

GEOLOGICAL and GEOCHEMICAL REPORT

on the

ROUGH PROPERTY, NE British Columbia

ROUGH 1 to 9 MINERAL CLAIMS

by

A.J. Boronowski

July 1- 9, 1982

August 19-24, 1982

Liard Mining District

N.T.S. 94L/1E & 8E

58°16'N 126° 10'W

owned and operated by:

KIDD CREEK MINES LTD.

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,693**

September, 1982

Vancouver, B.C.

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## INTRODUCTION

### Location, Access and Terrain

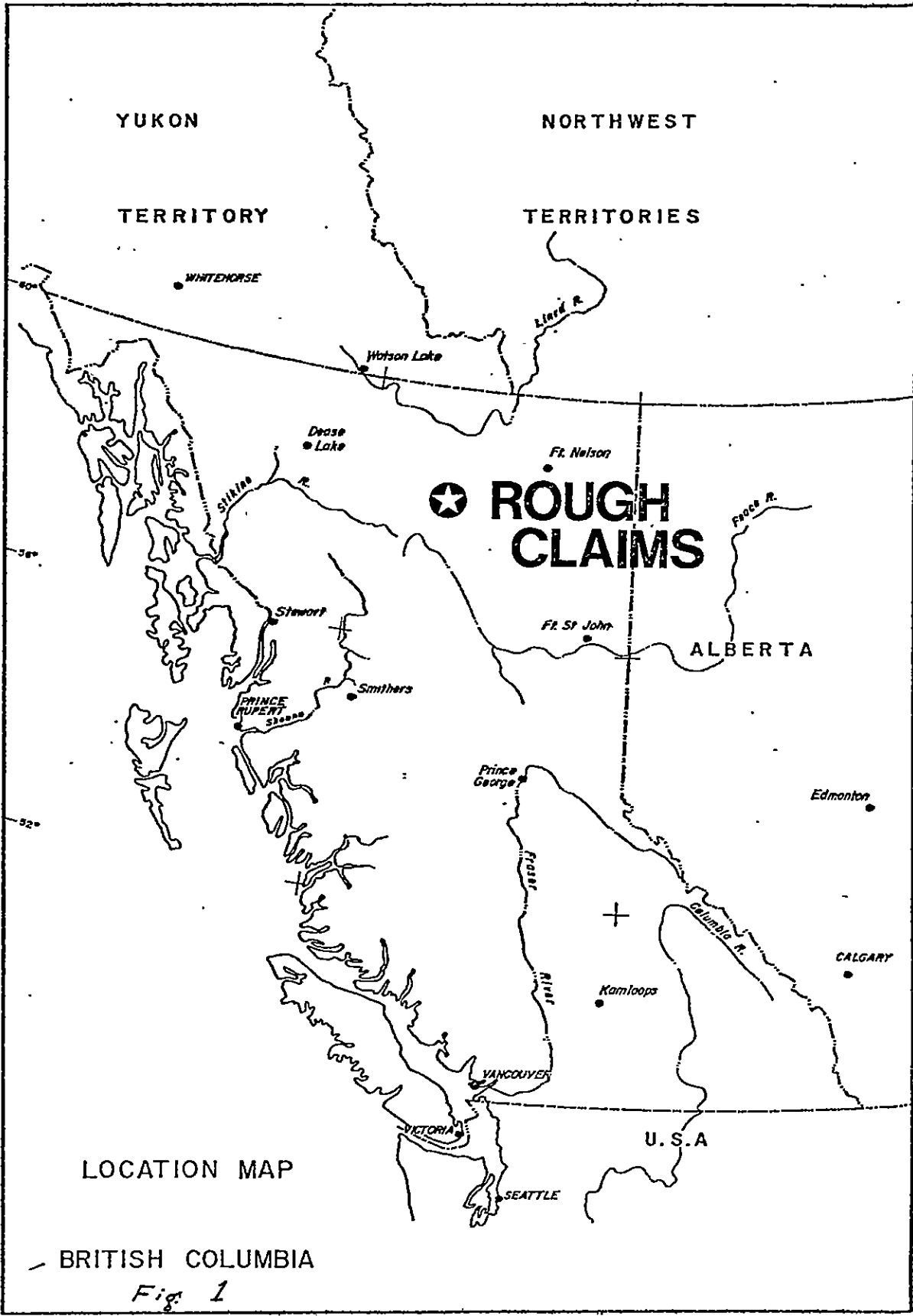
The Rough property is situated 220 kms southeast of Watson Lake. The property is located within the NTS 94L/8E at 58°16'N and 126°10'W. Refer to Figures 1 & 2.

Fixed wing support and supplies originate from Watson Lake. Previously, the mobilization and demobilization were directed through Muncho Lake at mile 464 on the Alaska Highway to Mayfield Lake, which is 20 km southeast of the property, and 95 km south of Muncho Lake. An outfitters airstrip (305 m long) situated 50 km east of the property is suitable for a Twin Otter landing. The property is accessible by helicopter and a pack horse trail.

"From the broad Gataga River floor, at 800 m elevation, the hills rise abruptly to the west, to a northwest trending range of limestone peaks over 2000 m high. A parallel ridge of limestone cliffs and spires lies 4 km further west. The western side of the second limestone ridge drops precipitously to 1400 m elevation, into the valley of the northwesterly flowing tributary of Through Creek. The property lies between the two limestone ridges in an area of east-west trending, rounded, hog back, grass covered ridges. The ridges are deeply incised by small tributary creeks which drop precipitously down to the valley floors. The grass and scrub covered sides of the ridges are very steep. In the northern portion of the property the creeks drain to the north and east, directly to the Gataga River. The creek draining the southern portion of the property describes an arc looping east, south, and then west, to join up with the northwest flowing tributary of Through Creek.

There is more than 70% outcrop exposure of the limestone. Large talus slopes are found at the foot of cliffs. Alpine soil over

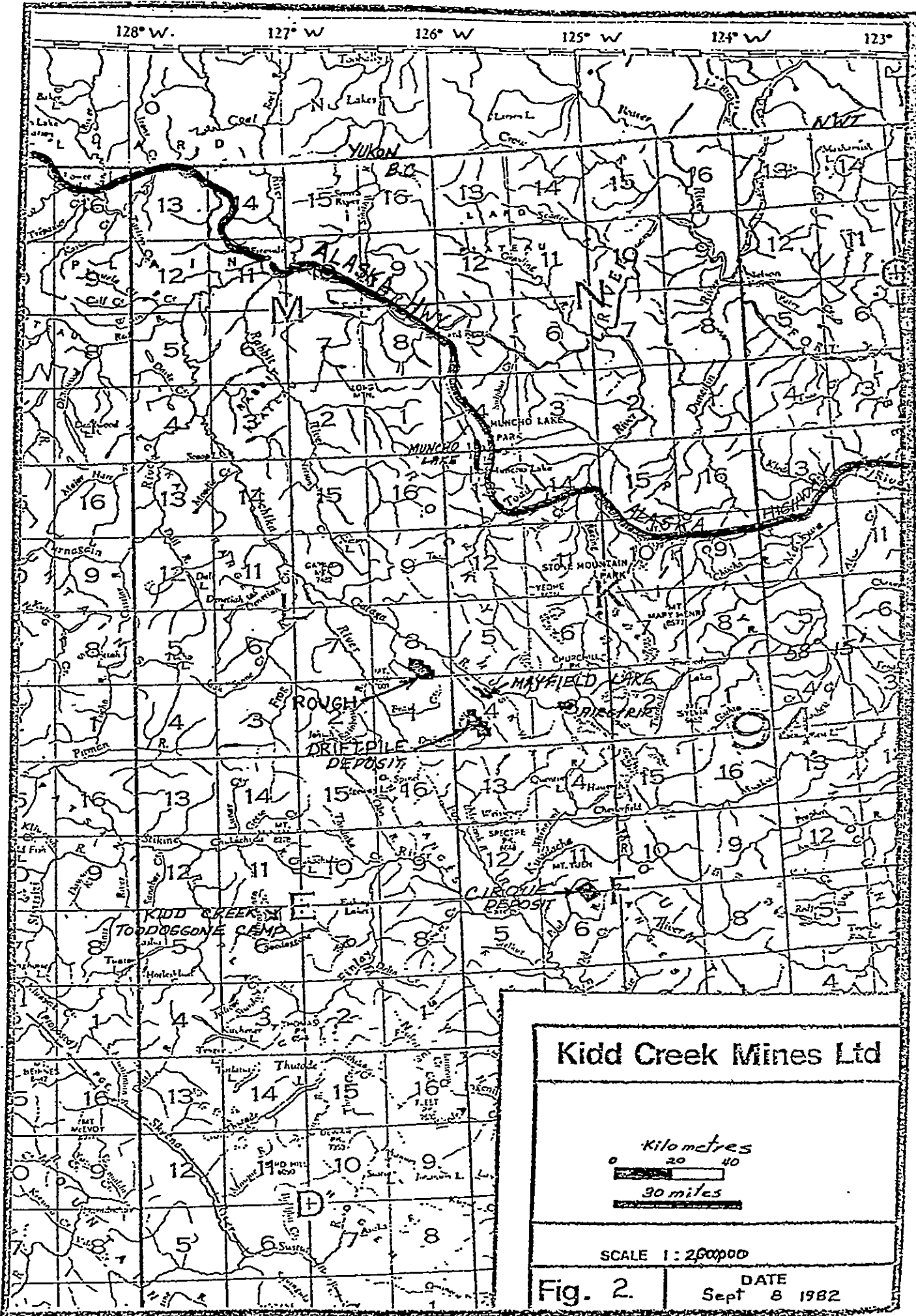




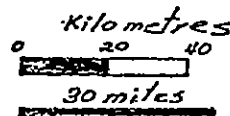
LOCATION MAP

BRITISH COLUMBIA

Fig. 1



**Kidd Creek Mines Ltd**



SCALE 1:250000

Fig. 2

DATE  
Sept 8 1982

the shale is thin and poorly developed. Outcrop is largely restricted to the incised gullies.

The tree line at the north end of the property lies at 1600 m elevation. To the south, it lies below 1500 m." P. Boyle, 1979.

### History

The Rough property was staked as a result of the "Tg Kechika Regional Reconnaissance Project 1976", which discovered stratabound Zn/Pb mineralization hosted by black cherty shales within carbonates, while following up stream silt anomalies.

The 1977 program examined the discovery showings in detail and completed a reconnaissance geochemical survey to define the mineralized trend. Three trenches were excavated in the discovery 'Waterfall area'. A total of 650 soil samples were analysed for Cu, Pb and Zn. These samples were collected from a surveyed grid with 100 and 200 metre line-spacing and 50 and 100 metre intervals between samples. A total of 40.65 line-km were completed. Numerous geochemically anomalous zones were defined. Trenching of the limestone/shale contact indicated that the grade of Zn/Pb mineralization varied considerably within each trench and that the mineralization was not continuous along strike.

The 1978 program was designed to examine, in detail, anomalies outlined by the 1977 program, extend the soil survey grid, trench discovered mineralization and conduct a geophysical survey over the area of interest. The soil survey outlined several zinc anomalies along the trend of the limestone/shale contact, and a lead anomaly (>1000 ppm) which covers an area 350 m by 150 m. The lead anomaly was believed to be underlain by Devonian-Mississippian shales of the Gunsteel Formation. Two trenches, located on the perimeter of the anomaly, failed

to explain the Pb anomaly; however, abundant nodular shales and siliceous barite veins were discovered. The geophysical orientation survey, totalling 24 line-km of Mag., Shootback EM, VLF (Radem Horizontal Loop) EM and I.P., was completed over the zinc-rich mineralization at the limestone/shale contact. The sphalerite did not have a detectable geophysical signature. The survey did not cover the lead anomaly within the shales.

#### PROPERTY STATUS

The Rough property, consisting of 9 mineral claims totalling 130 units, is owned and operated by Kidd Creek Mines Ltd.

Rough 1	16 units	expiry Sept. 2, 1983
Rough 2	16 units	expiry Sept. 2, 1986
Rough 3	20 units	expiry Sept. 2, 1984
Rough 4	20 units	expiry Sept. 2, 1987
Rough 5	20 units	expiry Sept. 2, 1983
Rough 6	20 units	expiry July 8, 1983
Rough 7	12 units	expiry July 8, 1983
Rough 8	1 unit	expiry July 8, 1985
Rough 9	5 units	expiry July 8, 1983

Assesment credit has been filed for 1982, bringing the claims to the above listed expiry dates.

#### CLAIMS UPON WHICH WORK WAS PERFORMED

Claim 1	Geology	Geochemistry
Claim 2	Geology	-
Claim 3	Geology	Geochemistry
Claim 4	Geology	Geochemistry
Claim 5	Geology	Geochemistry
Claim 6	Geology	Geochemistry
Claim 7	Geology	Geochemistry
Claim 8	-	-
Claim 9	Geology	-

SUMMARY OF WORK COMPLETED IN 1982

July 1-9 (inclusive)

- a) Located old pickets, trenches and claim posts and plotted this data on the new orthophoto maps (1:5000 scale) in order to re-establish the grid and have better control at delineating the 'Pb anomaly'.
- b) Examined the trenches and concluded on the potential of the 'Waterfall showings', situated along the limestone/shale thrust contact.
- c) Survey picketed the area underlying the 'Pb anomaly' and geochemically sampled three separate grid lines in order to verify the 'Pb anomaly' location and test a geochemical hypothesis. Lines 246+00N and 244+00N were rock chip sampled over 10 m intervals between 159+00E and 156+00E. Line 242+50N was soil sampled at every 10 m station between 155+00E and 159+00E. Another 20 rock samples, 22 soil samples and 3 silt stream samples were obtained from geologically favourable areas elsewhere on the property. All rock and silt samples were analyzed for Pb, Zn, Ag, Ba and the soils for Pb, Zn, Ag, Ba, Tl.
- d) The main areas of interest and their immediate extension were mapped at 1:5000 scale.

August 19-24 (inclusive)

- a) Geologically mapped the remainder of the property at 1:5000 and sampled favourable stratigraphy.

SAMPLE NUMBER	ELEMENT UNITS	Pb PPM	Zn PPM	As PPM	Ba PPM	
R B920-82-001		34	84	0.3	640	
R B920-82-002		14	105	0.6 > 20000		
R B920-82-003		42	111	0.4 > 20000		
R B920-82-004		144	21	0.3	9520	
R B920-82-005		111	17	0.4	1110	
R B920-82-006		59	9	0.8	1050	
R B920-82-007		56	8	0.6	980	
R B920-82-008		23	9	0.7	910	
R B920-82-009		119	33	0.3	750	
R B920-82-010		91	80	0.2	700	
R B920-82-011		80	19	0.3	790	
R B920-82-012		68	19	0.3	850	
R B920-82-013		89	25	0.4	1560	
R B920-82-014		55	34	0.2	15500	
R B920-82-015		85	53	0.2	1550	
R B920-82-016		75	39	0.3	1450	
R B920-82-017		107	8	0.3	1250	
R B920-82-018		108	21	0.2	1120	
R B920-82-019		98	855	0.2	960	
R B920-82-020		216	440	0.2	1450	
R B920-82-021		206	18	0.2	940	
R B920-82-022		270	8	0.4	970	
R B920-82-023		226	8	0.3	930	
R B920-82-024		51	319	0.4	1430	
R B920-82-025		65	262	0.4	2610	
R B920-82-026		77	96	0.4	2920	
R B920-82-027		105	65	0.5	18200	
R B920-82-028		167	22	0.4	2350	
R B920-82-029		102	52	0.4	2460	
R B920-82-030		62	116	0.4	7050	
R B920-82-031		49	81	0.4	20000	
R B920-82-032		27	55	0.7	780	
R B920-82-033		790	178	0.4	610	
R B920-82-034		194	25	0.4	1080	
R B920-82-035		199	28	0.3	770	
R B920-82-036		352	11	0.2	970	
R B920-82-037		248	23	0.2	770	
R B920-82-038		290	14	0.2	750	
R B920-82-039		376	61	0.5 > 20000		
R B920-82-040		308	79	0.4	1980	
R B920-82-041		196	186	0.2	2020	
R B920-82-042		99	535	0.4	3460	
R B920-82-043		160	273	0.4	15500	
R B920-82-044		165	191	0.4 > 20000		
R B920-82-045		132	199	0.4 > 20000		
R B920-82-046		89	173	0.4 > 20000		
R B920-82-047		262	139	0.4	8230	
R B920-82-048		229	147	0.3 > 20000		
R B920-82-049		97	260	0.4 > 20000		
R B920-82-050		171	199	0.3 > 20000		
R B920-82-051		190	151	0.2	13000	
R B920-82-052		242	104	0.4 > 20000		
R B920-82-053		338	110	0.4	6640	
R B920-82-054		65	199	0.2 > 20000		
R B920-82-055		141	178	0.4	8710	
R B920-82-056		23	255	0.4 > 20000		
R B920-82-057		34	322	0.4 > 20000		
R B920-82-058		28	405	0.4 > 20000		
R B920-82-059		31	358	0.2 > 20000		
R B920-82-060		43	254	0.3 > 20000		
R B920-82-061		346	344	0.4	15400	
R B920-82-062		228	317	0.2	1610	
R B920-82-063		170	44	0.2	970	
R B920-82-064		12	106	0.6	11700	
R B920-82-065		47	266	0.4	7370	
R B920-82-066		117	226	0.2	910	
R B920-82-067		186	200	1.4	1400	
R B920-82-068		110	128	0.3	3660	
R B920-82-069		231	115	0.5	2360	
R B920-82-070		535	56	0.2	0.5	770
R B920-82-071		90	55	0.2	6.8	3850
R B920-82-072		269	56	0.2	2.5	1910
R B920-82-073		235	28	0.2	0.6	490
R B920-82-074		470	22	0.8	0.9	790
R B920-82-075		260	1525	1.8	2.1	860
R B920-82-076		45	128	0.2	4.5	> 20000
R B920-82-077		30	90	0.2	6.0	> 20000
R B920-82-078		76	540	2.4	2.8	1290
R B920-82-079		17	71	0.6	1.6	> 20000
R B920-82-081		8	273	0.4	2.0	> 20000

SAMPLE NUMBER	ELEMENT UNITS	Pb PPM	Zn PPM	As PPM	Tl PPM	Ba PPM
S A920-82-001		51	3980	0.9	4.0	5000
S A920-82-002		112	945	1.1	5.0	6970
S A920-82-003		167	1385	0.9	3.8	8770
S A920-82-004		33	6300	0.2	1.2	700
S A920-82-005		34	7760	0.2	1.7	700
S A920-82-006		33	7510	0.2	2.0	700
S A920-82-007		116	660	0.9	2.6	1420
S A920-82-008		207	173	2.0	2.0	1880
S A920-82-009		180	268	1.4	4.8	2030
S A920-82-010		301	206	0.9	4.5	2000
S A920-82-011		287	316	1.1	5.1	2020
S A920-82-012		290	277	1.2	5.0	1980
S A920-82-013		352	410	0.9	5.2	2250
S A920-82-014		415	405	0.9	5.1	2220
S A920-82-015		510	570	1.0	6.5	2380
S A920-82-016		460	550	1.1	7.8	2790
S A920-82-017		755	760	0.8	8.7	2600
S A920-82-018		79	201	2.2	4.2	18200
S A920-82-019		68	247	2.3	4.0	13800
S A920-82-020		83	362	1.8	4.3	12500
S A920-82-021		93	220	2.1	4.0	15800
S A920-82-022		80	250	2.2	4.1	10600
S A920-82-023		530	1080	0.6	9.0	3470
S A920-82-024		475	560	1.0	5.1	1940
S A920-82-025		1020	790	0.8	7.8	2890
S A920-82-026		1710	3230	1.2	15.0	4030
S A920-82-027		2590	1555	1.4	13.0	3110
S A920-82-028		1785	1490	1.1	16.0	3590
S A920-82-029		2630	2065	1.2	17.0	3360
S A920-82-030		1895	1300	1.0	14.0	3620
S A920-82-031		2000	1260	1.2	16.0	3690
S A920-82-032		1950	970	1.0	12.0	3220
S A920-82-033		2035	975	1.2	15.0	3610
S A920-82-034		1580	735	1.5	11.0	3000
S A920-82-035		2630	895	1.2	15.0	4010
S A920-82-036		3250	890	1.0	17.0	4020
S A920-82-037		1880	680	1.1	14.0	4020
S A920-82-038		2540	765	0.9	21.0	4810
S A920-82-039		1775	740	0.7	14.0	3400
S A920-82-040		1130	675	0.7	19.0	4260

SAMPLE NUMBER	ELEMENT UNITS	Pb PPM	Zn PPM	As PPM	Tl PPM	Ba PPM
S A920-82-500		27	920	0.7	2.5	> 2000
S A920-82-501		28	77	2.0	3.4	1207
S A920-82-502		22	172	0.7	1.5	> 2000
S A920-82-503		15	69	0.8	1.9	> 2000
S A920-82-504		18	720	1.0	3.2	> 2000
S A920-82-505		36	180	1.0	4.0	> 2000
S A920-82-506		33	235	1.4	5.0	> 2000
S A920-82-507		13	389	0.6	3.1	> 2000
S A920-82-508		15	505	0.5	3.2	> 2000
S A920-82-509		28	196	2.2	2.8	> 2000
S A920-82-510		28	239	1.5	2.5	> 2000
T C920-82-001		25	915	0.7		408
T C920-82-002		47	630	0.9		595
T C920-82-003		67	2530	1.0		> 2000
S A920-82-041		2360	1095	1.2	15.0	44
S A920-82-042		1340	3490	0.9	20.0	48
S A920-82-043		480	645	1.0	10.0	26
S A920-82-044		910	2520	1.2	17.0	39
S A920-82-045		1440	387	1.6	15.0	32
S A920-82-046		1875	565	1.2	11.0	26
S A920-82-047		890	1495	1.0	11.0	28
S A920-82-048		560	4990	11.0	8.2	47
S A920-82-049		151	2080	5.7	6.8	41
S A920-82-050		100	2570	3.0	4.0	29
S A920-82-051		165	4560	7.2	8.3	47
S A920-82-052		154	3910	5.6	8.2	54

## DETAILED TECHNICAL DATA AND INTERPRETATION

### GEOLOGY

#### Regional Setting

The Rough property is located within the western half of the Rocky Mountain Fold and Thrust Belt of northeast B.C. It lies within the Gataga camp (Driftpile and Cirque deposit) of the Kechika Trough, which extends northwest to form part of the Selwyn Basin. The property is underlain by basinal-facies clastic and carbonate rocks which range in age from Cambrian to Mississippian. The folded units strike northwesterly, which parallels the regional trend reflected by the structural style of this part of the Rocky Mt. Fold and Thrust Belt. Northeast-directed compressional forces have resulted in the stacking of southwest-dipping thrust plates. The units have undergone tight isoclinal folding with axial planes dipping southwesterly. These folds are often offset by a series of small-scale imbricate thrusts.

#### Property Geology

The emphasis during the 1982 program was to determine the economic potential of the Devonian shales.

The 'Waterfall showing' - limestone/shale contact is a thrust contact where Cambrian limestones have been thrust to the northeast over Silurian shales. Refer to Figure No. 3b 'Geology' which contains inserted cross sections. This Silurian shale locality marks the southwestern limb of a broad overturned synclinal structure with a southwest dipping axial plane. Within this large scale structure the overlying units have been folded to overturned isoclinal folds with southwest dipping axial planes. The structures plunge moderately to the southeast, and therefore as one progresses along strike to the northwest, the amount of Devonian



stratigraphy decreases until only Silurian rocks are exposed on the western property boundary. The intensity of folding is strongest at the limestone-shale thrust contact and the amplitude of the folds decreases to the northeast. The decrease in amplitude of the folds to the NE, combined with topography, has repeated the Lower Devonian stratigraphy over the 'Pb anomaly' and only preserved the lowest section of the favourable Upper Devonian Gunsteel Formation in the saddles of the folds. Also, for this reason, the Upper Devonian has very limited tonnage potential.

#### Stratigraphic section

##### Post Devonian

Q white, massive quartz veining

##### Upper Devonian (Gunsteel Formation)

7 rusty weathering, baritic, black shales. Locally silicified and cherty mudstones. Baritic horizons consist of less than 1.0 cm long nodules of barite and highly siliceous barite bands. Could be part of the Lower or Middle Devonian stratigraphy.

7a a light, greyish-blue, medium-bedded, extremely fine-grained mudstone. Only observed in trench 78-5 and in the vicinity of L156+00 N160+00E.

##### Middle Devonian (generally thin or absent)

6b bright orange weathering, very thin bedded calcareous siltstone.

6a brown to rusty weathering, grey grit to siltstone. A poorly developed turbidity sequence.

##### Lower Devonian

5c bluish weathering, very thinly laminated (pinstriped) black shale.

5b bluish weathering, thinly laminated (bedding) black shales, occasionally contain white bands which represent leached out pyrite bands and replacement of chalcedony. The light bluish and darker

alternating thin laminations are due to the phosphate and chert content.

5a black weathering, thin-bedded, cherty to carbonaceous black shales and mudstones.

#### Silurian (Upper Road River)

- 4b light brown to orange weathering, thin-bedded, light grey calcareous siltstone.
- 4a alternating bands of calcareous and non calcareous siltstones. The base of the unit consists predominantly of calcareous beds and fine-grained black limestone interbeds.

#### Ordovician

- 3 black weathering, thin (<3 cm) bedded black carbonaceous shales.
- 2 zinc-lead bearing cherty shales of the limestone/shale contact. Rusty weathering, medium to dark grey siltstone and shale which has been intensely brecciated and silicified.

#### Cambrian

- 1b light, greyish-blue weathering, massive, medium- to thick-bedded, fine-grained to micritic light grey limestone which has been mylonitized as a result of thrust related stresses.
- 1a Quartzite and calcareous sandstones.

No base metal mineralization was found in the "Pb anomaly" area. Carbonaceous shales and alternating cherty mudstone beds occasionally contain white, vuggy bands, which are thought to have been originally pyrite beds. The pyrite has been leached out and an acid solution developed during this stage promoted precipitation of chalcedony.

Tetrahedrite was observed in white quartz veins, southwest of the Pb anomaly. Figure 3b.

Nodules (approx. 1 cm long) of barite and siliceous barite beds within black pyritic shales yield grab sample assays greater than 20.0% Ba. Figures 3f and 5c.

Calcite, barite-bearing quartz veins which cut foliation and bedding obliquely were observed in Lower Devonian stratigraphy.

#### GEOCHEMISTRY

The old grid lines over the 'Pb anomaly' were re-established by chain and compass and marking old picket site stations. During the course of property mapping, several pickets were found where the station location data was still discernible. These station locations were used to assist in plotting old geochemical data onto the ortho base maps. Only the old silt stream results were not transferable .

A brief soil and rock chip sample survey verified the outline of the 'Pb anomaly' and the geochemical results yielded the following conclusions:

1. The soil geochemical values were generally more than twice the order of magnitude greater than the rock chip geochemical values. It was noted that the Fe content of the soils is unusually high, which would cause scavenging of Pb, Zn and Ag. This phenomena, when combined with anomalous shales, would result in an anomaly such as the 'Pb anomaly'.
2. The 'Pb anomaly' is situated on a steep hillside. Down slope dispersion has extended the anomalous zone a considerable distance. For example, line 242+50N crosses the base of a soil scree at 158+25E. This is the exact point where the Pb anomaly ends.

Geochemical samples were sent to Bondar-Clegg & Co. Ltd. of North Vancouver, where they were crushed, pulverized to -100 size, dried and then the -80 size fraction was used in the following determinations:

Element	Lower Detection Limit	Extraction	Method
Pb	2 ppm	HNO <sub>3</sub> -HCl Hot extr.	AA
Zn	1 ppm	" " " "	AA
Ag	0.1 ppm	" " " "	AA
Tl	0.5 ppm	Mult. Acid Tot. Dig.	Colourmetrics
Ba	2.0 ppm		X-ray Fluor.

#### Soils

Forty-one 'B'-horizon soil samples were collected from line 242+50N at every 10 metre station between line 156+00E and 159+00E and analyzed for Pb, Zn, Ag, Tl and Ba. Twenty-two other soil samples were collected from various locations on the property.

#### Rock Chips

Sixty-two samples, each composed of a 10 metre interval rock chip, were collected from lines 244+00N between 156+00E and 159+00E. Twenty grab samples were collected from various locations on the property.

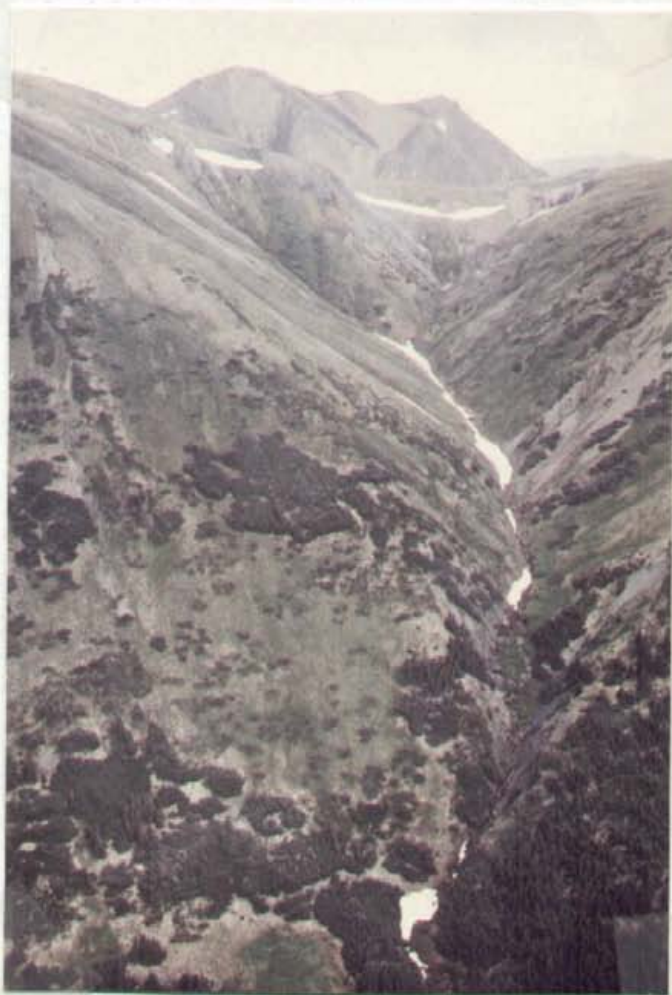
Silts

Three previously untested streams at the east end of the property were sampled. The three streams yielded anomalous barite values and the most southerly creek is anomalous in Zn.

This verified the easterly strike extension of the favourable stratigraphy. Follow-up resulted in the discovery of barite in pyritic shales. No base metal mineralization was found.



A.J. Boronowski, B.Sc.



'Pb anomaly' area

APPENDIX A

STATEMENT OF QUALIFICATIONS

APPENDIX A

STATEMENT OF QUALIFICATIONS

A.J. BORONOWSKI

B.Sc. Geology 1970 University of British Columbia.

Since 1970, employed in mineral exploration or related geological work.



APPENDIX B

STATEMENT OF EXPENDITURES

APPENDIX B

i July 1 - 9, 1982

STATEMENT OF EXPENDITURES

Rough 3 & 4 M.C.'s (Rough-82 Group)

Salaries and Fringe Benefits

A. Boronowski

July 1-9, 1982            9 days @ \$216/day            1,944.00

Greg Hart

July 1-9, 1982            9 days @ \$ 55/day            495.00

Room & Board, Camp Equipment

9 days x 2 men x \$75/day            1,350.00

Helicopter

mobilization - 4.4 hrs @ \$400/hr            1,760.00

4.4 hrs x 26 gals/hr x \$2.50/gal            286.00

demobilization-2.6 hrs @ \$400/hr            1,040.00

2.6 hrs x 26 gals/hr x \$2.50/gal            169.00

Fixed Wing

Ft. St. John - Robb Lake            320.00

Robb Lake - Ft. St. John            320.00

Expense Account

Hotel and travel            300.00

Geochemistry

69 rock chip samples Pb, Zn, Ag, Ba @ \$10.45/sample            721.05

52 soil samples            Pb, Zn, Ag, Ba, Tl @ \$13.65/sample            709.80

3 silt samples            Pb, Zn, Ag, Ba @ \$10.45/sample            31.35

\$9,446.20

APPENDIX B

ii August 19-24, 1982  
STATEMENT OF EXPENDITURES

Salaries and Fringe Benefits

A. Boronowski

August 18, 1982 Vancouver to property	216.00
August 19-24           6 days @ \$216/day	1,296.00
August 25, 1982 property to Vancouver	216.00

Neils von Fersen

August 18, 1982 Calgary to property	216.00
August 19-24           6 days @ \$216/day	1,296.00
August 25 property to Calgary	216.00

Chris Oke

August 20-24           5 days @ \$97	485.00
August 25 property to Vancouver	97.00

Mark Benchley

August 20-24           5 days @ \$77/day	385.00
August 25 property to Vancouver	77.00

Mark McCulloch

August 20-24           5 days @ \$62/day	310.00
August 25 property to Calgary	62.00

Room & Board, Camp Equipment

32 man-days @ \$75/day	2,400.00
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Helicopter

Aug. 19-24   13.2 hrs @ \$400/hr	5,280.00
13.2 hrs x 26 gals/hr x \$2.50/gal	858.00

Fixed Wing

Watson Lake to Mayfield	1,128.25
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APPENDIX B - Cont'd.

ii August 19-24, 1982

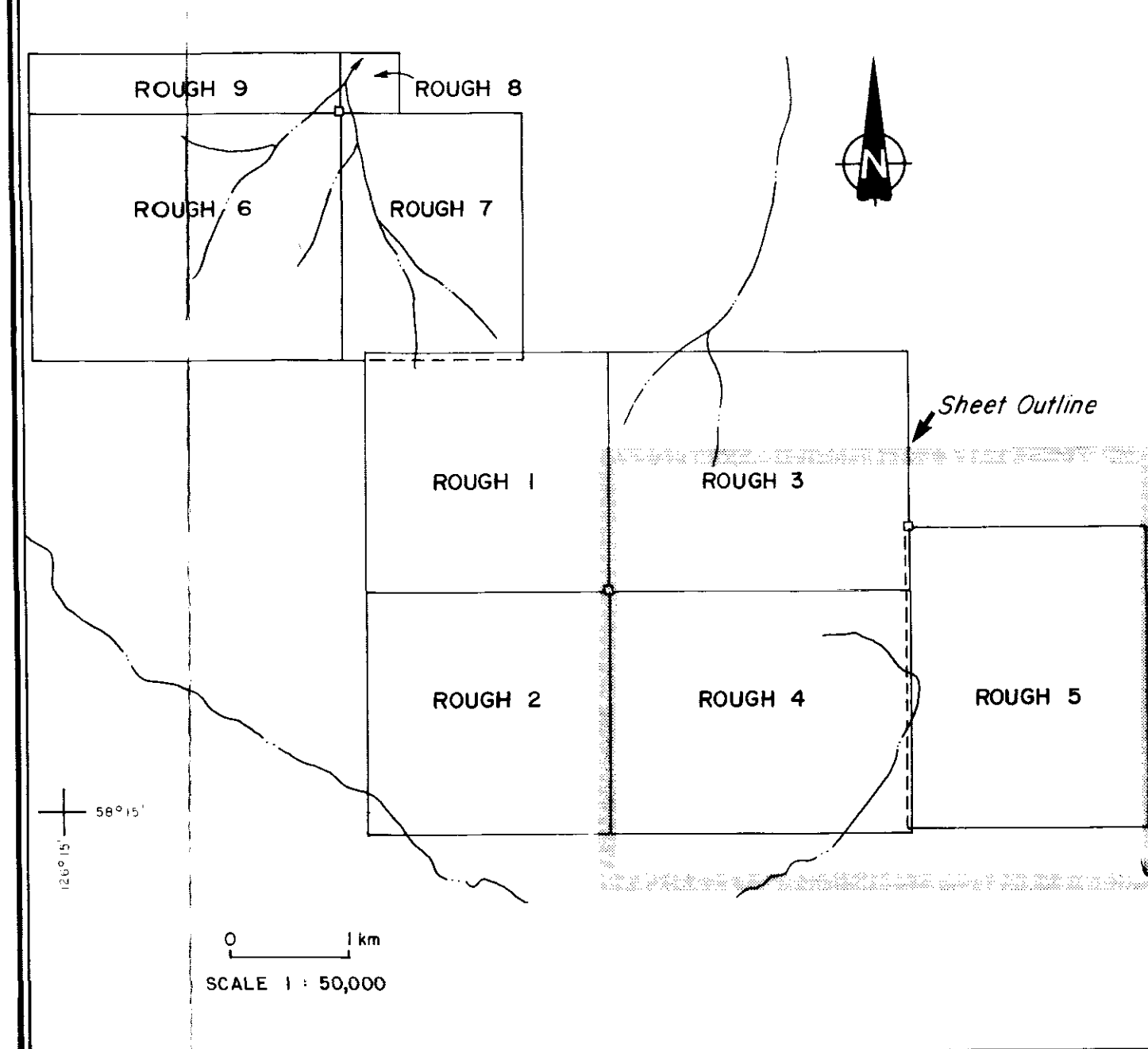
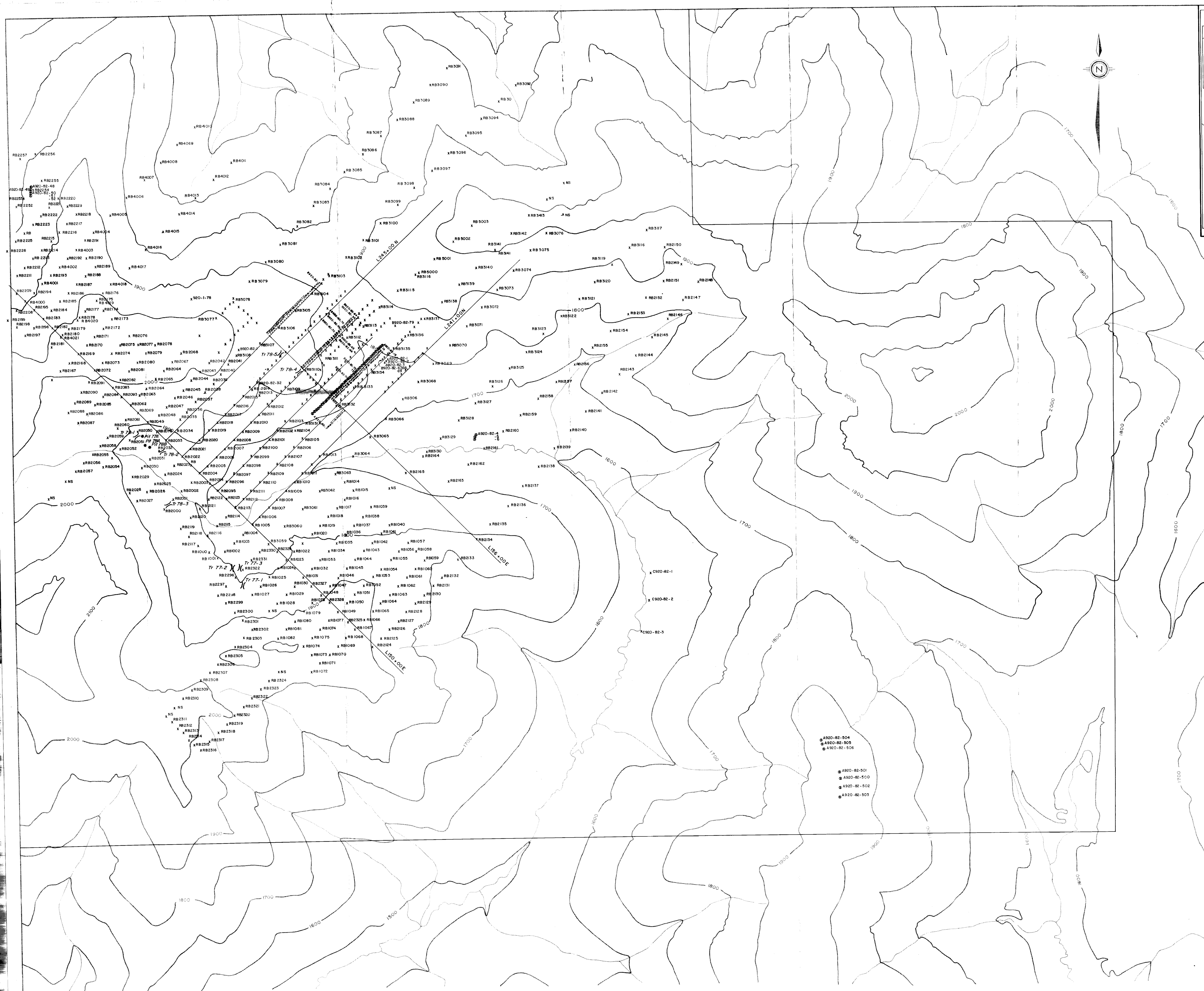
STATEMENT OF EXPENDITURES

Expenses

Airfare - Smithers to Vancouver	490.00
Calgary-Smithers, return	507.00
Vancouver-Smithers, return	262.00

Geochemistry

17 analyses Ag, Pb, Zn	62.90
17 analyses Tl	89.25
17 analyses Ba	68.00
sample prep. & misc. charges	<u>77.60</u>
	\$16,095.00



**LEGEND**

- x RB2156 Soil Sample, prior to the 1982 program
- x B920-82-1 Rock Sample, 1982 program
- x B920-82-4 Rock Chip Sampling, 10m interval e.g. nos. 4-B
- o A920-82-1 Soil Sample, 1982 program
- x C920-82-1 Silt Sample, 1982 program

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,693**

**Kidd Creek Mines Ltd.**

ROUGH CLAIMS  
GEOCHEMISTRY SAMPLE  
LOCATIONS

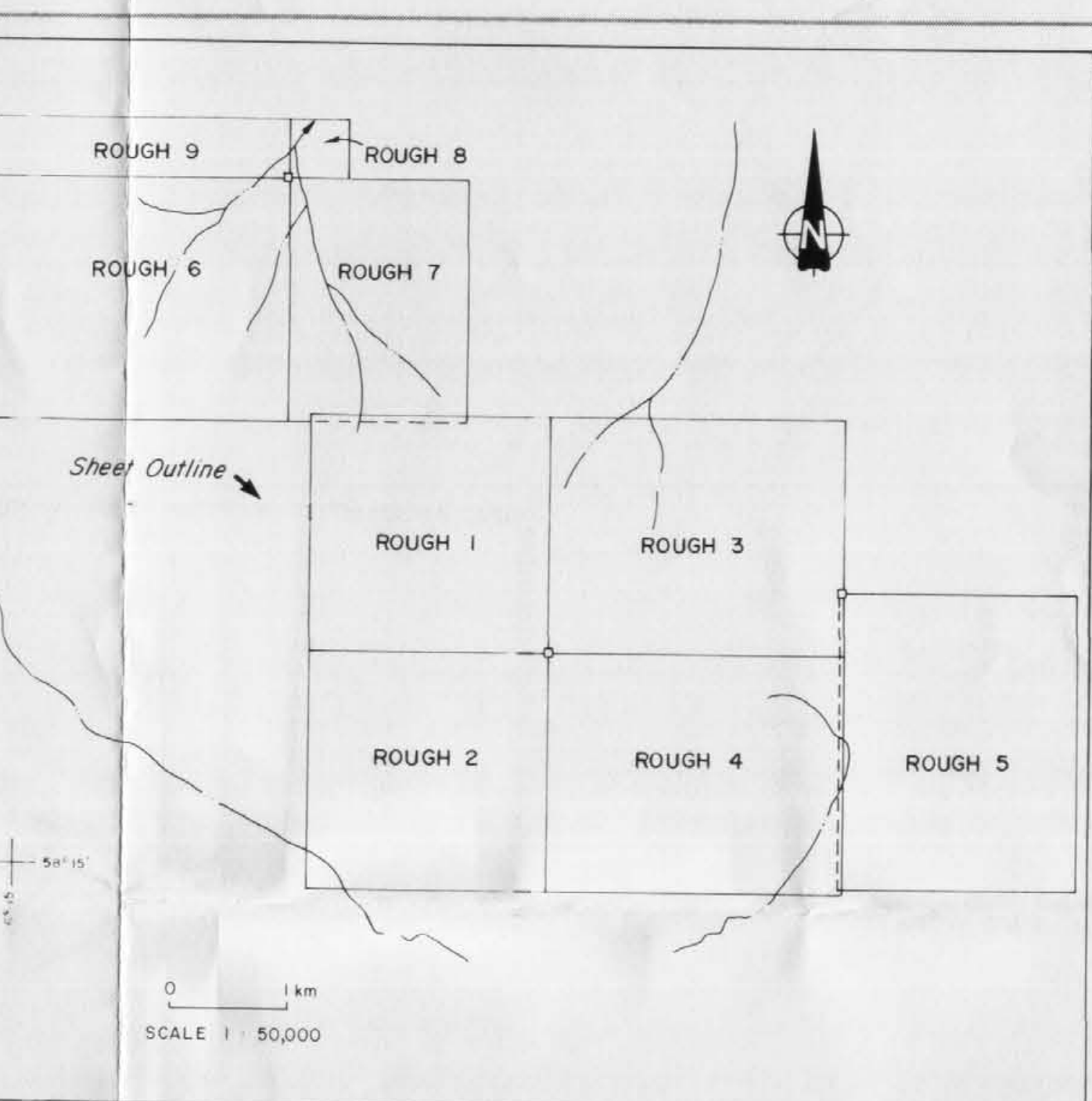
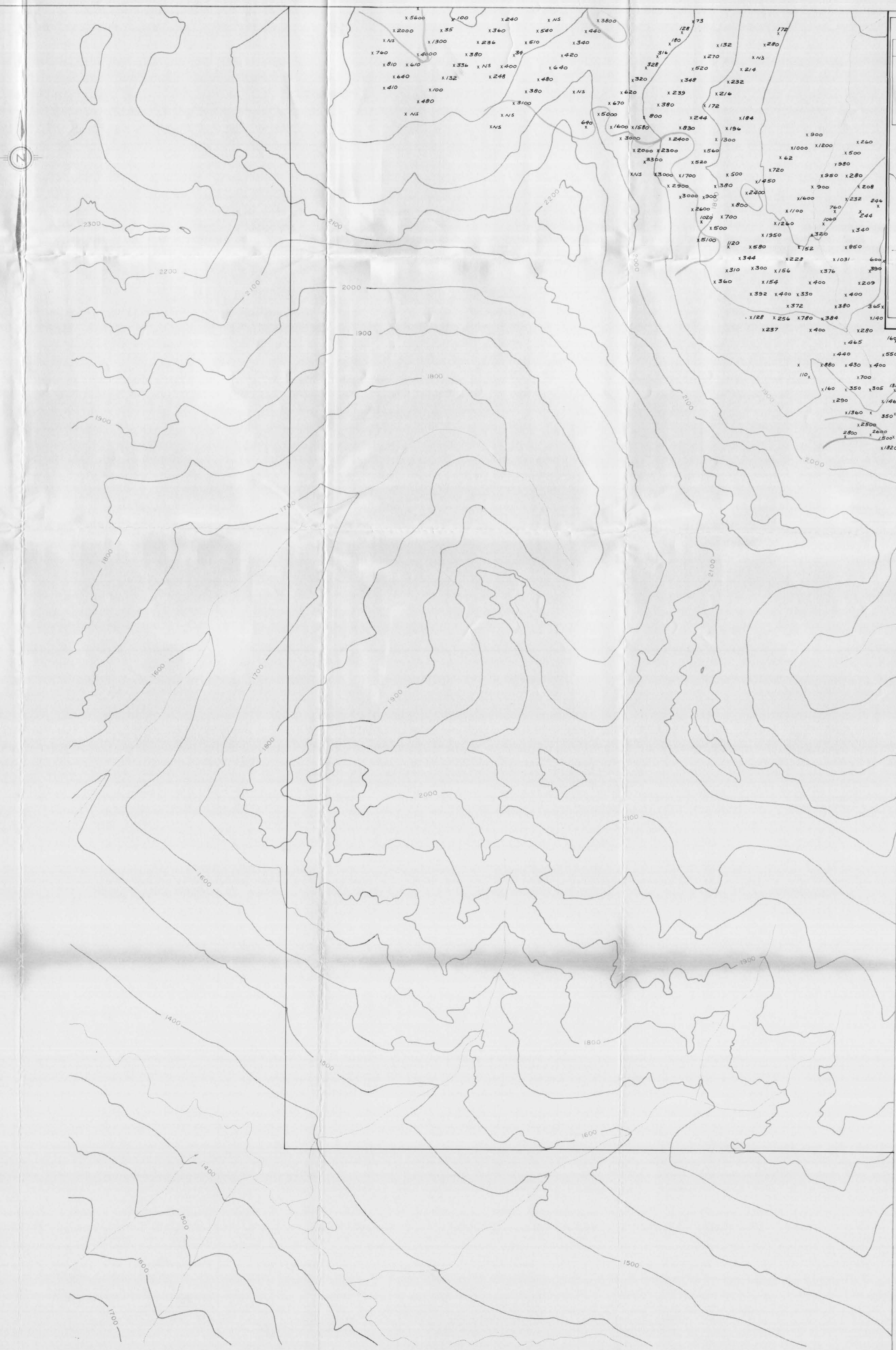
NTS 94/BE Proj 920

WORK BY	DRAWN BY	DATE: JUNE 14, 1982

SCALE IN METRES 1 : 5,000 Contour Interval 100m

Figure: 3a





**LEGEND**

- X 235 Soil Sample, prior to the 1982 program
  - X R200 Rock Sample 1982
  - X C915 Silt Sample 1982
  - R141 Rock Chip Interval Sampled
  - Soil Sample 1982
- 72,000 ppm

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

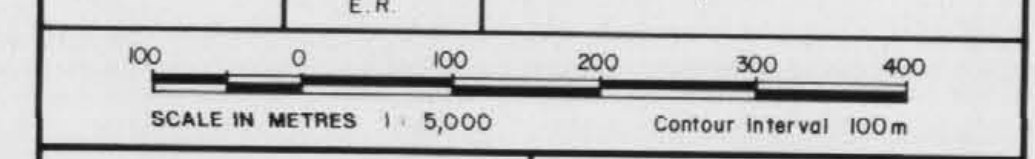
**10,693**

**Kidd Creek Mines Ltd.**

**ROUGH CLAIMS  
GEOCHEMISTRY  
Zn (ppm)**

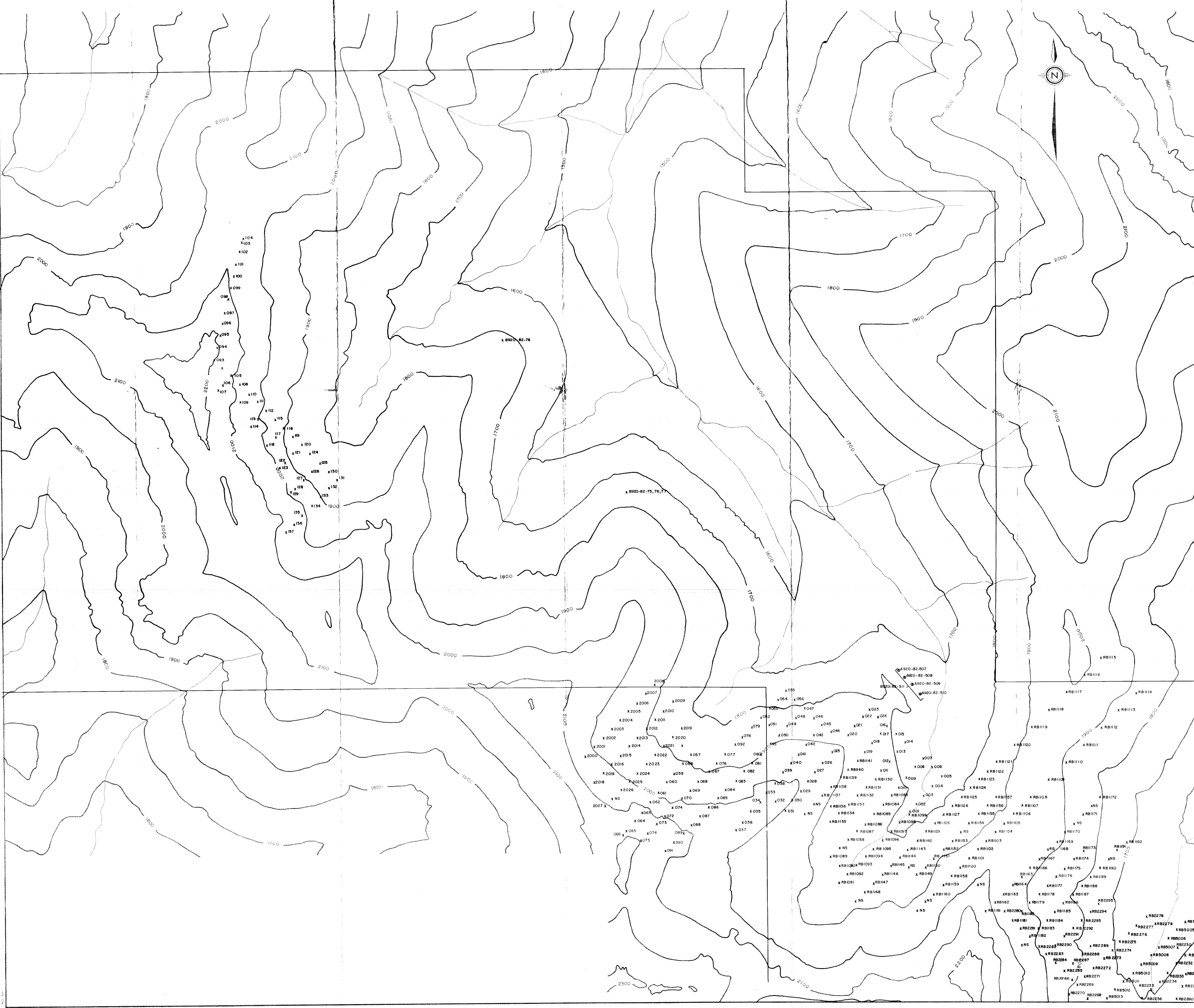
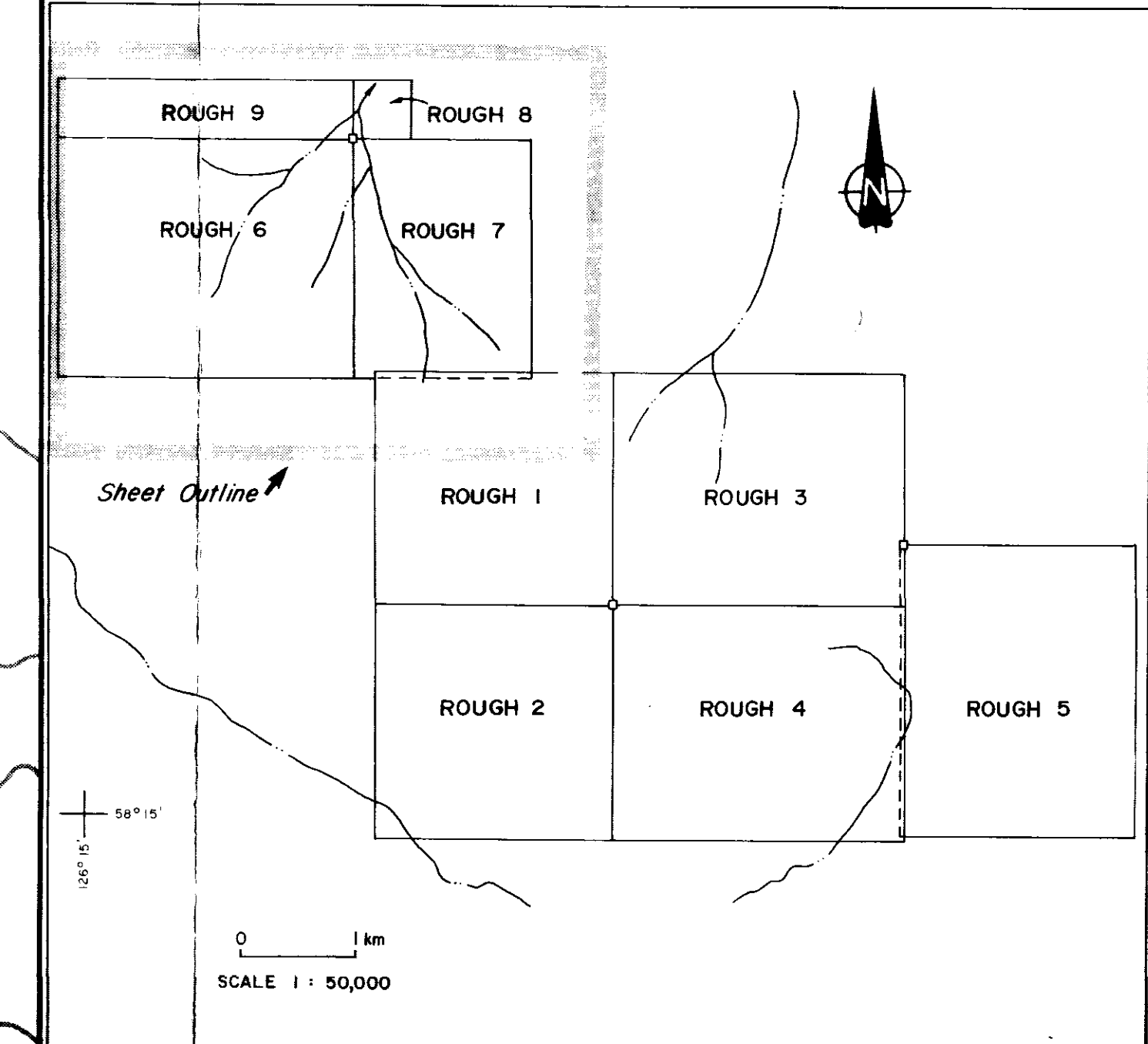
NTS 94/BE Proj 920

WORK BY	DRAWN BY	DATE
	E R	JUNE 14, 1982



**Figure: 4 d**





**LEGEND**

- x RB 2156 Soil Sample, prior to the 1982 program
- x 8920-82-1 Rock Sample, 1982 program
- x 8920-82-2 Rock Chip Sampling, 10m interval e.g. nos. 4-8
- 8920-82-1 Soil Sample, 1982 program
- x 8920-82-1 Silt Sample, 1982 program

**GEOLOGICAL BRANCH ASSESSMENT REPORT**

**10,693**

**Kidd Creek Mines Ltd.**

ROUGH CLAIMS  
GEOCHEMISTRY SAMPLE LOCATIONS

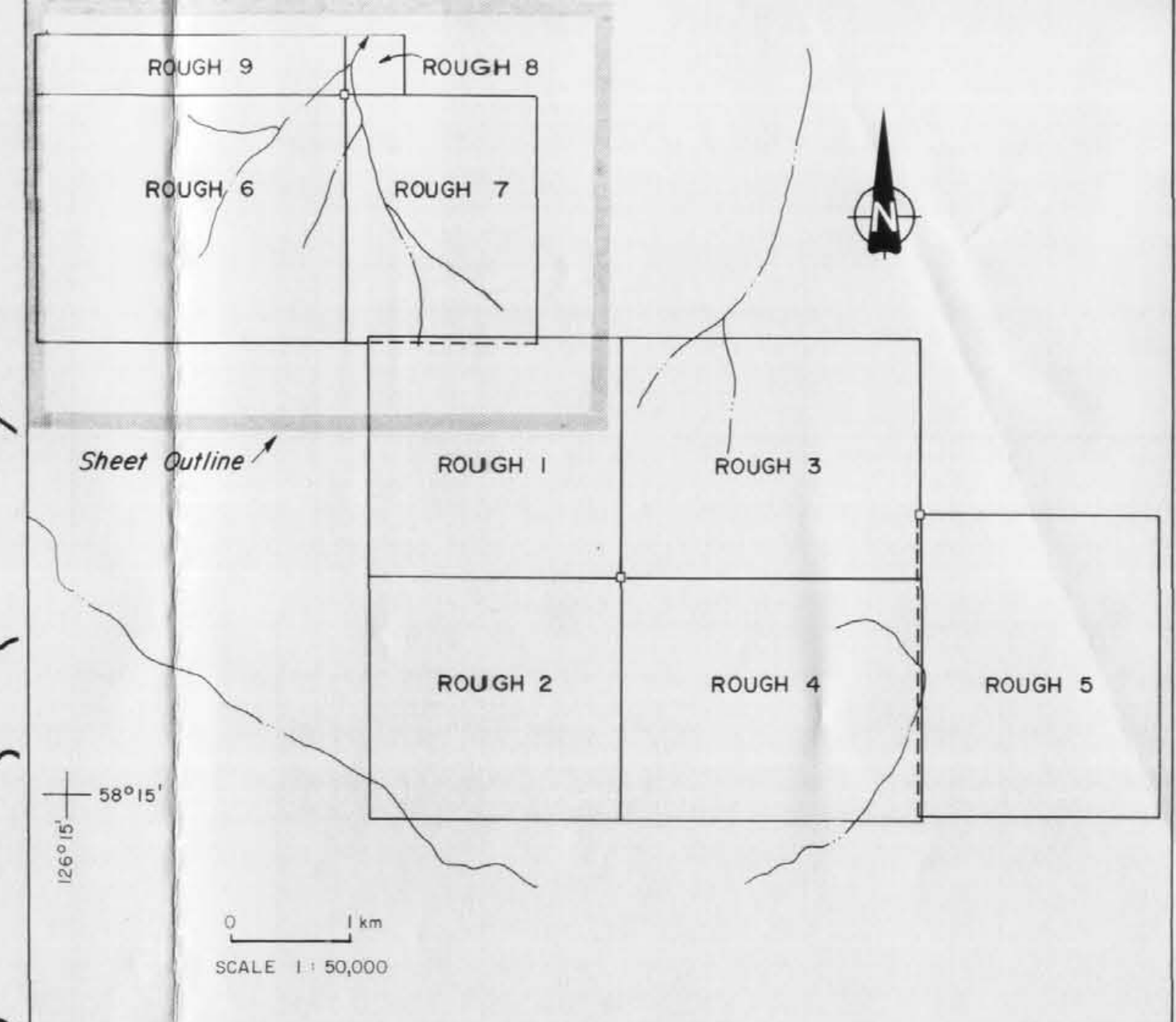
NTS 94/8E Proj. 920

WORK BY	DRAWN BY	DATE: JUNE 14, 1982
		E.R.

SCALE IN METRES 1:5,000 Contour Interval 100m

Figure: 5a





**LEGEND**

- q White quartz veining
- UPPER DEVONIAN (Gunsteel)**
  - 7 Baritic, black shales (could be part of the Middle or Lower Devonian)  
Baritic horizon (1) highly siliceous barite  
(2) nodular barite (<10cm)
  - 7a Light greyish-blue, medium bedded mudstone
- MIDDLE DEVONIAN (Generally thin or absent)**
  - 6b Bright orange weathering, very thin-bedded calcareous siltstone
  - 6a Brown to rusty weathering, grey siltstone
- LOWER DEVONIAN**
  - 5c Bluish weathering, very thinly laminated (pinstriped) black shale
  - 5b Bluish weathering, thinly laminated (bedding) black shales, occasionally contains white bands which represent leached out pyrite
  - 5a Black weathering, thin bedded, cherty to carbonaceous black shales
- SILURIAN (Upper Road River)**
  - 4b Light brown to orange weathering thin bedded, light grey calcareous siltstone
  - 4a Alternating bands of calcareous and non calcareous siltstones, predominantly calcareous; thin limestone interbeds
- ORDOVICIAN**
  - 3 Black weathering, thin (<3cm) bedded, black carbonaceous shale
  - Zinc-lead bearing cherty shale
  - 2 Rusty weathering, medium to dark grey siltstone and shale; brecciation, silicification
- CAMBRIAN**
  - 1b Light greyish-blue weathering, massive, medium to thick-bedded, fine grained to micritic light grey limestone; mylonitization
  - 1a Quartzite; calcareous sandstone

- SYMBOLS**
- Outcrop
  - Pb anomaly <1,000 ppb
  - Claim post
  - Trench
  - Pit
  - Thrust
  - Geological contact known
  - Overturned anticline, syncline
  - ← Cleavage - vertical, inclined
  - Bedding - vertical, inclined
  - Fault - Thrust

**GEOLOGICAL BRANCH ASSESSMENT REPORT**

# 10,693

**Kidd Creek Mines Ltd.**

ROUGH CLAIMS

## GEOLOGY

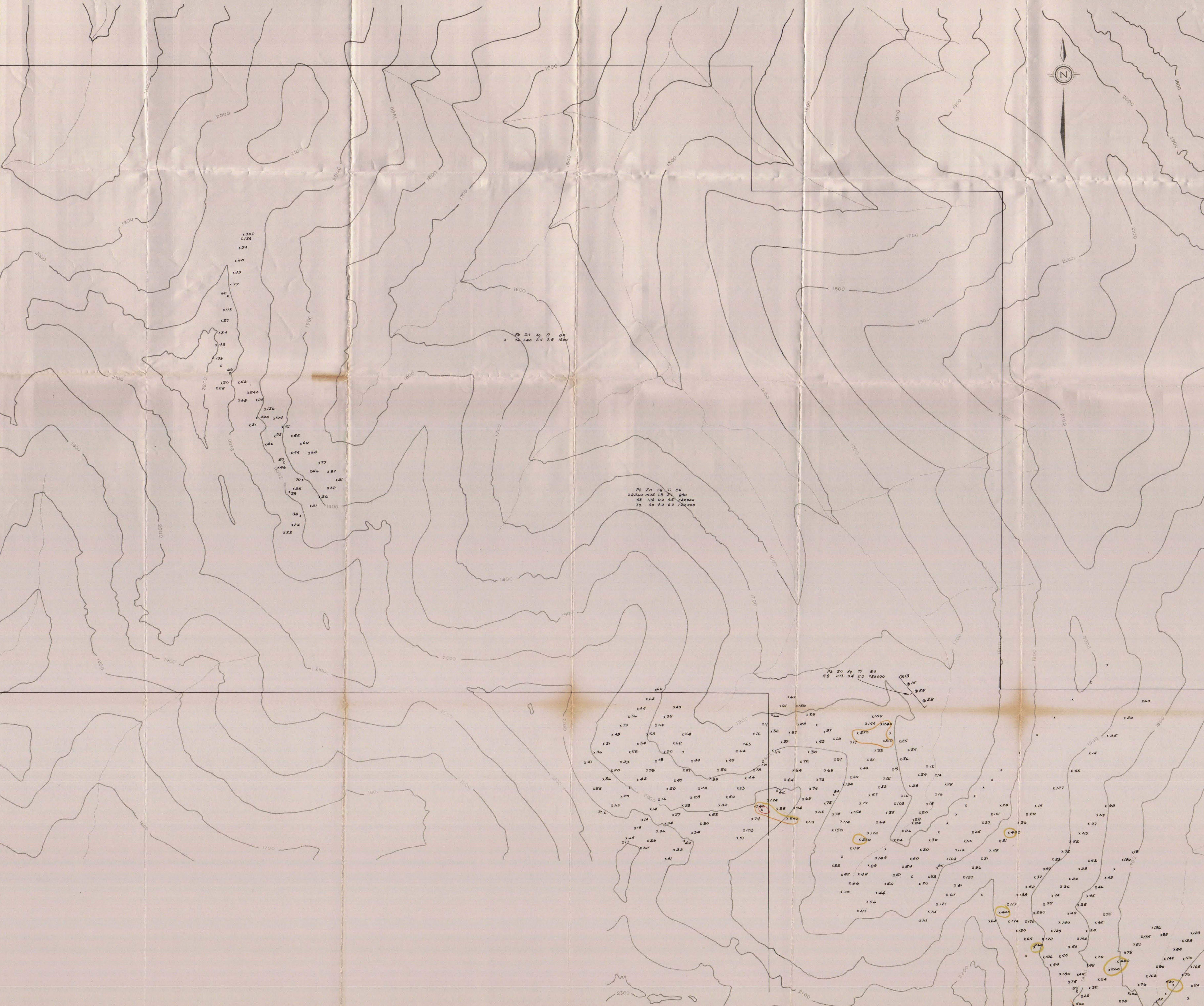
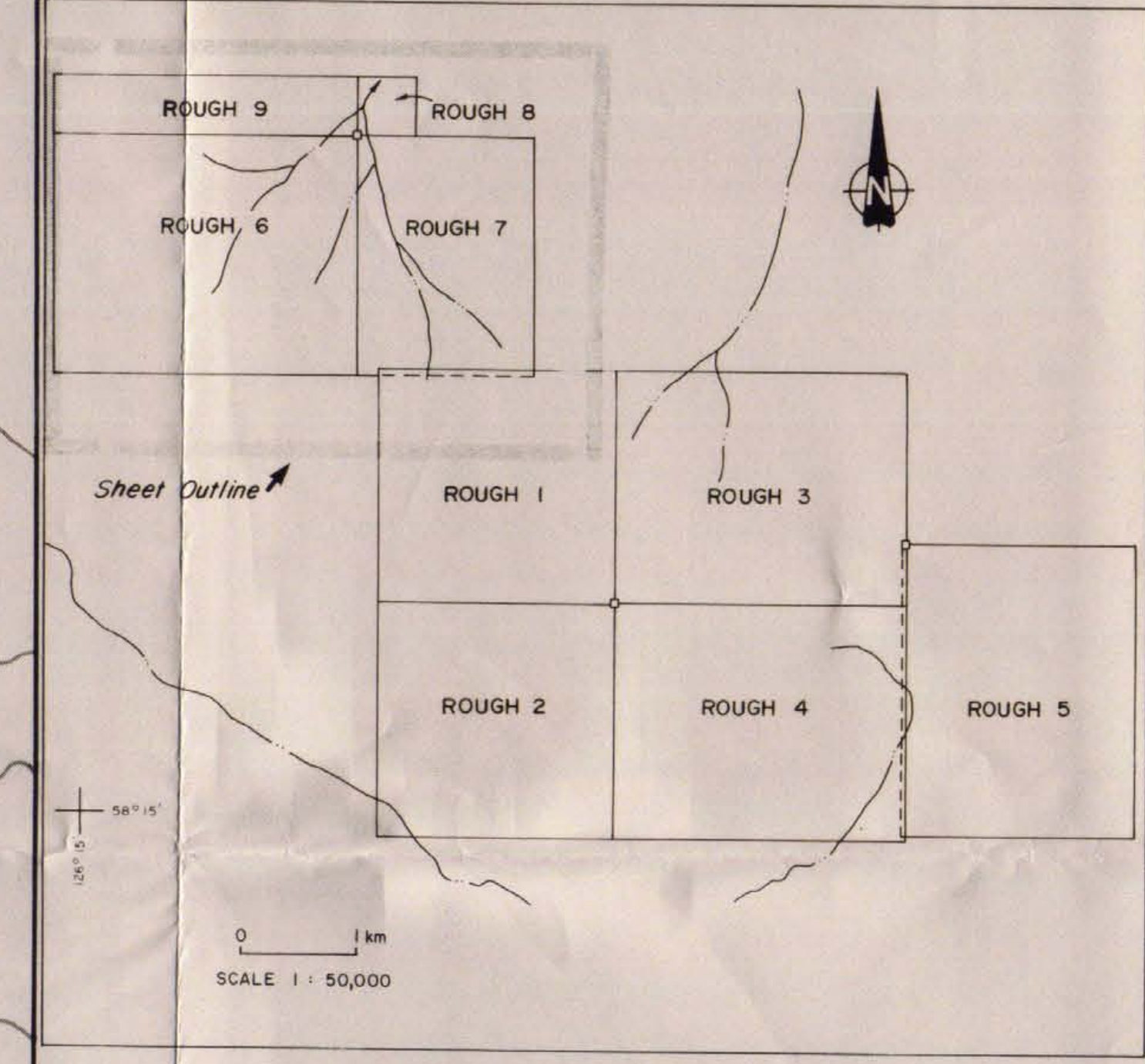
NTS 94/BE Proj 920

WORK BY	DRAWN BY	DATE	SEPTEMBER, 1982
A.B.	E.R.		

SCALE IN METRES 1:5,000 Contour Interval 100m

Figure: 5b





LEGEND

- x 230 Soil Sample, prior to the 1982 program
- x R535 Rock Sample 1982
- x C25 Silt Sample 1982
- R141 Rock Chip Interval Sampled
- Soil Sample 1982
- 200 - 999 ppm
- > 1,000 ppm

GEOLOGICAL BRANCH ASSESSMENT REPORT

10,693

**Kidd Creek Mines Ltd.**

ROUGH CLAIMS  
GEOCHEMISTRY  
Pb (ppm)

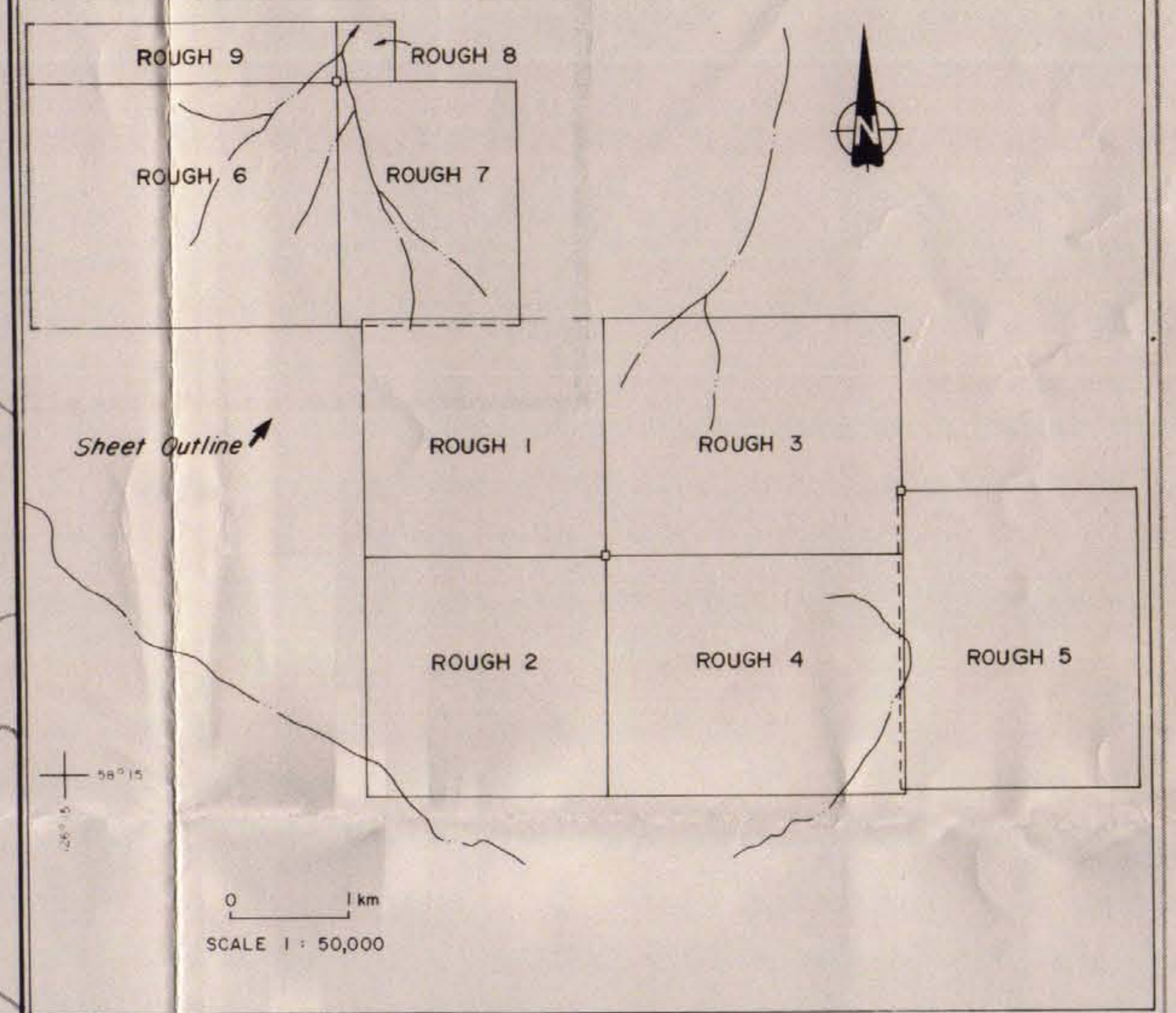
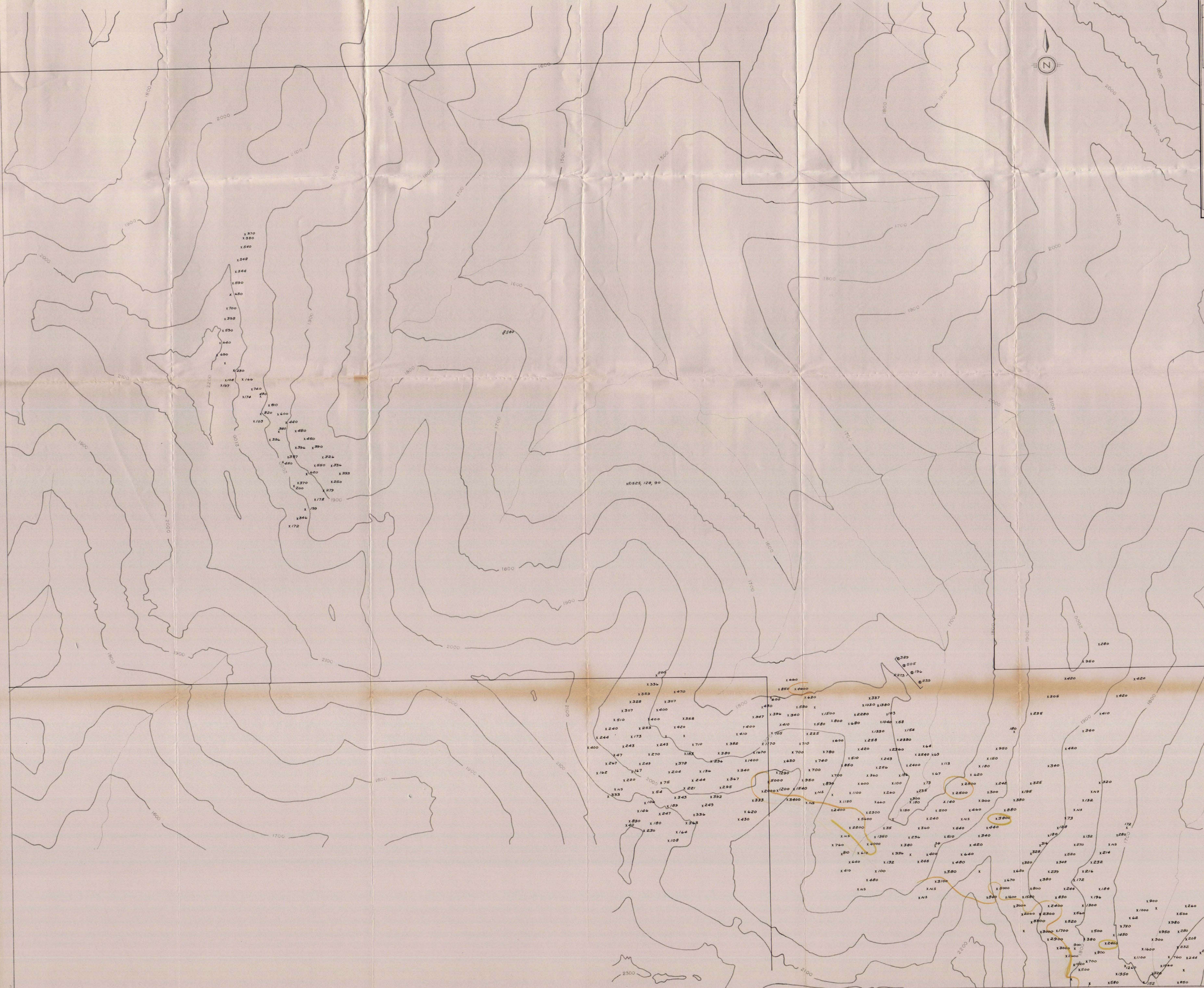
NTS 94/BE Proj. 920

WORK BY	DRAWN BY	DATE
	E.R.	JUNE 14, 1982

SCALE IN METRES 1 : 5,000 Contour Interval 100m

Figure: 5c





**LEGEND**

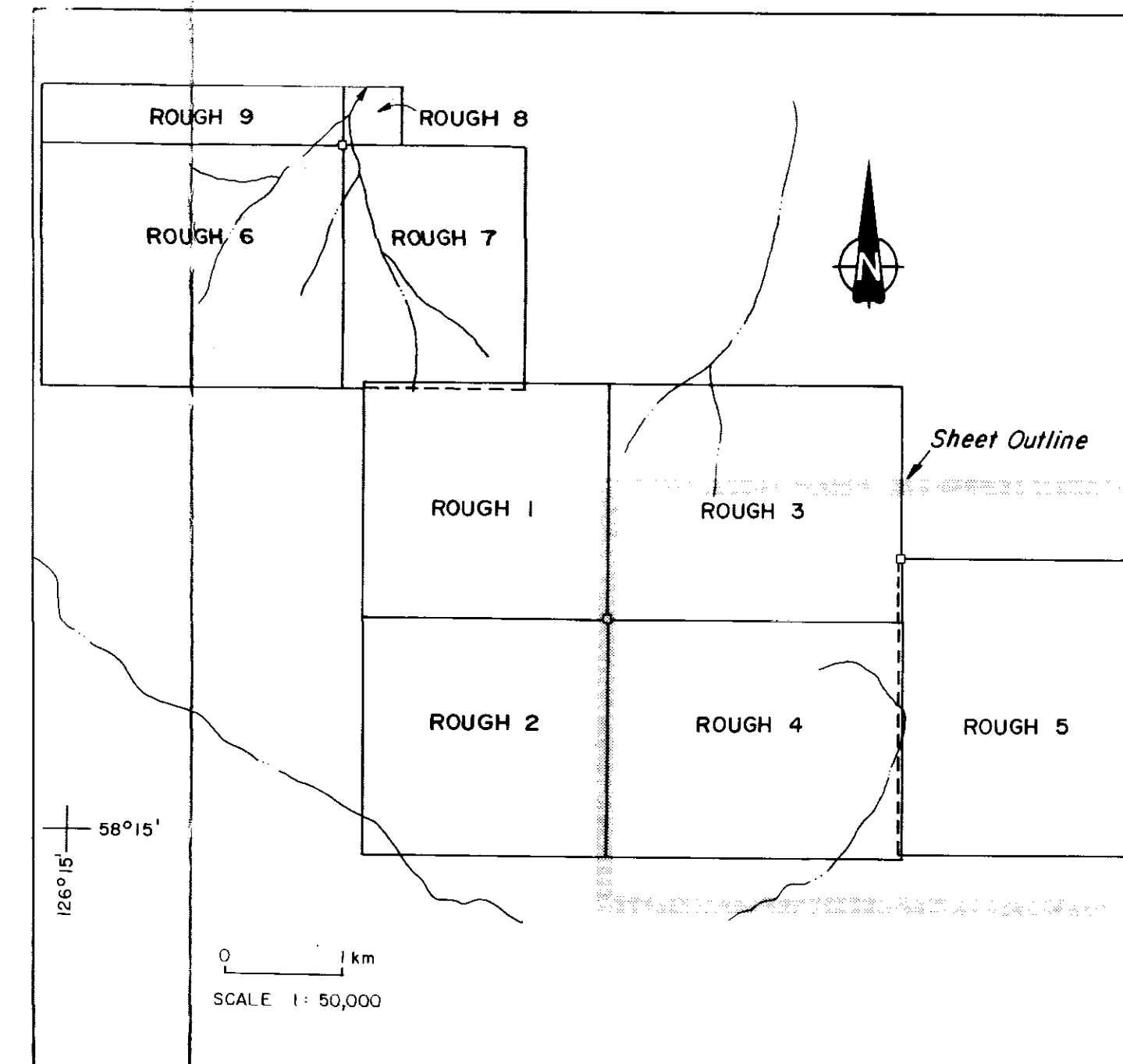
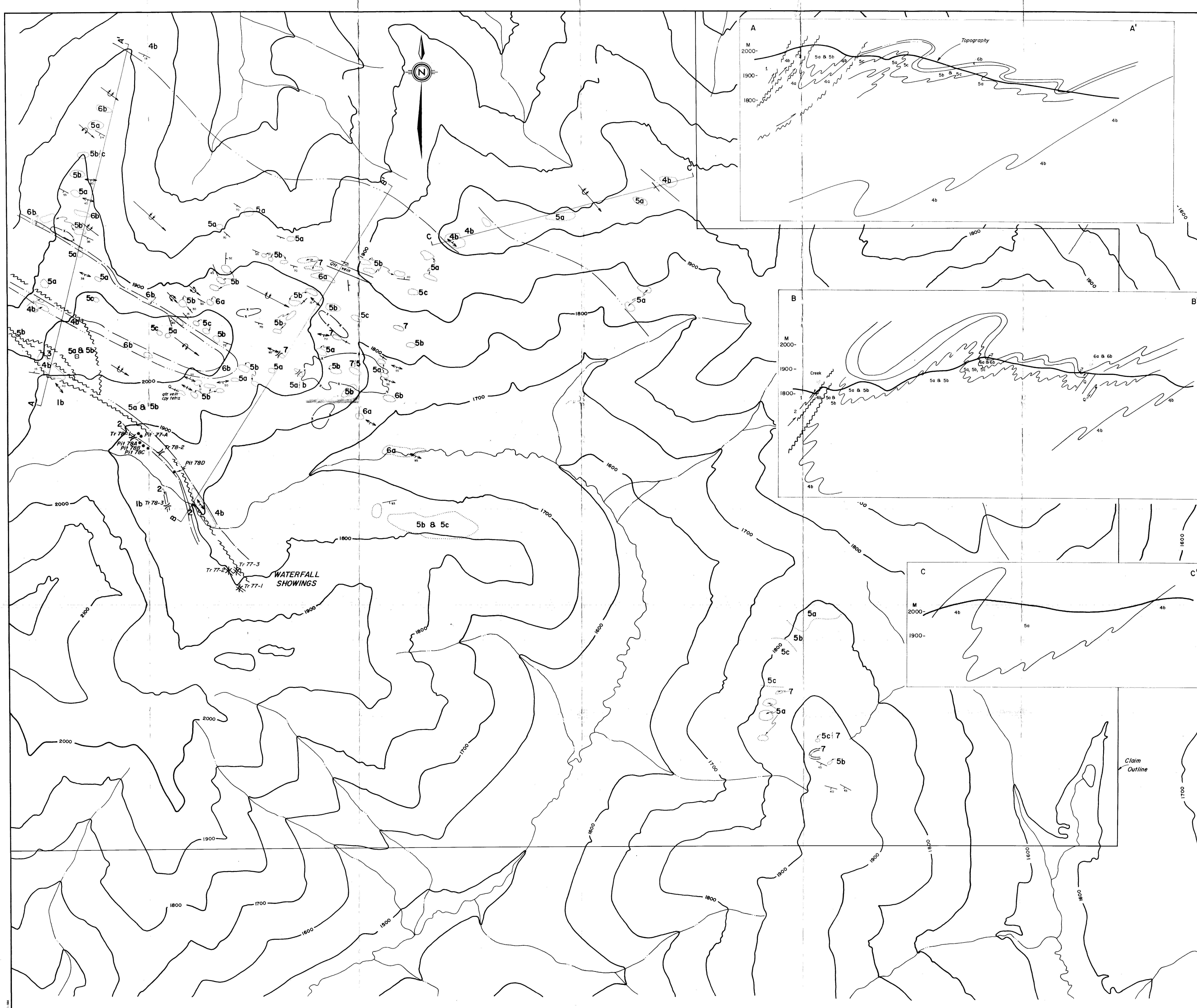
- X 235 Soil Sample, prior to the 1982 program
- X R200 Rock Sample 1982
- X C 915 Silt Sample 1982
- R141 Rock Chip Interval Sampled
- Soil Sample 1982
- 72,000 ppm

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,693**

<b>Kidd Creek Mines Ltd.</b>		
ROUGH CLAIMS GEOCHEMISTRY <b>Zn (ppm)</b>		
NTS 94/BE		Proj. 920
WORK BY	DRAWN BY	DATE: JUNE 14, 1982
SCALE IN METRES 1:5,000 Contour Interval 100m		
Figure: 5d		10,693





**LEGEND**

- White quartz veining
- UPPER DEVONIAN (Gunsteel)**
  - Baritic, black shales (could be part of the Middle or Lower Devonian)
  - Baritic horizon (1) highly siliceous barite (2) nodular barite (<10cm)
  - Light greyish-blue, medium bedded mudstone
- MIDDLE DEVONIAN (Generally thin or absent)**
  - Bright orange weathering, very thin-bedded calcareous siltstone
  - Brown to rusty weathering, grey siltstone
- LOWER DEVONIAN**
  - Bluish weathering, very thinly laminated (pinstriped) black shale
  - Bluish weathering, thinly laminated (bedding) black shales, occasionally contains white bands which represent predominantly leached out pyrite
  - Black weathering, thin bedded, cherty to carbonaceous black shales
- SILURIAN (Upper Road River)**
  - Light brown to orange weathering thin bedded, light grey calcareous siltstone
  - Alternating bands of calcareous and non calcareous siltstones; predominantly calcareous; thin limestone interbeds
- ORDOVICIAN**
  - Black weathering, thin (<3cm) bedded, black carbonaceous shale
- Zinc-lead bearing cherty shale**
  - Rusty weathering, medium to dark grey siltstone and shale; brecciation, silicification
- CAMBRIAN**
  - Light greyish-blue weathering, massive, medium to thick-bedded, fine grained to micritic light grey limestone, mylonitization
  - Quartzite; calcareous sandstone

- SYMBOLS**
- Outcrop
  - Pb anomaly <1000 ppm
  - Claim post
  - Trench
  - Pit
  - Thrust
  - Geological contact known, inferred
  - Overturned anticline, syncline
  - Cleavage - vertical, inclined
  - Bedding - vertical, inclined
  - Fault - Thrust

**10,693**

**GEOLOGICAL BRANCH ASSESSMENT REPORT**

**Kidd Creek Mines Ltd.**

ROUGH CLAIMS

**GEOLOGY**

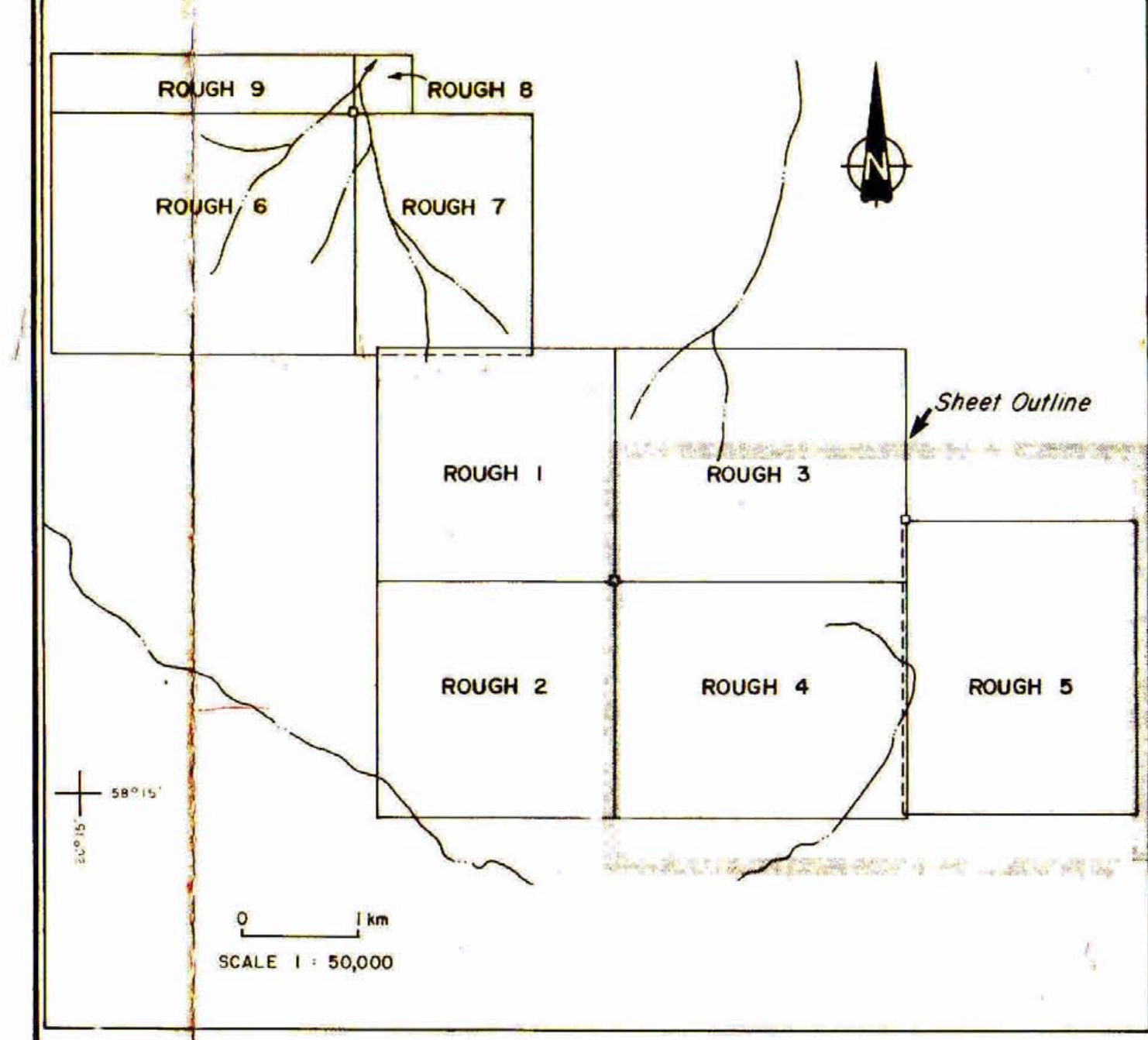
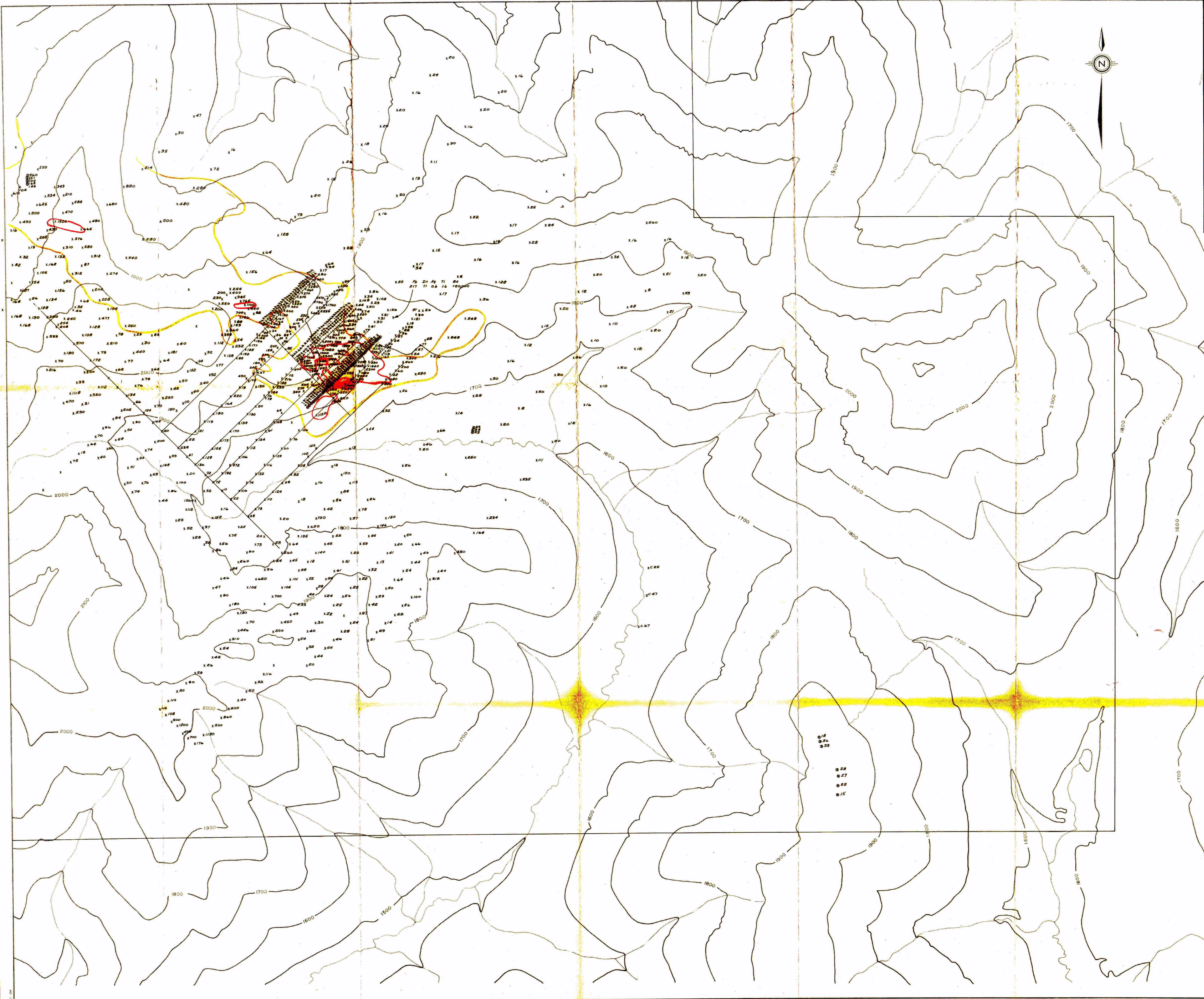
NTS 94/BE Proj. 920

WORK BY	DRAWN BY	DATE
A.B.	E.R.	SEPTEMBER, 1992

SCALE IN METRES 1:50,000 Contour Interval: 100m

**Figure: 3b**





**LEGEND**

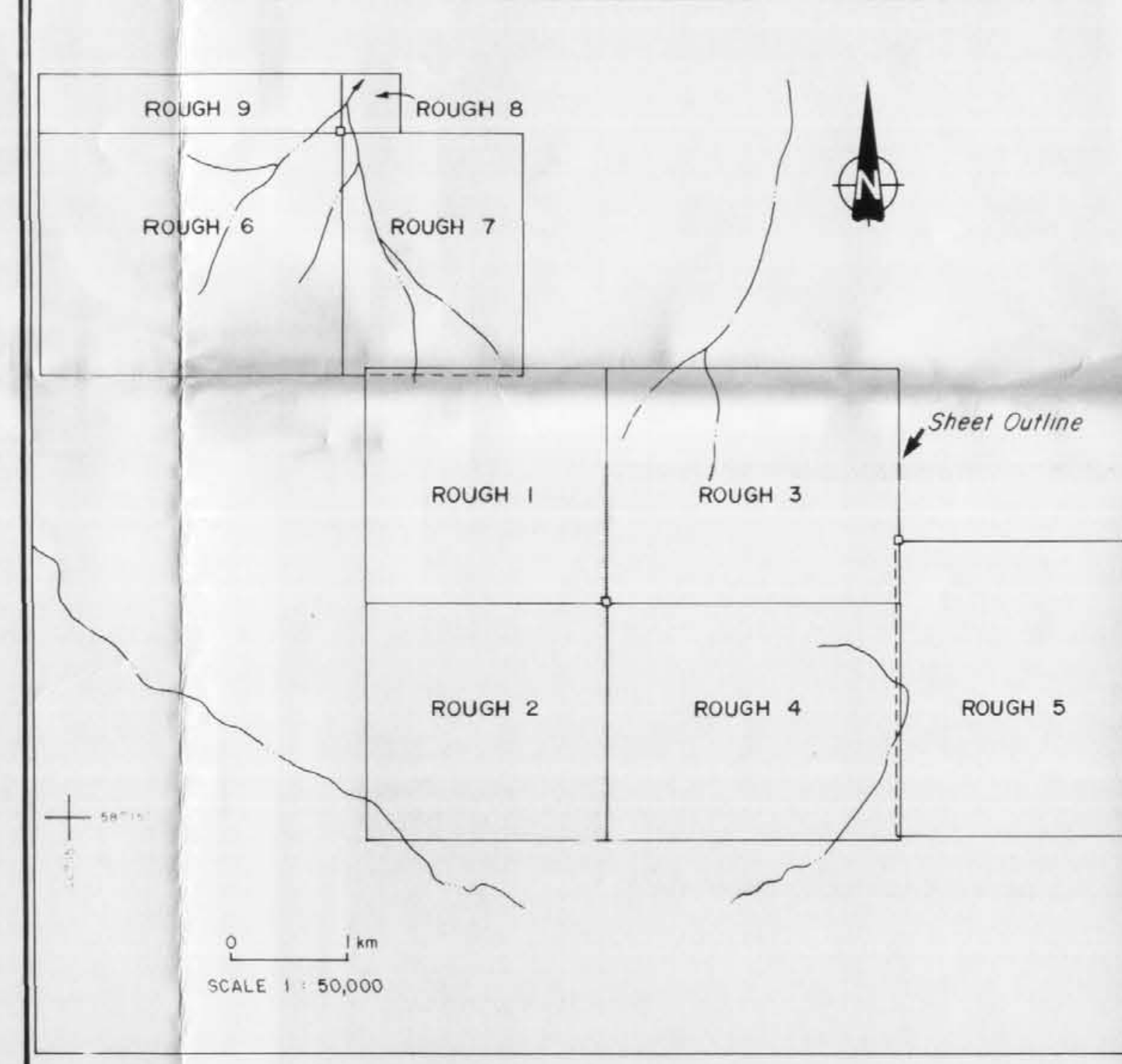
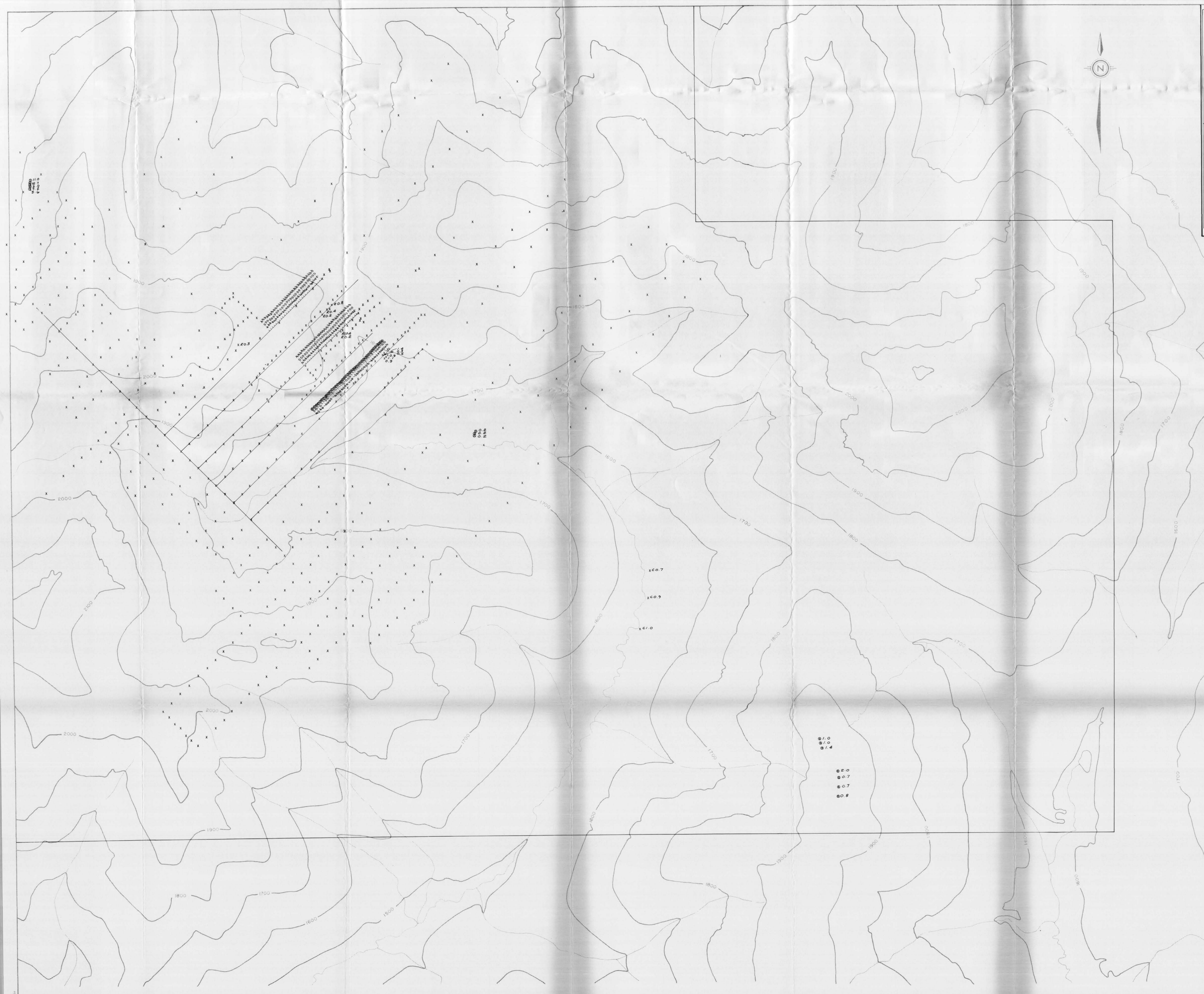
- x 230 Soil Sample, prior to the 1982 program
- x R355 Rock Sample 1982
- x C25 Silt Sample 1982
- R141 Rock Chip Interval Sampled
- o Soil Sample 1982
- > 1000 ppm
- o 200 - 999 ppm

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,693**

<b>Kidd Creek Mines Ltd.</b>	
ROUGH CLAIMS GEOCHEMISTRY Pb (ppm)	
NTS 94/8E	Proj 920
WORK BY	DRAWN BY
E.R.	DATE: JUNE 14, 1982
Figure: 3c	





**LEGEND**

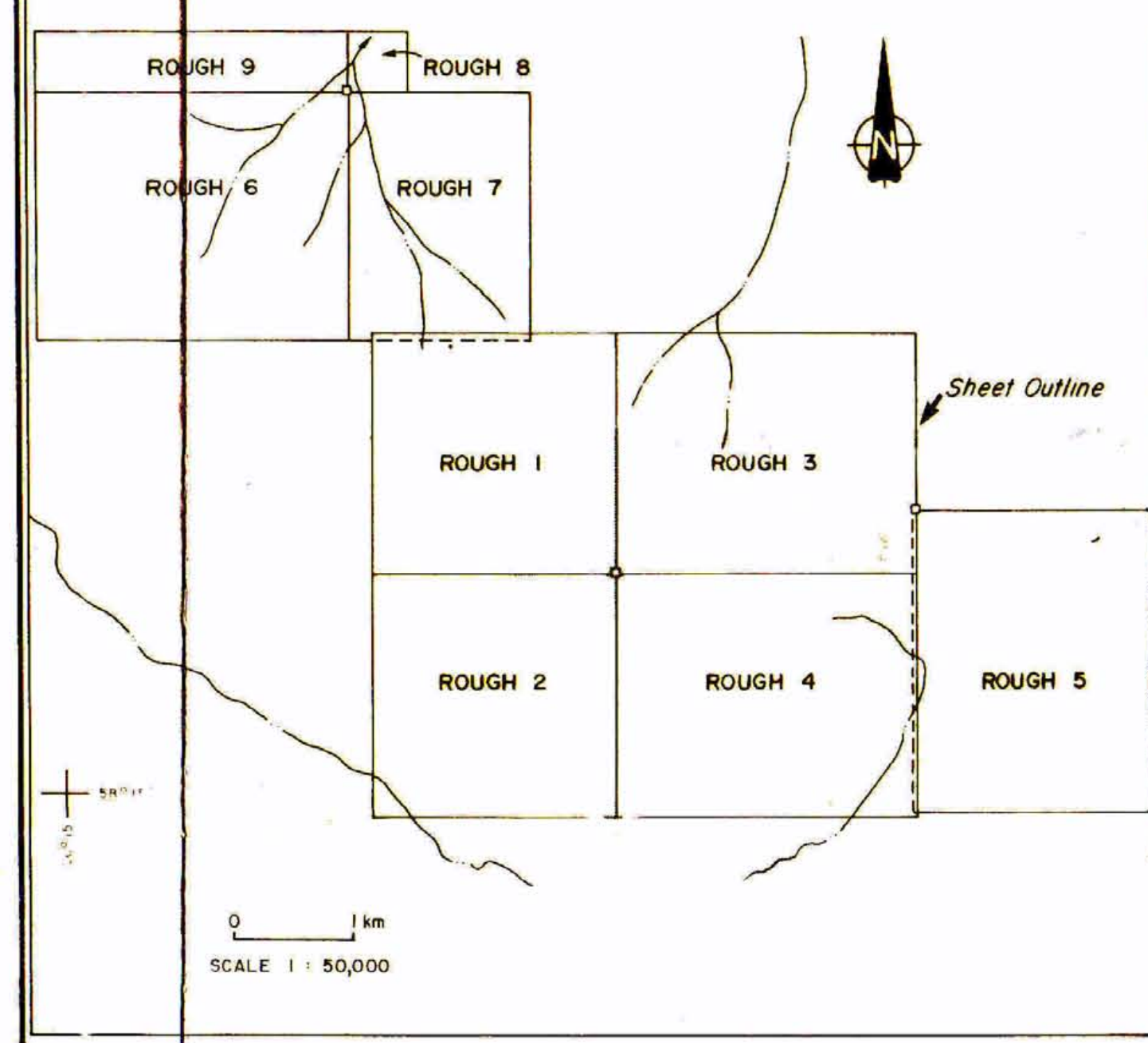
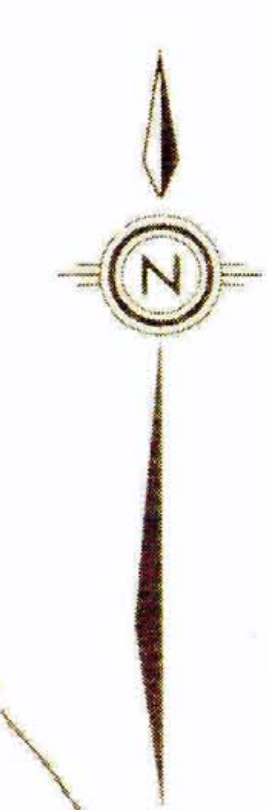
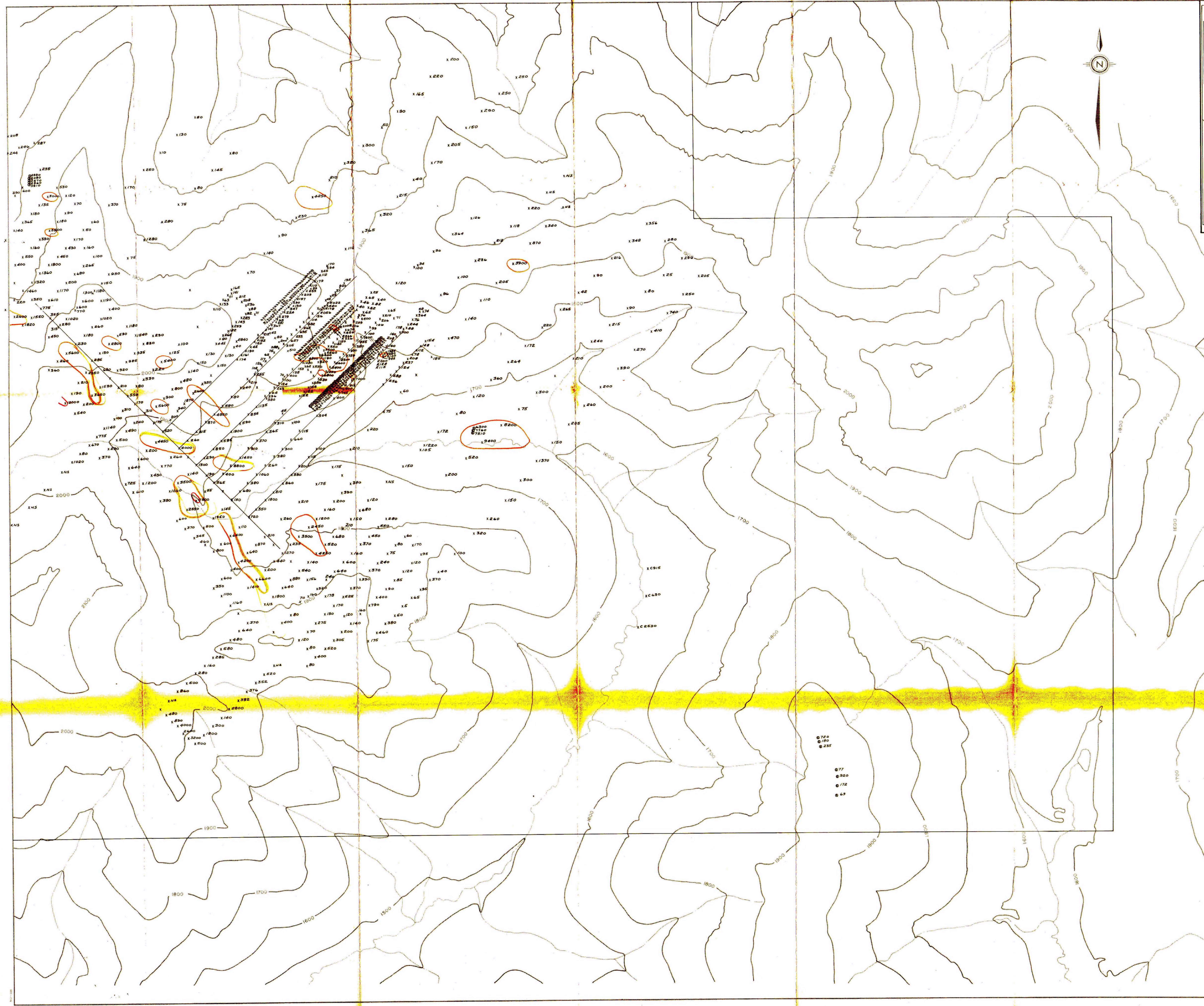
- x 1.2 Soil Sample, prior to the 1982 program
- x R.O.4 Rock Sample 1982
- x C.O.7 Silt Sample 1982
- RO.1 Rock Chip Interval Sampled
- o Soil Sample 1982

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,693**

<b>Kidd Creek Mines Ltd.</b>	
ROUGH CLAIMS GEOCHEMISTRY <b>Ag (ppm)</b>	
NTS 94/8E	Proj 920
WORK BY E. R.	DATE: JUNE 14, 1982
SCALE IN METRES 1: 5,000 Contour Interval 100m	
Figure: 3e	





**LEGEND**

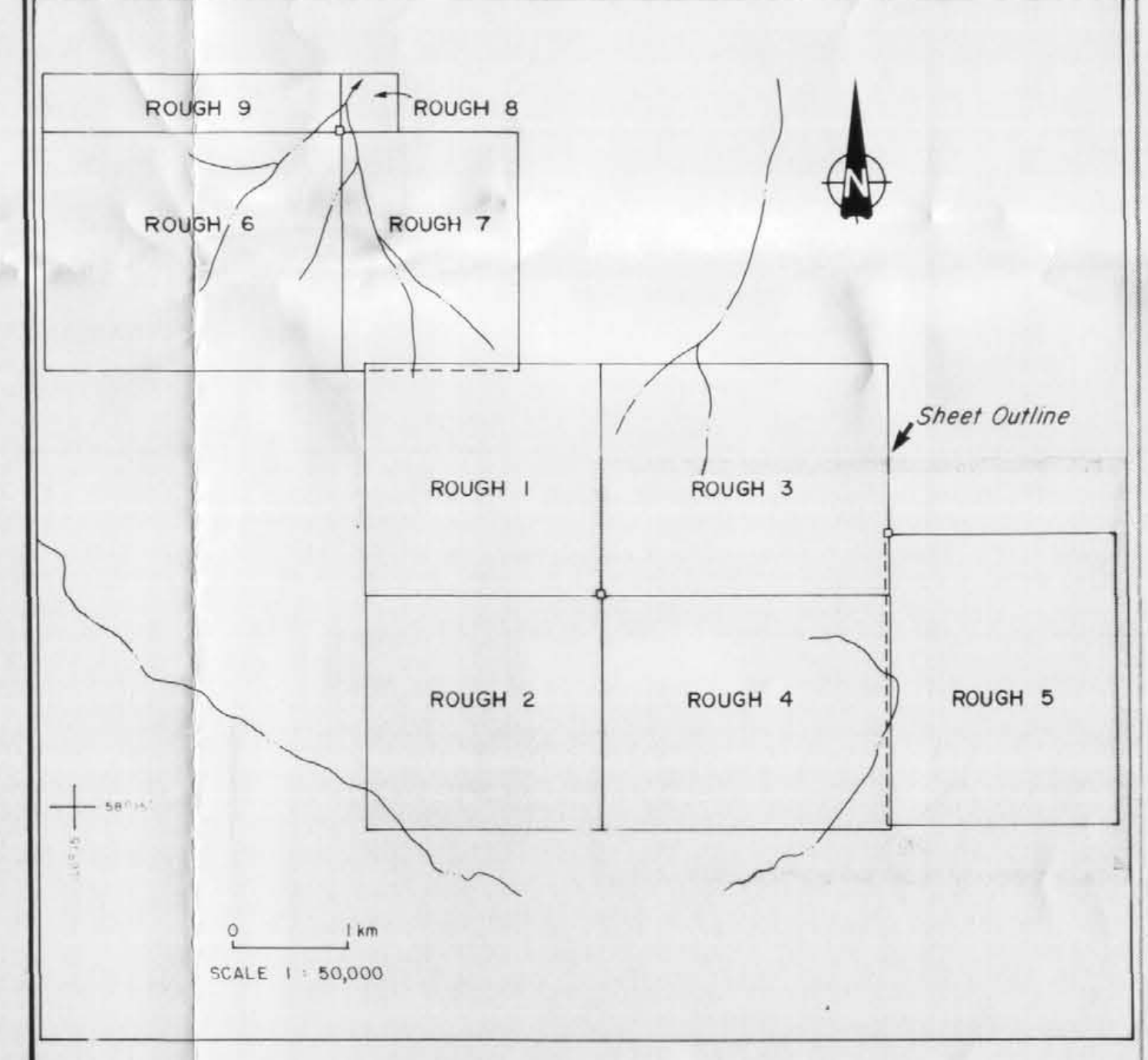
- x 235 Soil Sample, prior to the 1982 program
  - x R200 Rock Sample 1982
  - x C915 Silt Sample 1982
  - R141 Rock Chip Interval Sampled
  - Soil Sample 1982
- 7,2,000 ppm

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,693**

<b>Kidd Creek Mines Ltd.</b>		
ROUGH CLAIMS GEOCHEMISTRY Zn (ppm)		
NTS 94/BE		Proj 920
WORK BY	DRAWN BY	DATE: JUNE 14, 1982
	E.R.	
SCALE IN METRES 1: 5,000 Contour Interval 100m		
Figure: 3d		1030





**LEGEND**

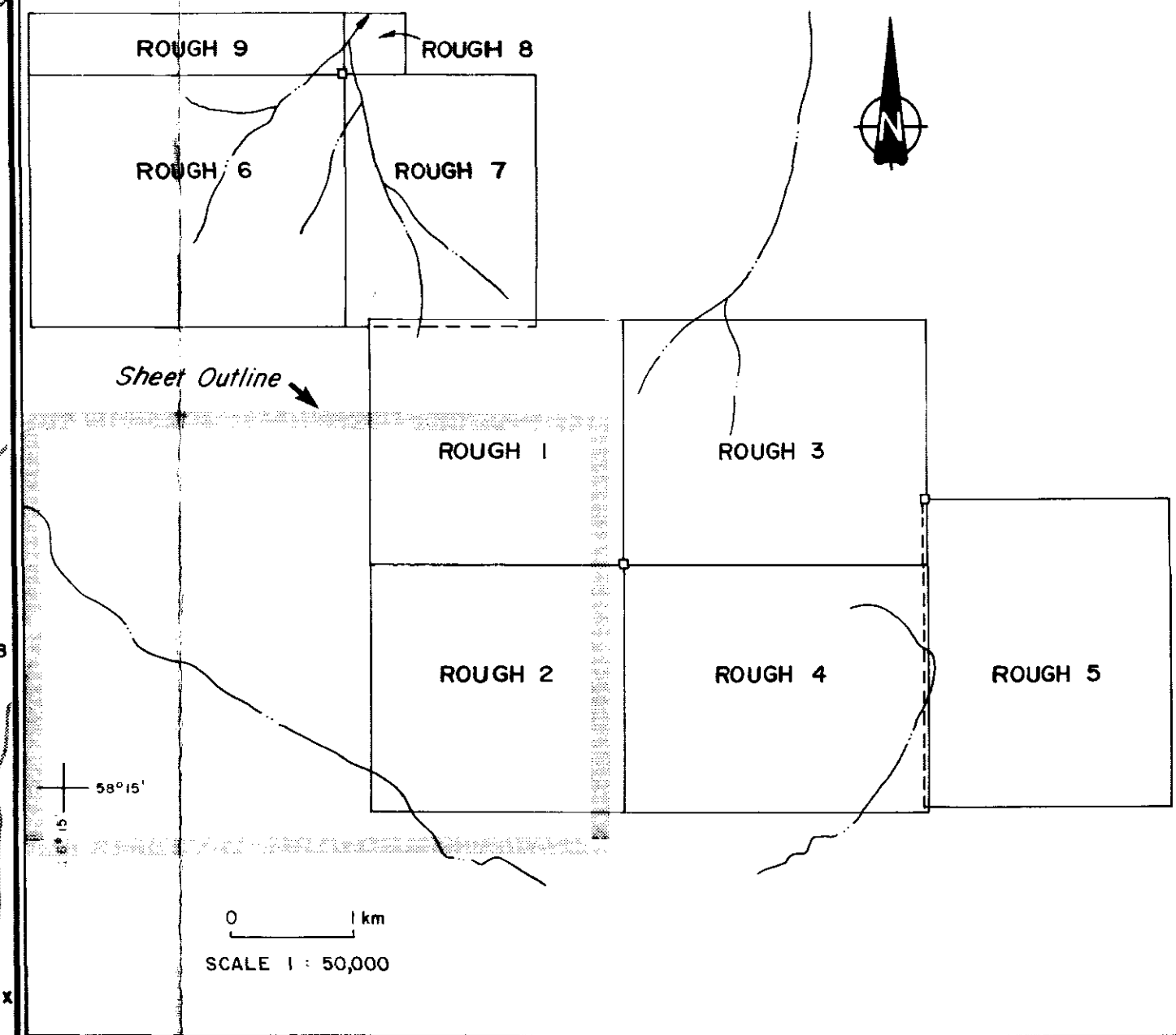
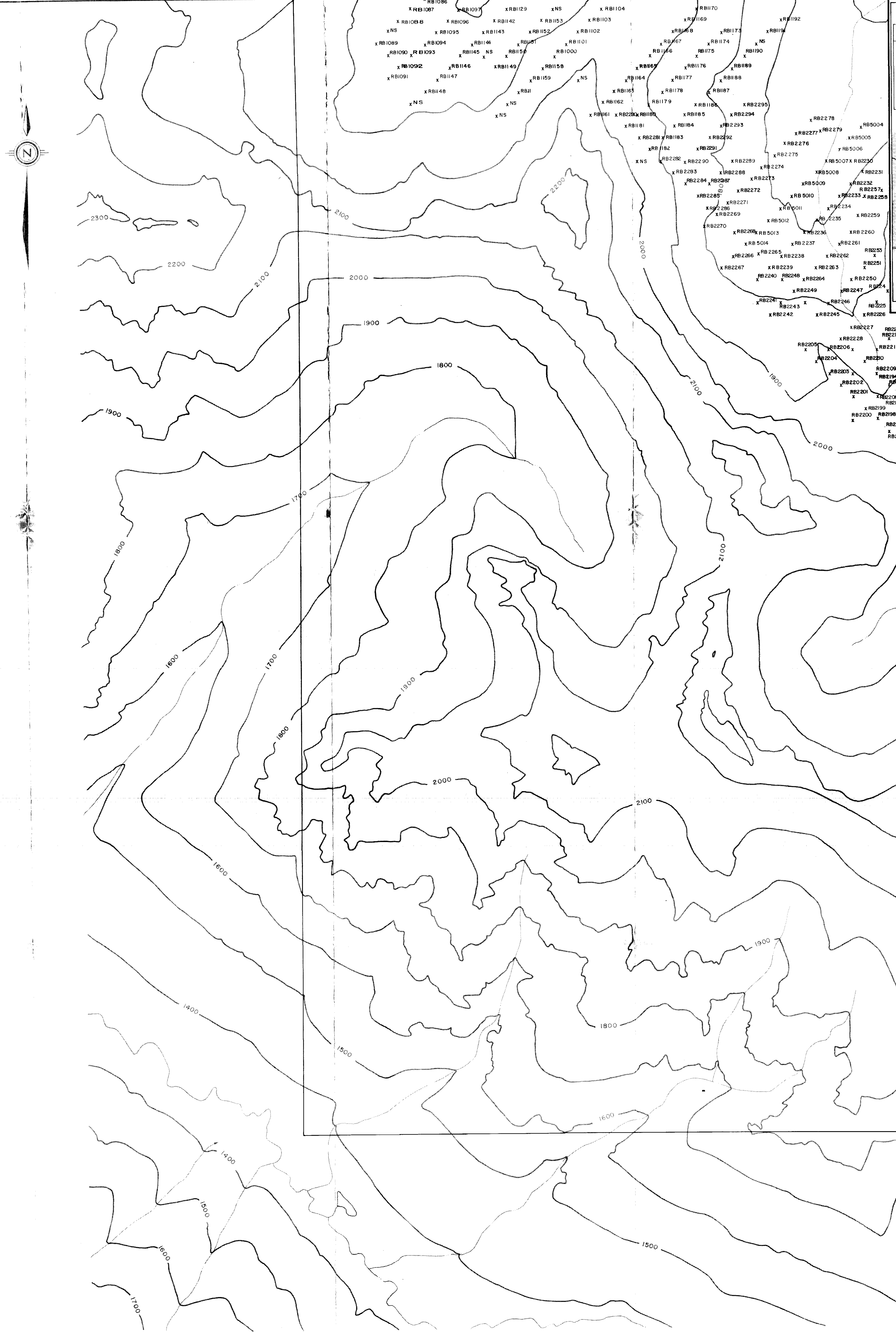
- x2800 Soil Sample, prior to the 1982 program
- xR1400 Rock Sample 1982
- x23,000 Silt Sample 1982
- R1480 Rock Chip Interval Sampled
- o Soil Sample 1982

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,693**

<b>Kidd Creek Mines Ltd.</b>	
ROUGH CLAIMS	
GEOCHEMISTRY	
<b>Ba &amp; Minor Tl (ppm)</b>	
NTS 94/8E	Proj 920
WORK BY E.R.	DATE: JUNE 14, 1982
SCALE IN METRES 1:50,000 Contour Interval: 100m	
Figure: 3f	





**LEGEND**

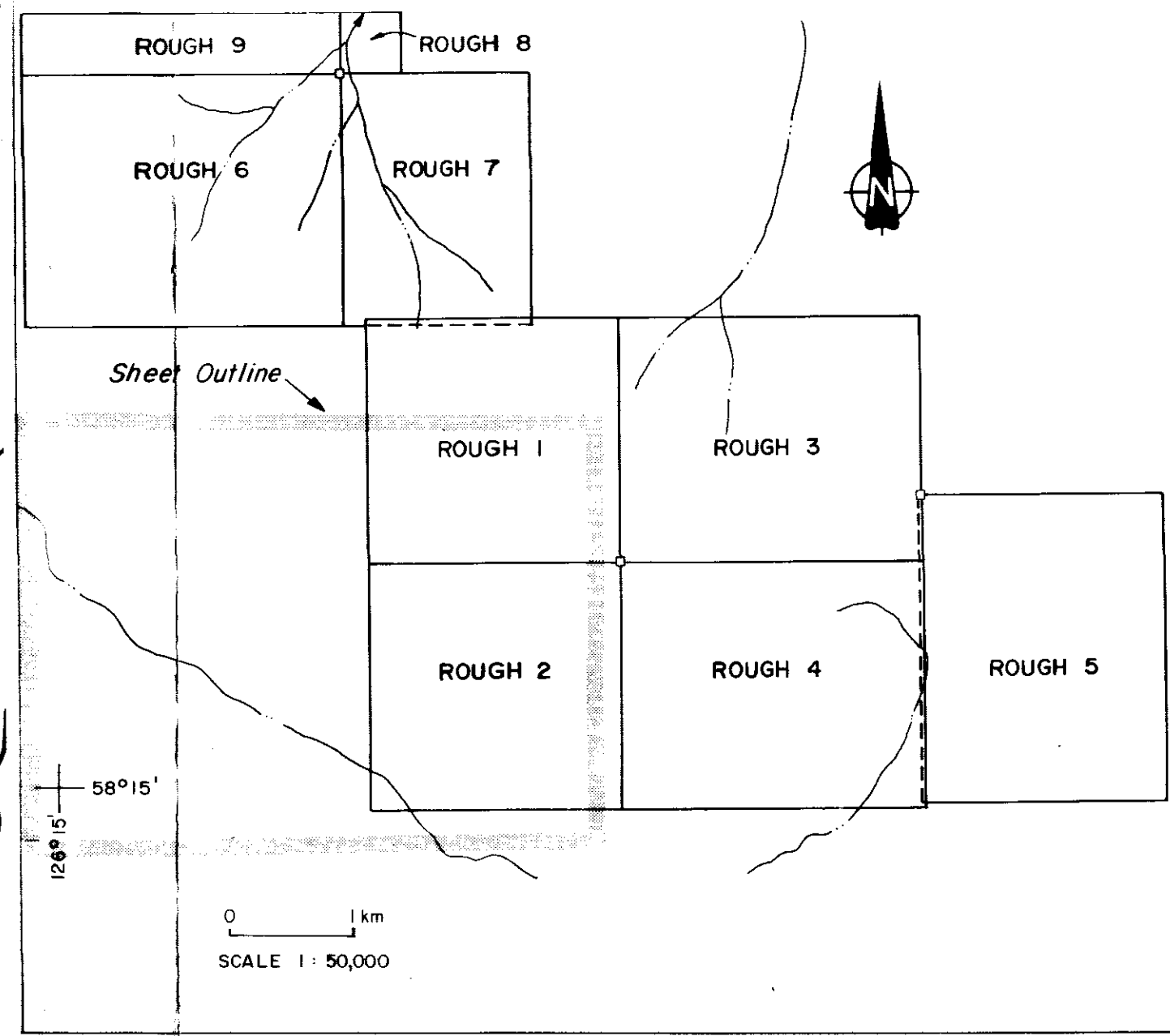
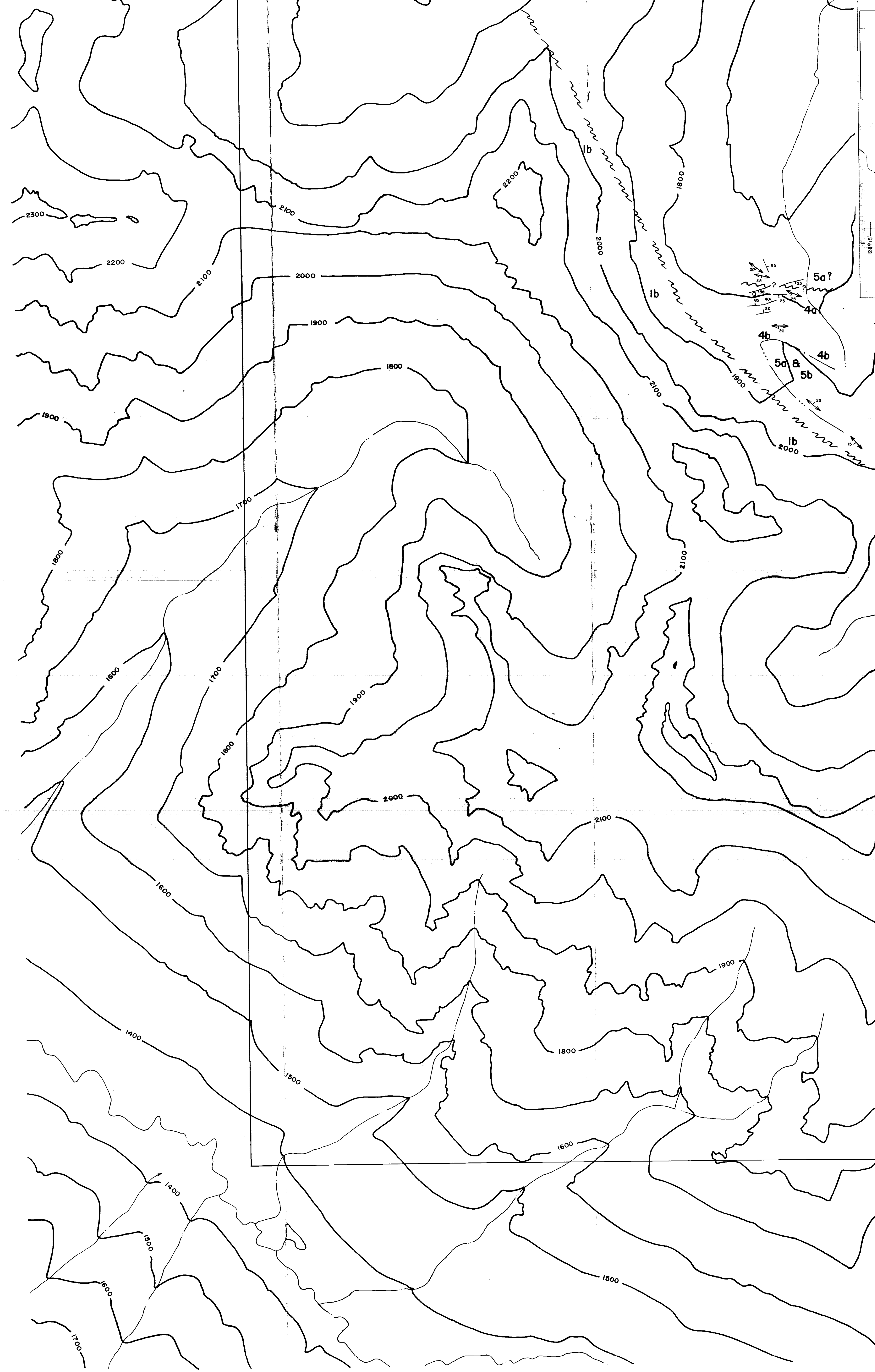
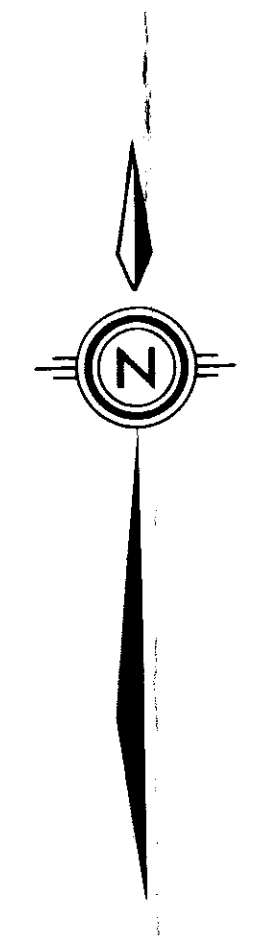
- x RB2156 Soil Sample, prior to the 1982 program
- x B920-82-1 Rock Sample, 1982 program
- x B920-82-2 Rock Chip Sampling, 10m interval e.g. nos. 4-B
- A920-82-1 Soil Sample, 1982 program
- x C920-82-1 Silt Sample, 1982 program

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,693**

<b>Kidd Creek Mines Ltd.</b>	
ROUGH CLAIMS	
GEOCHEMISTRY SAMPLE LOCATIONS	
NTS 94/8E	Proj. 920
WORK BY	DATE: JUNE 14, 1982
DRAWN BY	
E.M.	
SCALE IN METRES 1 : 5,000 Contour Interval 100m	
Figure: 4 a	





**LEGEND**

- 2 White quartz veining
- UPPER DEVONIAN (Gunsteel)**
- 7 Baritic, black shales (could be part of the Middle or Lower Devonian)  
Baritic horizon (1) highly siliceous barite  
(2) nodular barite (<1.0cm)
- 7a Light greyish-blue, medium bedded mudstone
- MIDDLE DEVONIAN (Generally thin or absent)**
- 6b Bright orange weathering, very thin-bedded calcareous siltstone
- 6a Brown to rusty weathering, grey siltstone
- LOWER DEVONIAN**
- 5c Bluish weathering, very thinly laminated (pinstriped) black shale
- 5b Bluish weathering, thinly laminated (bedding) black shales, occasionally contains white bands which represent predominantly leached out pyrite
- 5a Black weathering, thin bedded, cherty to carbonaceous black shales
- SILURIAN (Upper Road River)**
- 4b Light brown to orange weathering thin bedded, light grey calcareous siltstone
- 4a Alternating bands of calcareous and non calcareous siltstones; predominantly calcareous, thin limestone interbeds
- ORDOVICIAN**
- 3 Black weathering, thin (<3cm) bedded, black carbonaceous shale  
Zinc-lead bearing cherty shale
- 2 Rusty weathering, medium to dark grey siltstone and shale; brecciation, silicification
- CAMBRIAN**
- 1b Light greyish-blue weathering, massive, medium to thick-bedded, fine grained to micritic light grey limestone; mylonization
- 1a Quartzite; calcareous sandstone

**SYMBOLS**

- Outcrop
- Pb anomaly
- Claim post
- Trench
- Pit
- Thrust
- Geological contact known, inferred
- Overturned anticline, syncline
- Cleavage - vertical, inclined
- Bedding - vertical, inclined
- Fault - Thrust

**GEOLOGICAL BRANCH ASSESSMENT REPORT**

**10,693**

**Kidd Creek Mines Ltd.**

ROUGH CLAIMS

**GEOLOGY**

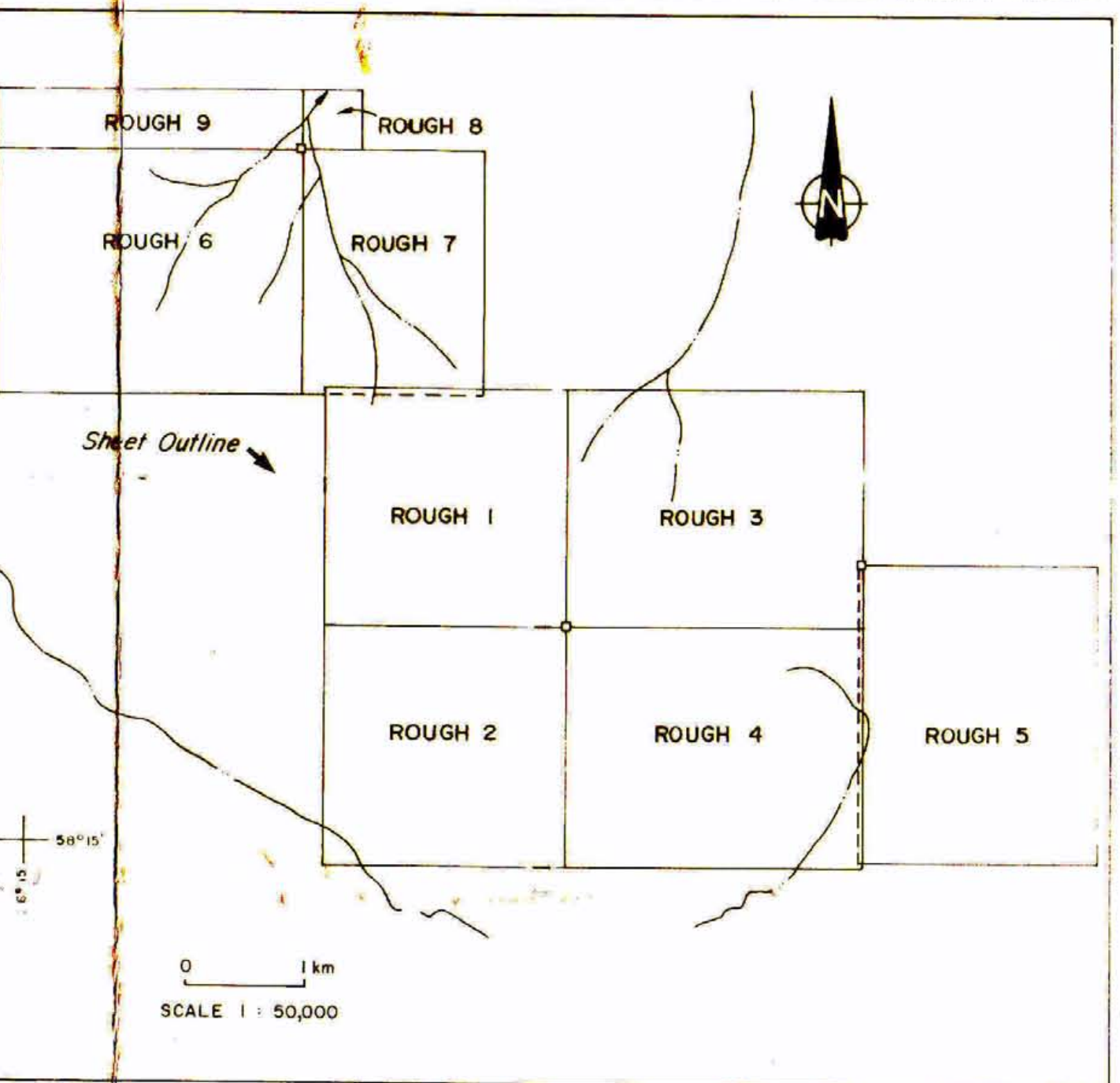
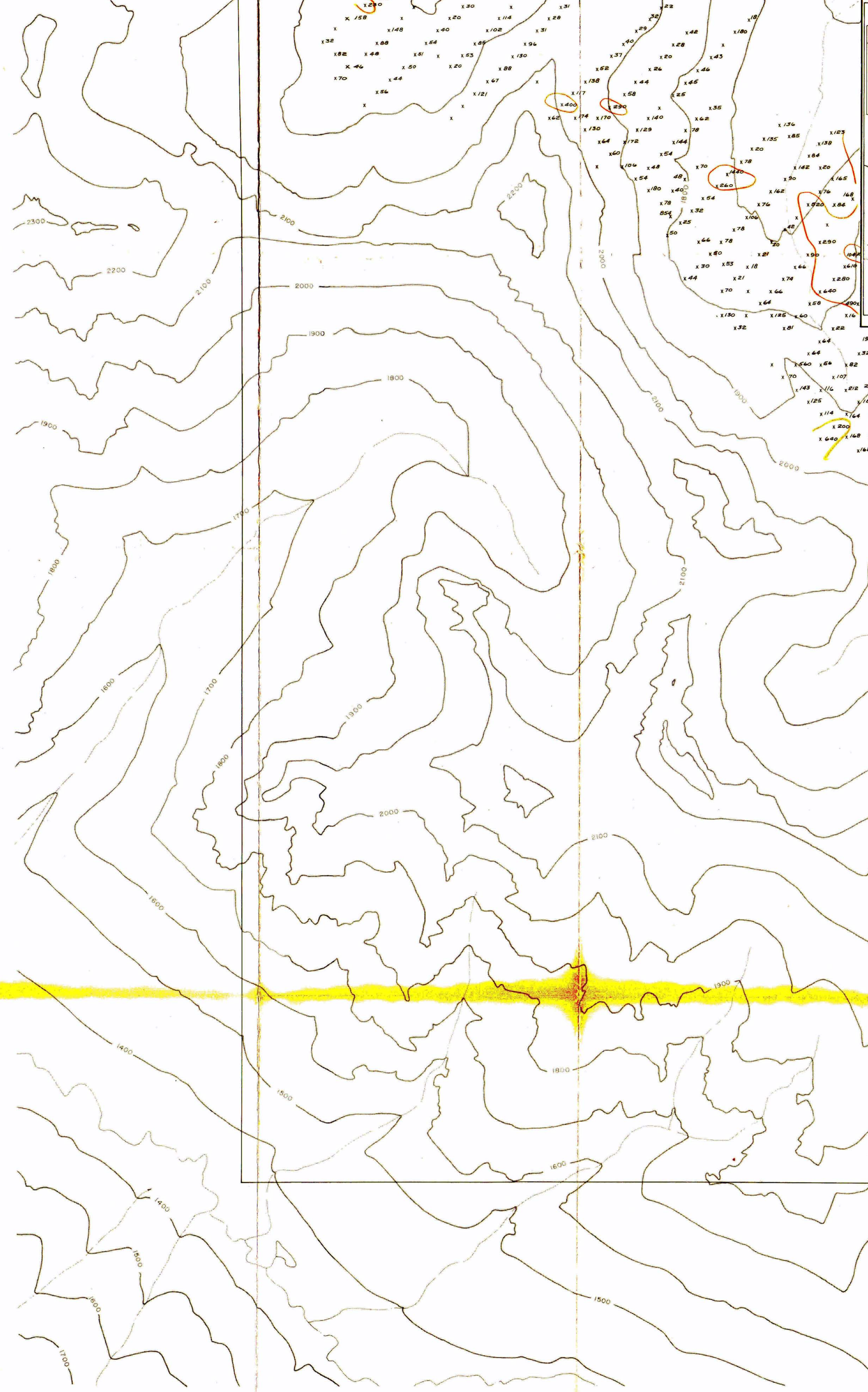
NTS 94/BE Proj. 920

WORK BY	DRAWN BY	DATE: SEPTEMBER, 1982
A.B.	E.R.	

SCALE IN METRES 1:5,000 Contour Interval 100m

Figure: 4 b





**LEGEND**

- x 230 Soil Sample, prior to the 1982 program
- x R535 Rock Sample 1982
- x C25 Silt Sample 1982
- R141 Rock Chip Interval Sampled
- Soil Sample 1982
- 200 - 999 ppm
- > 1,000 ppm

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**10,693**

<b>Kidd Creek Mines Ltd.</b>			
ROUGH CLAIMS GEOCHEMISTRY Pb (ppm)			
NTS 94/BE		Proj. 920	
WORK BY	DRAWN BY	DATE: JUNE 14, 1982	
	E.R.		
SCALE IN METRES 1 : 5,000 Contour Interval 100m			
Figure: 4c			