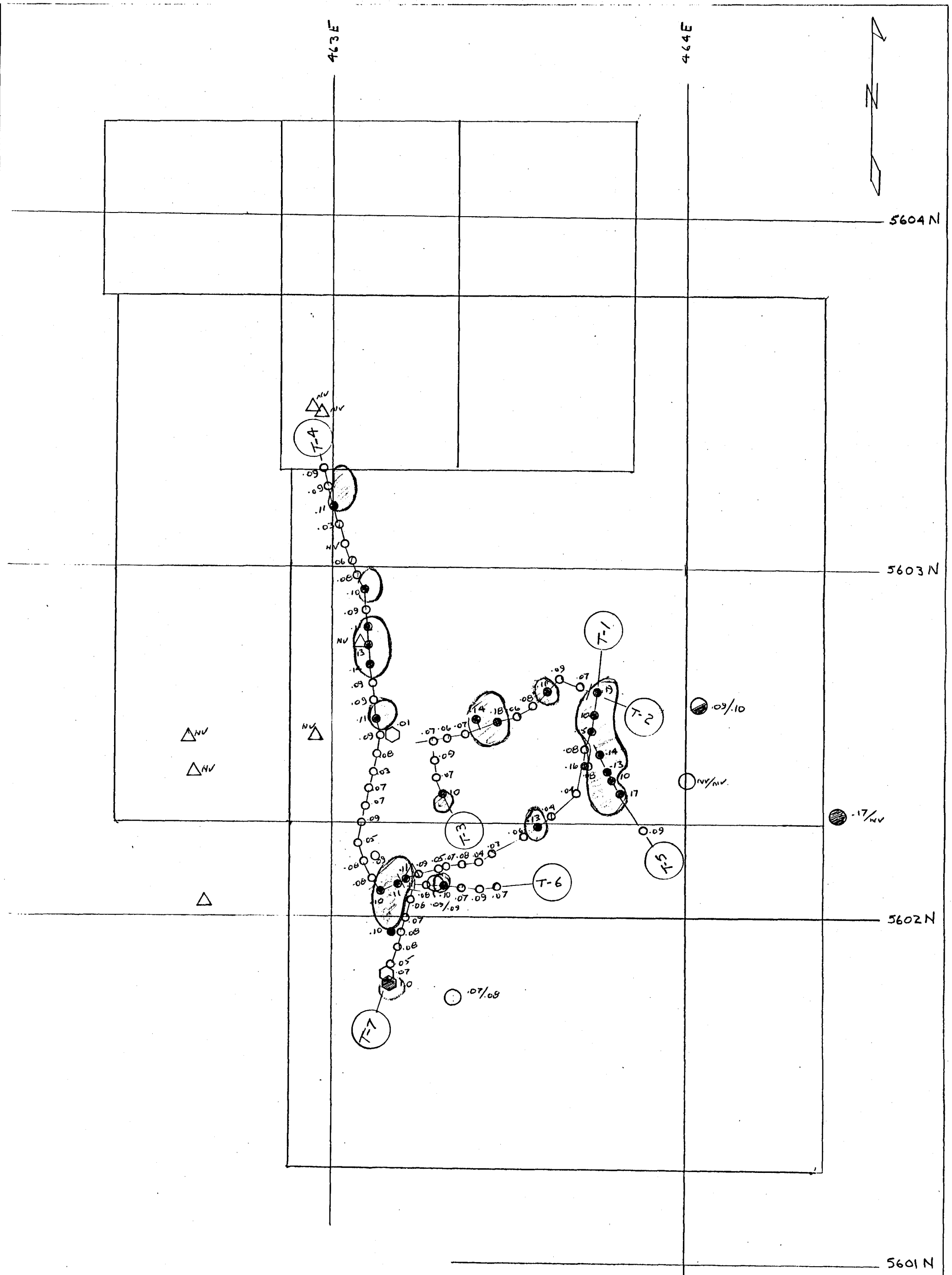
DATE: NOVEMBER 1989

0 100 200 300 400 500 Metres

SCALE 1:10,000

RJA

○ > 1500 ppm



☉ >.10%

FIGURE 13

R. JORDAN & ASSOCIATES LTD.	
POTASSIUM (%)	
ANGEL CLAIMS	LILLOOET M.D.
NTS 92 J12E	
DRAWN BY: R. JORDAN P. ENG.	
DATE: NOVEMBER 1989	
0 100 200 300 400 500 Metres	
SCALE 1:19,000	<i>RJA</i>