

84-1173-13047

13/55

BILLITON CANADA LTD.

KELLY CREEK PROPERTY
NOVA CLAIMS

1984 SOIL GEOCHEMICAL
and
TRENCHING PROGRAMME

NTS: 82F/3W
NELSON MINING DIVISION

LATITUDE: 49° 08' LONGITUDE: 117° 26'

by

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CONTRACT GEOLOGIST

NOVEMBER, 1984

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,047

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SOIL GEOCHEMISTRY RESULTS

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A. SUMMARY

The 1984 reconnaissance soil geochemistry, geology and prospecting surveys defined an 800 by 500 metre zone of Cu, Zn, Ag soil anomalies overlying a sedimentary window within the Rossland Volcanic Formation. The geological setting is similar to that of a "Primitive-Type" Zn-Cu (Ag-Au) massive sulphide environment of deposition.

Prospecting and trenching failed to detect any copper, zinc or silver mineralization in the argillite window. The argillite unit contains anomalous levels of Cu, Zn and Ag.

B. CONCLUSIONS AND RECOMMENDATIONS

A 1984, 10.25 line kilometre reconnaissance soil survey shows anomalous Cu, Zn and Ag soil values over an 800 by 500 metre area at the headwaters of Kelly Creek. The soil anomaly is underlain by a window of argillaceous strata and intercalated siltstone/tuff horizons. The surrounding area is dominated by Rossland Formation volcanic terrain consisting of augite and augite-feldspar porphyry flows, pyroclastic rocks and agglomerate.

A surveyed grid should be established over the NOVA claims. A programme of detailed geological mapping, magnetometer and VLF-EM surveying should be completed over the grid area. The 1984 trenching programme failed to expose any amount of "fresh" rock. A 3-hole, 400 metre diamond drill programme is suggested. Alternatively, a percussion drill programme could be utilized. Due to the presence of highly fractured argillaceous rocks, this would be, by far, the least expensive method of testing for a shallow target. The disadvantage with percussion drilling, however, is the loss of structural data that would be obtained with a diamond drill.

C. INTRODUCTION

The NOVA 1 and 2 claims were staked for Billiton Canada Ltd. in October, 1984. Reconnaissance soil survey lines were established across the property and 355 soil samples were obtained. Reconnaissance geological and prospecting surveys defined a sedimentary/volcanic contact on the claims. Subsequently, a bulldozer trenching programme was completed over anomalous areas. The 1984 expenditures on the KELLY CREEK property were \$18,000.00.

D. LOCATION AND ACCESS

The NOVA claims are situated at the headwaters of Kelly Creek, south of Mt. Kelly and east of Fruitvale, B.C. (Map Sheet 82F/3), in the southeast corner of the province (Figure 1). Access to the claims is by four, 8-km gravel roads, branching off Highway 3B. Three of these roads are in good condition. They branch off Highway 3B at Fruitvale, Query Creek and Meadows (Archibald Creek). The fourth road, branching off Highway 3B at Park Siding (Atco Sawmill), is in poorer condition. The property is approximately 25 road kilometres from the smelter at Trail, B.C.

E. PHYSIOGRAPHY AND VEGETATION

Elevations over the NOVA claims range from 1955 metres (6411 feet) on Mt. Kelly, to 1433 metres (4700 feet) at the south end of the claims in the Kelly Creek valley. Cliffs are rare. Basalt flows form gently rounded terrain, with small steppes cascading down hillsides at higher elevations. Most of the area below 1800 metres is well-forested, with pine, spruce and larch and low-lying alder brush. Above 1800 metres elevation, short grasses, sparse, stunted pines and alder brush dominate the landscape.

F. PROPERTY HISTORY

A Billiton Canada Ltd. 1982 and 1983 stream sediment sampling survey identified anomalous Zn and Cu values (1930 ppm and 103 ppm, respectively) near the headwaters of Kelly Creek. Prospecting over the area showed a volcanic-sedimentary contact with disseminated pyrite and pyrrhotite. The NOVA claims were staked for Billiton Canada Ltd. in October, 1984 (Figure 2).

<u>CLAIM NAME</u>	<u>RECORD NO.</u>	<u>NO. OF UNITS</u>	<u>DATE OF RECORD</u>
NOVA 1	3899	10	October 19/84
NOVA 2	3900	20	October 19/84

G. REGIONAL GEOLOGY

1. Lithology

Regionally, the area is underlain by Lower Jurassic Sinemurian beds and the Rossland Formation. The rocks flank the west side of the Kootenay Arc (Figure 3). Impure grey sandstone and intercalated argillite beds, massive sandstone with argillaceous partings and some banded siltstone and bedded tuff, forming the "Sinemurian Beds", lie mostly north of the Kelly Creek drainage basin. Locally, slaty argillite is more abundant and in some places, the argillite is limy. The upper part of this sedimentary succession is characterized by increasing proportions of lavas and pyroclastic rocks. Exposed thickness of these beds has been estimated at 1070 metres (3500 feet).

Sinemurian beds are overlain by volcanic and minor intercalated sedimentary rocks of the Rossland Formation. Regionally, the Rossland Formation consists mainly of lava flows of andesitic to basaltic composition. Flows are most often agglomeratic, with pyroclastic matrix material. Rocks are predominantly dark green

M82F/3W

(FOR PLACER SEE P 82F/3W)

3

Park Siding

4

Fruitvale TO WEST SEE MAP B2 F/4E

3

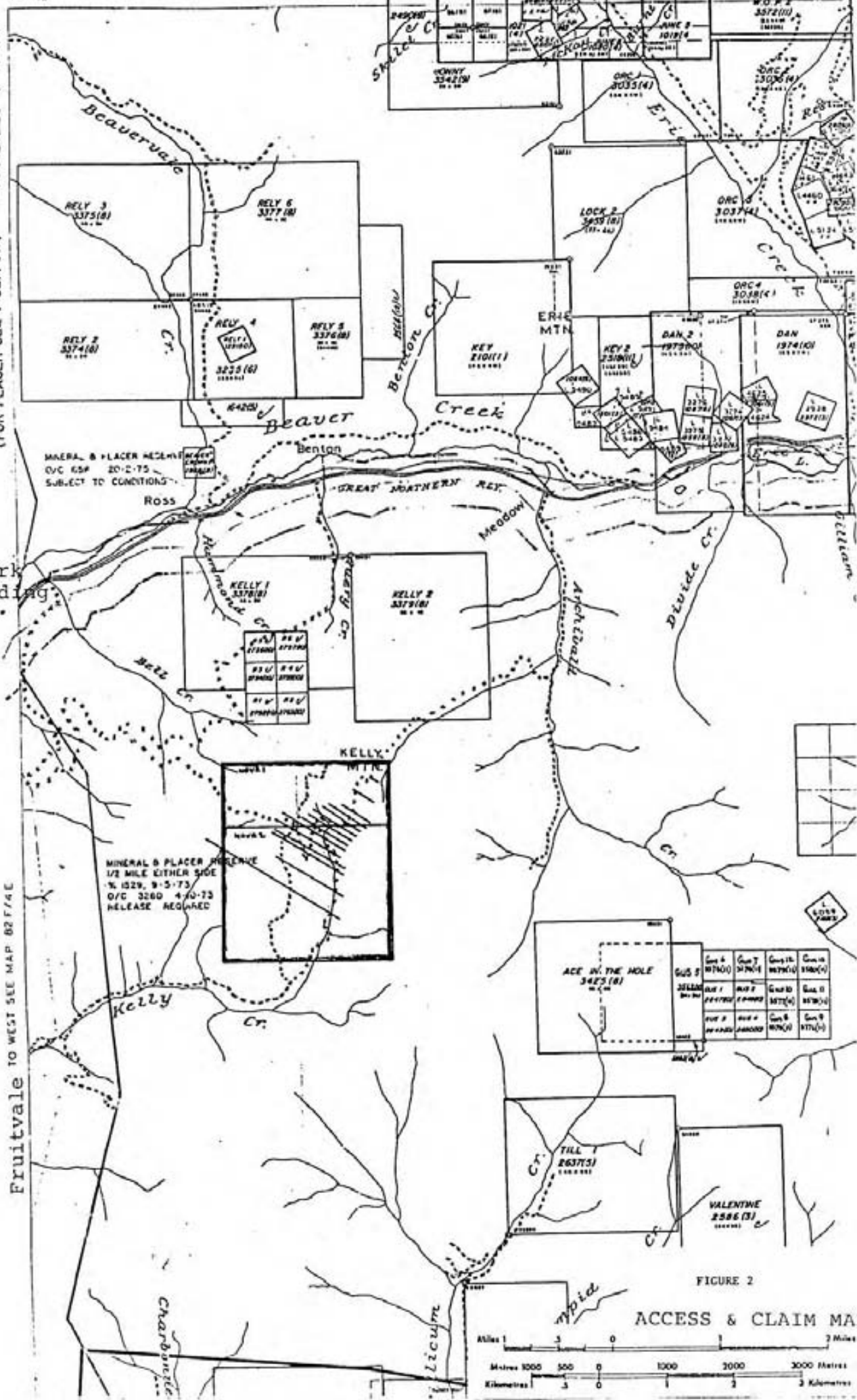
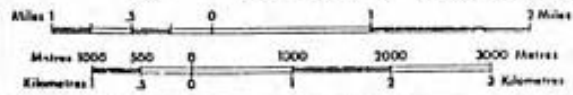


FIGURE 2

ACCESS & CLAIM MAP





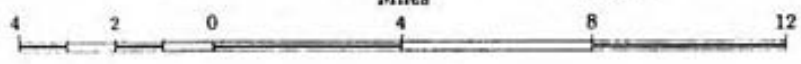
TERTIARY	
Eocene - OR Later	
19a	33. CORDELL PLUTONIC ROCKS granite, minor quartz, monzonite and charnockite
19b	22a. pringleite quartz monzonite, 22b. quartzite
19c	23. SALMON PLUTONIC ROCKS basaltic granite
19d	24. ALGROGDOR INTRUSIVE, diorite
CRETACEOUS IN	
LOWER CRETACEOUS OR IN Layer	
11	31. SONGMOUNTAIN FORMATION conglomerate, minor quartzite
LOWER CRETACEOUS IN	
18	VALHALLA PLUTONIC ROCKS granite, minor quartzite 80a, quartz and granodiorite
19	NELSON PLUTONIC ROCKS 19a, mainly quartzite granite 19b, non-quartzite granite in granodiorite 19c, granodiorite 19d, quartz diorite 19e, quartz 19f, mainly fine grained, porphyritic coarse to coarse diorite 19g, charnockite 19h, quartzite 19i, quartzite and granodiorite 19j, diorite 19k, quartzite 19l, quartzite, 19m, diorite
	(19k and 19l) (19k and 19l) quartzite
MESOZOIC	
JURASSIC	
MIDDLE AND LOWER JURASSIC	
	HILL FORMATION quartzite, sandstone, and conglomerate, 17a, may not be Hill
LOWER JURASSIC	
18	ROSSLAND FORMATION sandstone, limestone, thin basalt, minor quartzite, quartzite, conglomerate, silt, minor shales, 18a, metamorphosed greenstone, may be Rossland
18b	25. MOUNTAIN BEDS quartzite, conglomerate, quartzite, shales, minor basalt and granodiorite rocks. May be equivalent to upper part of 18 and 18c
TRIASSIC AND IN LOWER JURASSIC	
18.12	12. ANSLO GROUP conglomerate, minor shales (Triassic?) 12. SLOCAN GROUP shales, quartzite, sandstone, conglomerate, silt, thin quartzite and volcanic rocks. 12a, quartzite (possibly Slocan group)
PERMIAN (IN TRIASSIC IN AND LOWER JURASSIC IN)	
14	14. Active, shales, conglomerate, minor limestone, 14a, quartzite
PENNSYLVANIAN IN	
	MOUNT ROBERTS FORMATION shales, limestone, quartzite, quartzite, granodiorite
OROVIRATORIA	
LOWER AND IN MIDDLE OROVIRATORIA	
	ACTIVE FORMATION shales, quartzite, conglomerate, minor limestone
CAMBRIAN	
MIDDLE	
8	8. MELWAY FORMATION dolomite, limestone, phyllite, and shales
LOWER	
	LARK FORMATION quartzite, quartzite, limestone, dolomite, phyllite, and shales; 7b, includes some Ross limestone
8.6	8. QUANTZITE RANGE FORMATION shales, quartzite, and quartzite conglomerate, minor conglomerate and quartzite and 8.6.1 FORMATION quartzite, shales, and quartzite, minor limestone
10	10. White quartzite, shales, limestone, and quartzite, minor quartzite and granodiorite
WANDERERS IN	
	THREE SISTERS FORMATION green quartzite, quartzite, and conglomerate
WANDERERS	
3	3. 3. ACTIVE FORMATION green quartzite, phyllite, and quartzite shales, minor limestone, basal conglomerate
	1. TOBY FORMATION conglomerate, minor metabasaltic quartzite and limestone
	2. WENE VOLCANIC FORMATION granodiorite, minor metabasaltic quartzite and limestone
4	4. Quartzite, conglomerate, quartzite, granodiorite, locally conglomerate, minor basalt and quartzite rocks. Probably not older than Cambrian, but in part may be Devonian
PROTEROZOIC	
	Age group, hornblende-bearing foliated gneiss, minor quartzite, limestone and shales. Probably Early Mesozoic

Dike-covered area
 Building (outlined, unnumbered)
 Building (outlined, number shown, may not be shown)
 Building (also shown, map of bed orientation)
 Schramm (outlined)
 Contourline, quartzite (outlined, unnumbered)
 Fault (outlined, approximately oriented)
 Anorthite, crystal (outlined)
 Anorthite, crystal (unnumbered)
 Fault (outlined)

Contourline omitted from published maps and field used by NW. Limits 1944-1950, 1957

FIGURE 3
REGIONAL GEOLOGY

Scale: One Inch to Four Miles = $\frac{1}{253,440}$



49°00'

117°00'

173 180 187 192 UNITED STATES OF AMERICA

184 Russian Cr. 186 188

191 192 193 194 195

30'

15'

or grey-green. A few contain small feldspar phenocrysts. In the Mt. Kelly area, where the formation was formerly mapped as Beaver Mountain Formation, dark green augite and augite-feldspar porphyry flows, breccias and agglomerates are predominant. Some of these augite porphyries are thought to be intrusive. Thickness of the Rosslund volcanic rocks is considered to be a few thousand metres.

Lower Jurassic volcano-sedimentary terrane has been intruded regionally by Cretaceous Nelson plutonic rocks that comprise the Nelson batholith and its satellites. Porphyritic granite is the predominant phase. Other phases in approximate order of abundance are quartz diorite, quartz monzonite, diorite, monzonite and syenite.

2. Structure

The Sinemurian beds in the basin of Archibald Creek, east of Mt. Kelly, form an anticline whose axial plane strikes approximately 020° . Within the core of the anticline, beds dip vertically. On the limbs, beds dip steeply outward, with some reversals. Beds are often distorted as a result of faulting. In Beaver Creek valley, west of Mt. Kelly, Sinemurian Beds form a southwest-plunging anticline.

A syncline identified on Mount Kelly has gently dipping limbs formed of Rosslund Formation flows and pyroclastic rocks. The axis of the syncline plunges gently southwest. In the area surrounding these major folds, the attitudes of bedding planes are random and the structure appears to be undulating.

3. Origin

The Lower Jurassic deposition of the Sinemurian beds is thought to be a continuation of sedimentation into a Paleozoic marine basin. This was followed in late Lower Jurassic time by widespread volcanism. The Rossland Formation was deposited in a volcanic island environment, as evidenced by irregular intercalation of marine sediments with lava flows and pyroclastic rocks. Similarly, the abundance of tuffaceous sediments with few flows and agglomerates within Sinemurian beds indicates a volcanic island environment during time of deposition. The abundance of quartzitic beds and occasional granitic pebbles in agglomerate suggests a distal source for Sinemurian beds. Pre-Jurassic paragneisses located between Grand Forks and Christina Lake, southwest of Sinemurian Beds, are the most likely source area.

H. EXPLORATION TARGET

The volcanic-sedimentary contact area on the NOVA claims provides the environment typical of a "Primitive Type" Zn-Cu (Ag-Au) massive sulphide deposit. Examples of this deposit type include Noranda, Kidd Creek, Flin Flon and West Shasta. Such deposits are usually hosted in an area dominated by volcanoclastic rocks and greywacke/argillite. Their origin is within an "Island Arc" setting of deposition.

Disseminated pyrite horizons and pyrite veinlets are present in argillite and volcanic rocks, respectively. However, no massive sulphides are exposed on surface. Soil and stream sediment samples, showing anomalous Zn, Cu, Ag values, may be the result of high background metal values in the argillite or may reflect a buried massive sulphide source.

I. 1984 WORK PROGRAMME

1. Geology and Prospecting (Figure 4)

A geological-prospecting survey undertaken in the fall of 1984 defined a window of dominantly argillaceous sedimentary rocks within Rossland volcanic terrane. Situated at the headwaters of Kelly Creek, this window stretches 1.5 km northeast by 400 to 800 metres southeast. It may represent a period of quiescence during the extrusion of the Rossland volcanic pile. Regionally, the sedimentary window is situated on the southeast limb of the major southwest trending syncline, which passes through Mount Kelly (Figure 3). Bedding planes show that the window is on the southeast limb of a local anticlinal structure.

Lithologically, these sediments can be equated to Lower Jurassic Sinemurian beds, consisting of mostly slaty argillites with minor banded siltstone and bedded tuff. Locally, argillites are graphitic, with cross-cutting calcite veinlets. Bands (1 to 3 cm in width) of disseminated pyrite have been observed within black graphitic argillite. Lamprophyre sills and dykes (0.5 to 5 metres in width) are present adjacent to volcanic contact areas.

Rossland volcanic rocks form topographic highs on the NOVA claims. Augite and augite-feldspar porphyritic flows are evident at the volcanic-sedimentary contact. Pyroclastic rocks and agglomerate outcrop on the slopes of Mount Kelly and along the ridge to the southeast, where the Fire-Communications Tower is situated. Veinlets containing disseminated pyrite and pyrrhotite have been noted within volcanic rocks adjacent to the sedimentary contact. This sulphide mineralization contains no base or precious metals values.

2. Soil Geochemistry Survey

A 10.25 line kilometre reconnaissance soil geochemical survey was established over the NOVA claims. A total of 355 soil samples were collected from B-soil horizons, at 50-metre intervals across the Kelly Creek valley and the saddle between Mount Kelly and the ridge to the southeast. All samples were sent to Min-En Laboratories Ltd. in North Vancouver for analyses. All soils were analyzed for Cu, Pb, Zn, Ag, using the nitric, perchloric digestion-atomic absorption method. Au was analyzed in 180 samples using the atomic absorption method. Values for Cu, Pb, Zn and Ag were plotted on 1:5000 scale maps and contour intervals were chosen for each element.

Anomaly Parameters

Cu - 60-75 ppm - weak	Pb - 40-50 ppm
76-90 ppm - moderate	51-60 ppm - weak
91-105 ppm - strong	≥ 61 ppm - moderate
≥ 106 ppm	
Zn - 250-450 ppm - weak	Ag - 1.2-2.2 ppm - weak
451-650 ppm - moderate	2.3-3.2 ppm - moderate
651-850 ppm - strong	3.3-4.2 ppm - strong
≥ 851 ppm	≥ 4.3 ppm

Au values were insignificant and therefore they were not plotted.

2a. Soil Geochemistry Results

Cu - strong anomalous results

- (Figure 5) 1. in centre of sedimentary window between lines K 3B and K4 (100 metres along strike-length).
2. at eastern sedimentary / volcanic contact between lines K 4A and K 5B (400 metres).

- moderate anomalous results

1. surrounding the above two strong anomalous zones.
2. isolated values across grid.

- weak anomalous results

1. in centre of sedimentary window between lines K 3B and K 5B (600m along-strike length) surrounding strong anomaly and extending uphill.
2. at eastern sedimentary/volcanic contact between lines K 4A and K 5B (400 metres along-strike length).
3. two elongated zones in bottom of main creek valley (may be a result of down-slope enrichment).
4. isolated weak values in volcanic terrain.

Pb - values are weak and isolated across most of grid.
(Figure 6)

Zn - strong anomalous results

- (Figure 7)
1. in centre of sedimentary window extending from line K3 to K 5B (800 metres along-strike length).
 2. isolated value at northeast end of grid.

- weak to moderate anomalous results encompass strong values and blanket most of outlined sedimentary window.

Ag - strong anomalous results

- (Figure 8)
1. extending from western volcanic/sedimentary contact to centre of

sedimentary window (250 metres across strike of sediments).

2. two isolated values - one at southwestern contact of sedimentary window - one in centre of sedimentary window near the northern end.

- moderate anomalous results surround strong anomalies
- weak anomalous results cover the southern 3/4 of the sedimentary window

2b. Discussion of Results

Anomalous Cu, Zn and Ag values define a coincident anomaly centred over the sedimentary window, as outlined in the geological-prospecting survey. Because no Cu, Zn or Ag mineralization was found in surface exposure, it is thought that these values represent a deeper source for mobilized elements, likely within the sedimentary package. The poor results reflected in Pb geochemistry may be a function of the low mobility of the element away from the source, or may in fact be due to the relative absence of Pb, in typical "Primitive Type" Cu-Zn (Ag-Au) deposits.

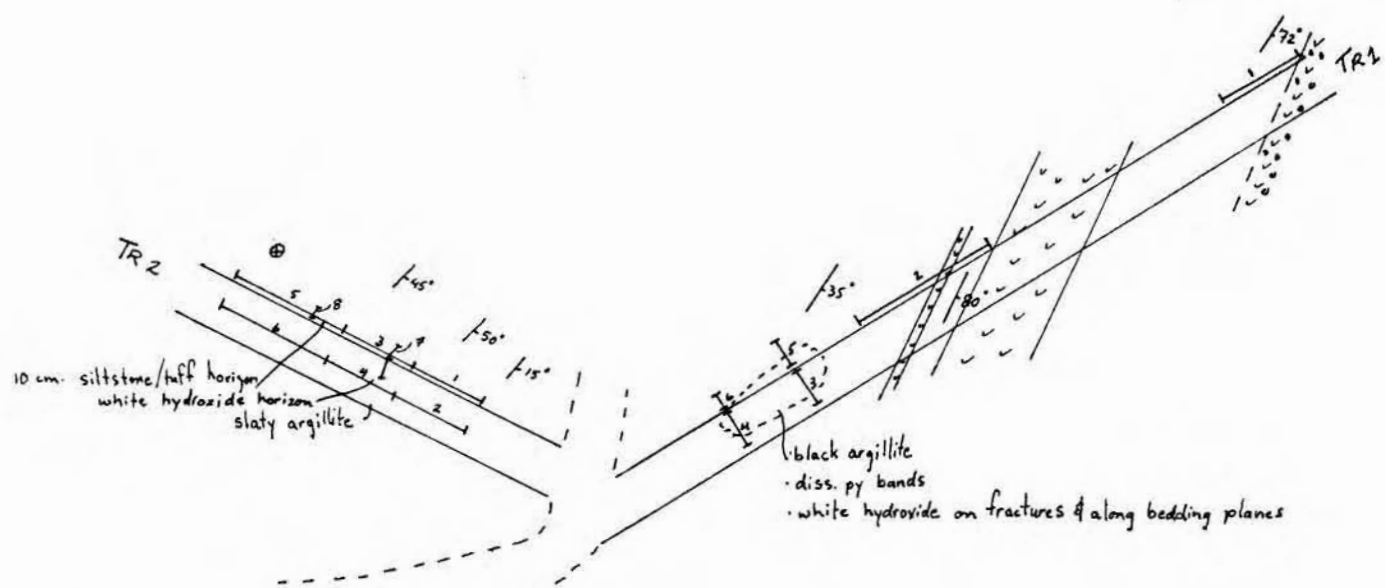
3. Trenching and Rock Geochemistry

Six bulldozer trenches totalling 350 metres in length were established over the property in November, 1984 (Figure 4). Work was contracted out to John Command of Ymir, B.C., using a D-7 Caterpillar. A total of 23 soil samples and 30 rock samples were collected from the trenches. All samples were shipped to Min-En Laboratories Ltd. in North Vancouver for geochemical analyses. Samples were analyzed for Cu, Pb, Zn, Ag, using nitric perchloric digestion-atomic absorption methods. Eight samples from Trench 2 were also analyzed for Ba, using the fusion-atomic absorption method.

3a. Trench 1 (Figure 9)

Situated along a former logging road crossing line K5, Trench 1 was excavated down to a 4-metre depth before relatively fresh, black argillite was reached. Above this, all rocks were strongly surface-leached and iron-stained. Trench 1 is within the argillite window over an area of anomalous Cu, Zn, Ag soil values. Cat trenching exposed northeast trending argillite and two lamprophyre sills. An augite-feldspar porphyry flow was unearthed at the northeast end of the trench. All units strike northeast and dip gently to steeply to the southwest.

All six samples collected over the trench showed moderate to strong anomalous Cu, Zn and weak Ag values, but nothing of even sub-economic significance. The strongest values were obtained from surface-weathered, iron-stained, grey and black argillite.



- LEGEND
- grey-black argillite
- strong Fe stain.
 - v
v - lamprophyre sills
 - v
v
v - basalt flow

RESULTS

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ba ppm
TR 1 - 1	208	20	825	2.6	
2	200	22	1120	2.6	
3	145	24	700	2.1	
4	132	21	815	2.5	
5	93	20	545	2.7	
6	74	20	358	2.0	
TR 2 - 1	38	21	143	2.2	1100
2	71	23	215	2.5	1200
3	53	22	175	2.4	1320
4	128	26	475	2.4	1340
5	136	23	180	2.3	1370
6	43	22	197	2.0	1350
7	337	22	680	2.7	1330
8	41	24	180	1.6	2600

TRENCH 1 and 2
PLAN SECTION

SCALE 1:500

15

DWF.

FIGURE 9

3b. Trench 2 (Figure 9)

Trench 2 was excavated immediately west of Trench 1, over a coincident Cu, Zn, Ag soil anomaly. Well-fractured, slaty argillite strikes northeast and dips gently to moderately to the southwest. Contorted bedding is present. Weak Zn values and weak to moderate Cu, Ag values were obtained. One sample taken across a narrow (2 cm) white hydroxide horizon, had strong Cu values (337 ppm). A 10 cm wide siltstone/tuff horizon had twice background Ba values.

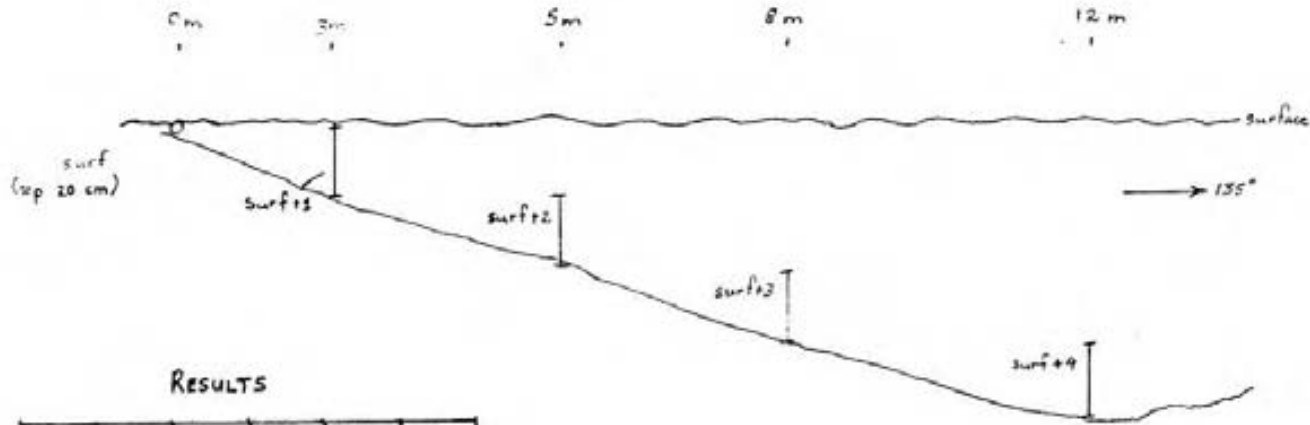
3c. Trench 3 (Figure 10)

Trench 3 is west of Trenches 1 and 2 and is probably underlain by basalt. No outcrop was exposed. One 20 cm surface sample and five, 1-metre profile samples were taken along the north wall of the trench. Ten subsurface profile samples were obtained at 20 cm intervals vertically along the south wall. Cu and Zn values show a general increase with increasing depth in both sample locations. Trench 2 was filled back in as part of an ongoing reclamation agreement with the Kelly Creek Logging Company.

3d. Trench 4 (Figure 11)

Trench 4 is near the western sedimentary/volcanic contact. The 2- to 3-metre deep trench exposed black, strongly-fractured and weathered argillite over a 170-metre distance across the strike of the sedimentary rocks. Strong iron-staining is ubiquitous. Fourteen chip samples taken at 10-metre intervals showed anomalous Cu, Zn and Ag values (90-214 ppm, 515-2000 ppm and 1.7 to 3.4 ppm respectively).

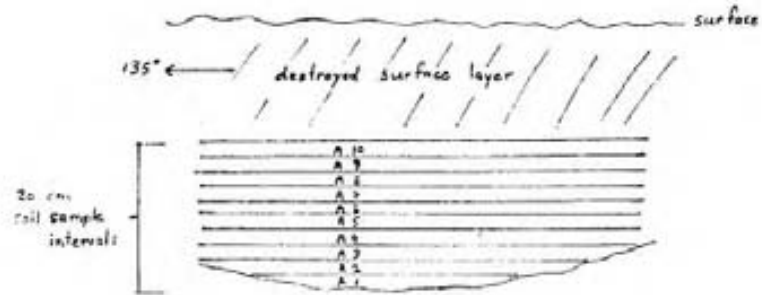
NORTH WALL PROFILE



RESULTS

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm
TR 3 - surf	67	28	136	1.1
- surf+1	55	28	172	1.1
- surf+2	55	25	128	1.0
- surf+3	61	20	152	1.1
- surf+4	76	26	208	1.1
TR 3 A - 1	72	26	164	1.2
2	70	29	165	1.2
3	73	28	148	1.1
4	78	27	142	1.2
5	78	24	114	1.1
6	66	21	109	1.2
7	52	22	110	1.0
8	52	23	106	1.2
9	50	27	135	1.3
10	54	26	132	1.1

SOUTH WALL PROFILE



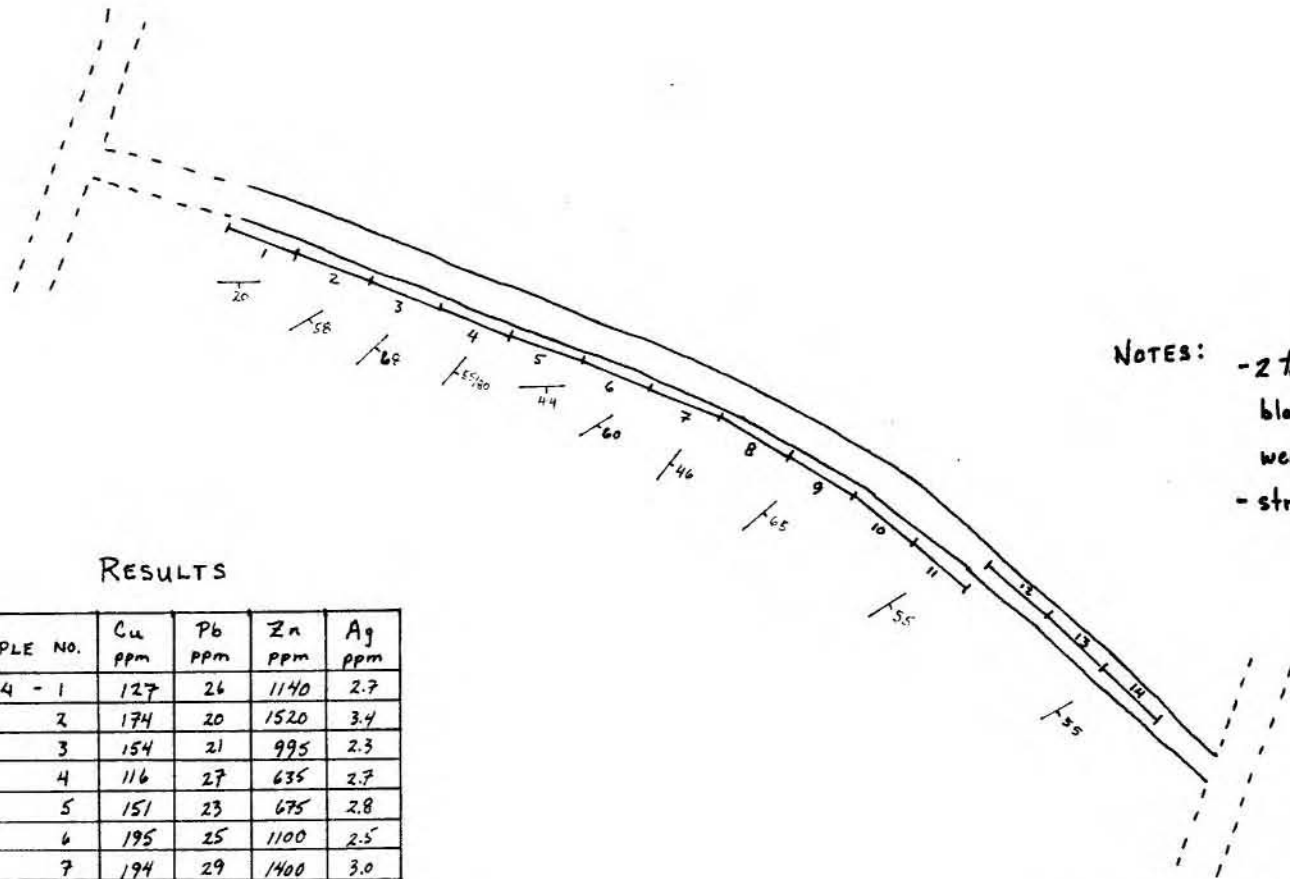
TRENCH 3
SOIL PROFILES

1.7

SCALE 1:100

0 1 2 3 metres

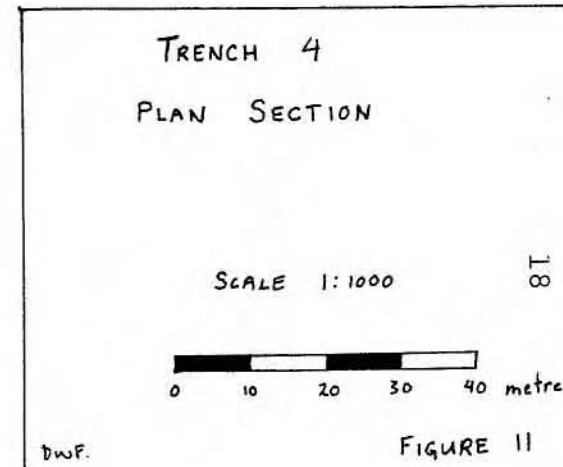
FIGURE 10



NOTES: - 2 to 3 m deep trench exposes
black, strongly fractured and
weathered argillite
- strong Fe stain

RESULTS

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm
TR4 - 1	127	26	1140	2.7
2	174	20	1520	3.4
3	154	21	995	2.3
4	116	27	635	2.7
5	151	23	675	2.8
6	195	25	1100	2.5
7	194	29	1400	3.0
8	126	27	1425	3.4
9	147	24	2000	3.4
10	214	24	1975	2.6
11	142	23	820	2.6
12	139	28	770	2.5
13	132	23	810	1.7
14	90	24	515	2.2

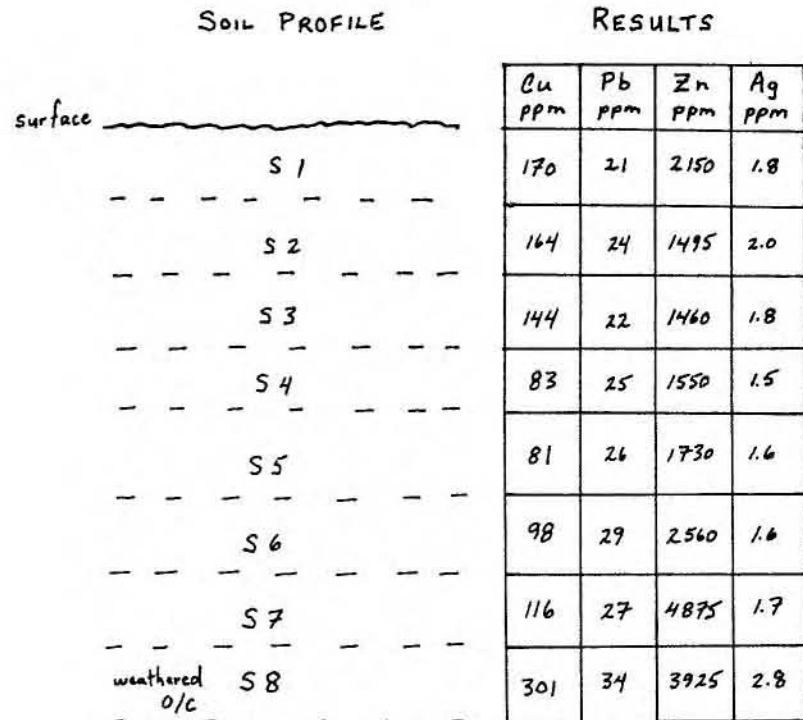
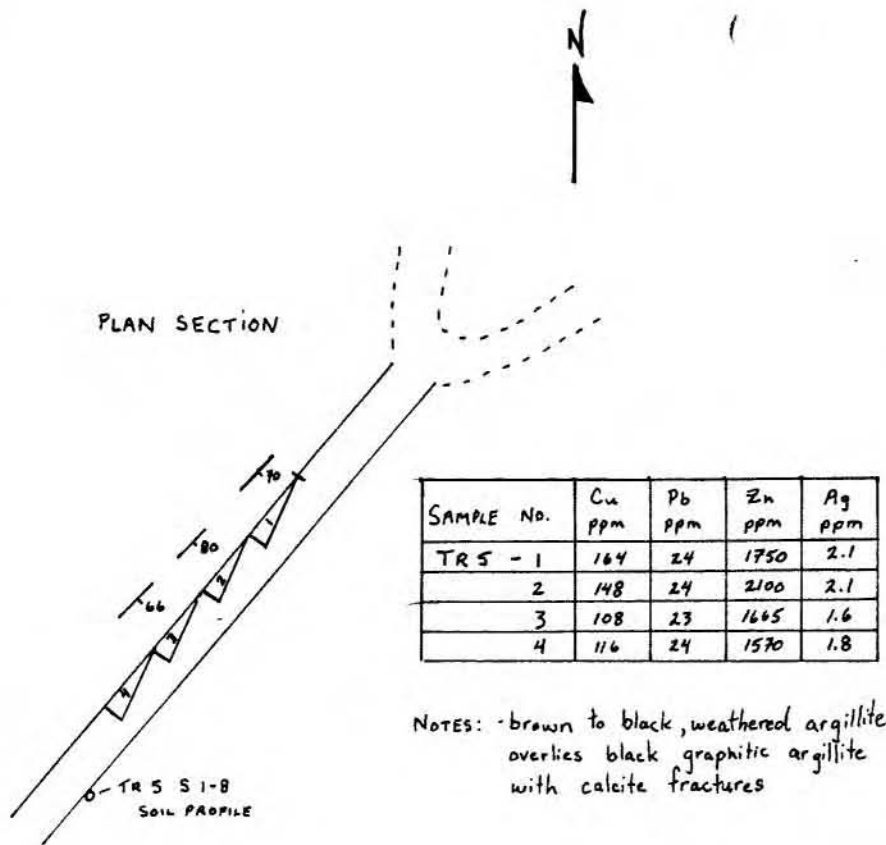


3e. Trench 5 (Figure 12)

Trench 5 is across a former cleared area off a road switchback in the south-central portion of the sedimentary window. The 1- to 2-metre deep trench exposed brown to black, surface-weathered argillite, overlying black graphitic argillite. The graphitic argillite hosts numerous calcite-filled fractures. Argillite strikes northeast and dips moderately to steeply to the southwest. Four chip samples were collected over 5-metre intervals. Moderate to strong Cu, Zn values (108-164 ppm, 1570-2100 ppm respectively) and weak Ag values were obtained. An 8-sample soil profile taken at the south end of Trench 5 indicates an increase in Cu, Pb, Zn and Ag values with depth, although immediate surface values are also enriched with respect to samples taken across intervals 60 cm below them.

3f. Trench 6 (Figure 13)

Trench 6 is uphill and to the west of Trench 4, adjacent to the sedimentary/volcanic contact. It was excavated over a former disturbed area above the Mt. Kelly access road. The one-metre deep trench exposed black, well-fractured argillite, exhibiting strong iron-staining. A narrow (10 cm) siltstone/tuff horizon and a basic dyke were also uncovered. The argillites strike northwest and dip gently to the northeast. Seven chip samples were taken at 5-metre intervals along the length of the trench. Only weak Cu, Zn and Ag values were obtained. Four rock samples obtained from surface exposures over the NOVA claims (1464-1467) showed no anomalous Cu, Pb, Zn, Ag or Au values (Figure 4, Appendix 1).

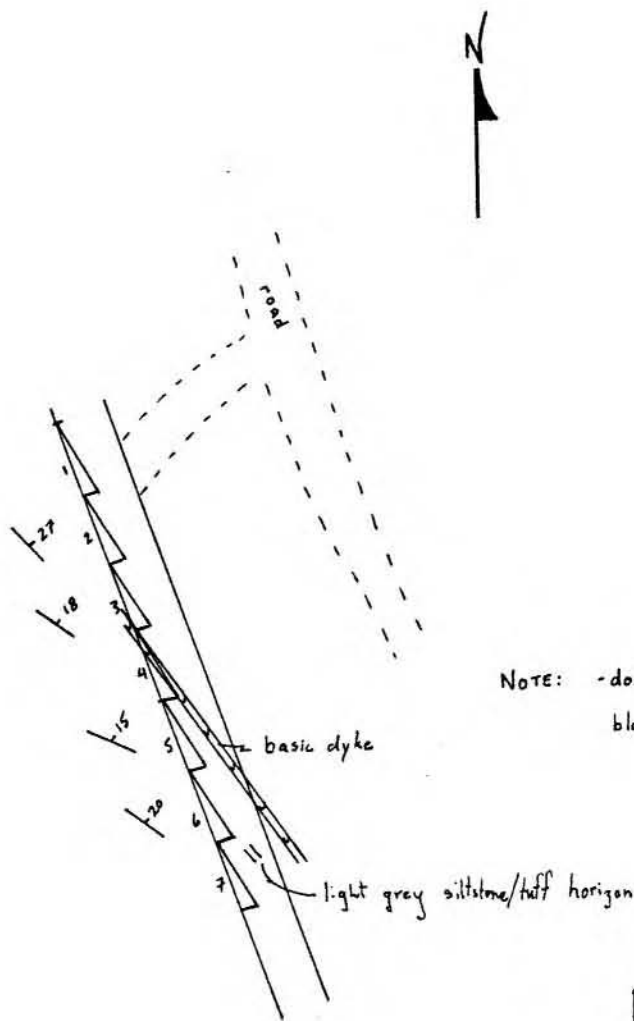


TRENCH 5

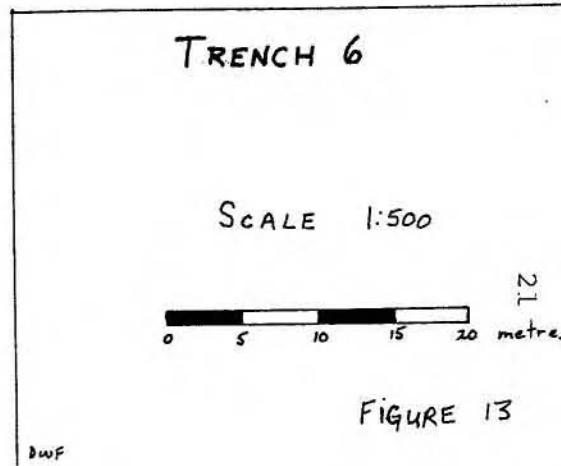
FIGURE 12

RESULTS

SAMPLE NO.	Cu ppm	Pb ppm	Zn ppm	Ag ppm
TR 6 - 1	50	28	357	1.5
2	82	21	464	2.0
3	86	20	675	1.6
4	97	23	535	1.8
5	77	23	570	1.5
6	72	21	481	2.1
7	20	17	136	1.4



NOTE: - dominant lithology is black argillite with strong Fe-stain.



3g. Discussion of Results

Trenching succeeded in exposing only a small amount of "non-surface weathered" rock. Soil anomalies are generally underlain by weathered argillite that contains anomalous levels of Cu, Zn and Ag; however, in some instances, rocks below soil anomalies are not geochemically anomalous. Soil profiles show an increase in Cu, Pb, Zn and Ag values, with increasing depth. These data suggest two possible sources for soil anomalies on the property:

1. anomalous background Cu, Zn, Ag values in argillite, unrelated to massive sulphide mineralization
2. anomalous Cu, Zn, Ag values in argillite, indicative of a nearby massive sulphide deposit

Because large amounts of overburden, mainly in the form of surface weathered rocks, has to be removed during the trenching process, further extensive trenching is not proposed. Reclamation on this property is a necessity and would be very cost intensive. Diamond or percussion drilling is recommended as a future tool for subsurface exploration.



Del W. Ferguson

REFERENCES

- ATKINSON, J.R., 1984 - Kokanee Project Summary- Pend-d'Oreille River- Beaver Creek Area.
- LITTLE, H.W., 1960 - Nelson Map-Area, West Half, British Columbia (82F W $\frac{1}{2}$), G.S.C. Memoir 308, pp. 60-67, 106.

1984 COST STATEMENTSALARIES

1 prospector - 16 days @\$100./day	\$ 1600.00
1 geologist - 26 days @\$150./day	<u>3900.00</u>
	5500.00

GEOCHEMISTRY

31 rocks analyzed for Cu,Pb,Zn,Ag @\$7.20/sample	223.20
8 rocks analyzed for Cu,Pb,Zn,Ag,Ba @\$13.75/sample	111.60
6 rocks analyzed for Cu,Pb,Zn,Ag,Au @\$14.45/sample	86.70
198 soils analyzed for Cu,Pb,Zn,Ag @\$5.55/sample	1098.90
180 soils analyzed for Cu,Pb,Zn,Ag,Au @\$10.30/sample	1854.00
Sample shipment	<u>240.00</u>
	3614.40

TRANSPORTATION

Fuel	373.00
Maintenance	<u>200.00</u>
	573.00

FOOD AND ACCOMMODATION

16 days X \$40./man/day X 2 men	1280.00
---------------------------------	---------

CONTRACT TRENCHING

39 cat hours @\$78./hr.	3042.00
Mobe/Demob: charges	<u>236.00</u>
	3278.00

MISCELLANEOUS SUPPLIES AND COMMUNICATION

200.00

REPORT PREPARATION AND DRAFTING

800.00

RECLAMATION COSTS - 40 trees @\$20./tree800.00

SUB-TOTAL

16,045.40

1984 COST STATEMENT (cont'd.)ADDITIONAL EXPENDITURES (not eligible for assessment)CLAIM FEES

- Staking 30 units @\$45./unit	1350.00
- Claim recording	150.00
- Assessment filing:	
30 units @\$100./year X 3 yrs.=9,000.00	
30 units @\$200./year X 1 yr. =6,000.00	
	<u>\$15,000.00</u>
\$5.00 per \$100.00	<u>750.00</u>
SUB-TOTAL	<u>2250.00</u>
T O T A L	<u><u>\$18,295.40</u></u>



MINERAL ACT

STATEMENT OF EXPLORATION AND DEVELOPMENT

I, Del W. Ferguson (Name) Agent for Billiton Canada Ltd. (Name)
3239 W. King Edward Ave. (Address) 460-601 W. Cordova St. (Address)
Vancouver, B.C. Vancouver, B.C.
V6L 1V6 (Postal Code) 734-8347 (Telephone Number) V6B 1G1 (Postal Code) 669-5535 (Telephone Number)
Valid subsisting F.M.C. No. 265907 Valid subsisting F.M.C. No. 264938

STATE THAT

1. I have done, or caused to be done, work on the NOVA 1 and NOVA 2 Claims/
Record No.(s) 3899, 3900
Situate at Kelly Creek in the Nelson Mining Division,
to the value of at least 16,045 dollars. Work was done from the 13th day
of October 1984 to the 05th day of December 1984

2. The following work was done in the 12 months in which such work is required to be done:

(COMPLETE APPROPRIATE SECTION(S) A, B, C, D, FOLLOWING)

A. PHYSICAL (Trenches, open cuts, adits, pits, shafts, reclamation, and construction of roads and trails)

(Give details as required by section 13 of regulations.)

	COST
<u>6 trenches totalling 350 meters excavated with</u>	
<u>D-7 caterpillar - 39 hours at \$78/hr.</u>	<u>3042.00</u>
<u>- Mobe and Demobe charges</u>	<u>236.00</u>
<u>Reclamation costs - 40 trees at \$20 per tree</u>	<u>800.00</u>
<u>payable to Kelly Creek Logging Co.</u>	
<u>TOTAL PHYSICAL</u>	<u>4078.00</u>

I wish to apply \$ 4000.00 of physical work to the claims listed below.

(State number of years to be applied to each claim, its month of record, and identify each claim by name and record no.)

NOVA 1 - 3899 - October - 10 units - 2 years
NOVA 2 - 3900 - October - 20 units - 1 year

B. PROSPECTING (Details in reports submitted as per section 9 of regulations. (The itemized cost statement must be part of the report.)

COST

I wish to apply \$ _____ of this prospecting work to the claims listed below.

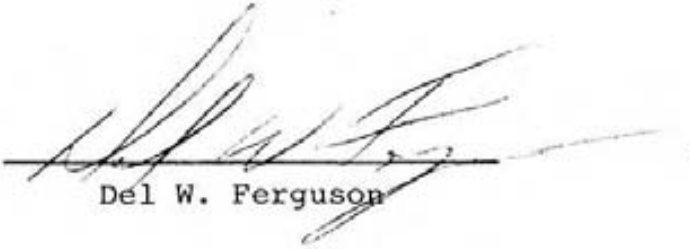
(State number of years to be applied to each claim, its month of record, and identify each claim by name and record no.)

(For C and D sections, please turn over.)

STATEMENT OF QUALIFICATIONS

I, Del W. Ferguson, of 3239 West King Edward Avenue, Vancouver, B.C., certify that:

- 1) I am a geologist presently contracted out to Billiton Canada Ltd., with offices at 460- 601 West Cordova Street, Vancouver, B.C.
- 2) I am a graduate of the University of Western Ontario (Honours B.Sc., 1979).
- 3) I have been practicing my profession since 1979.



Del W. Ferguson

APPENDIX I

ANALYTICAL RESULTS

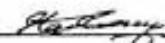
SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AG PPM	AU PPB	
STANDARD	61	112	101	3.9	690	
K10+00W	38	29	149	0.6	5	
0+50W	28	33	160	0.5	5	
1+00W	91	20	147	0.7	10	
1+50W	39	13	161	0.8	5	
2+00W	41	19	207	0.6	5	
2+50W	39	16	158	0.6	5	
3+00W	45	16	127	0.6	<5	
3+50W	42	30	151	0.5	5	
4+00W	39	20	164	0.5	5	
4+50W	50	16	141	0.5	5	
5+00W	46	26	166	0.6	5	
5+50W	35	18	155	0.4	5	
6+00W	63	17	188	0.6	5	
6+50W	43	16	146	0.6	10	
7+00W	43	19	222	0.6	5	
7+50W	40	16	202	0.6	5	
8+00W	32	14	292	0.7	5	
8+50W	35	20	252	0.6	5	
9+00W	34	22	275	0.6	10	
9+50W	37	16	211	0.6	10	
10+00W	34	19	259	0.6	5	
10+50W	55	38	209	0.7	5	
11+00W	36	39	118	0.4	10	
11+50W	35	35	142	0.5	5	
12+00W	38	18	120	0.4	5	
12+50W	34	26	125	0.4	5	
13+00W	51	34	103	0.5	5	
13+50W	30	20	90	0.4	10	
14+00W	37	22	103	0.4	5	
14+50W	30	28	82	0.4	5	
K114+50W	30	28	82	0.4	5	DUPLICATE
STANDARD	60	111	102	4.0	700	
STANDARD	60	109	103	4.0	700	
K115+00W	43	20	115	0.5	5	
15+50W	26	20	101	0.4	5	
16+00W	38	24	87	0.6	<5	
16+50W	39	22	60	0.6	5	
17+00W	36	22	80	0.4	10	
17+50W	34	18	74	0.4	5	
18+00W	30	38	114	0.4	5	
18+50W	38	68	139	0.4	5	
19+00W	39	40	146	0.6	5	
19+50W	39	20	93	0.4	5	
20+00W	34	15	85	0.5	5	
20+50W	41	26	105	0.5	5	
21+00W	47	40	113	0.6	<5	
K121+50W	50	20	120	0.6	5	
K20+00W	58	16	203	0.8	5	
0+50W	41	18	165	0.7	5	
1+00W	47	38	217	0.7	5	
1+50W	68	18	480	0.9	5	
2+00W	42	18	260	0.6	10	
2+50W	47	18	400	0.8	5	
3+00W	41	18	240	0.6	5	
3+50W	51	19	303	0.8	10	
4+00W	34	20	291	0.7	5	
4+50W	32	18	254	0.6	10	
5+00W	37	20	191	0.6	5	
5+50W	36	21	223	0.6	5	
6+00W	38	19	206	0.5	5	
6+50W	31	18	182	0.6	5	
7+00W	33	17	246	0.6	5	
7+50W	33	16	305	0.6	5	
K27+50W	33	16	304	0.6	5	
STANDARD	60	109	102	4.0	700	

Certified by

[Signature]

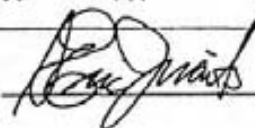
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STANDARD	61	110	103	4.1	705
K2-B+00W	45	20	265	0.6	5
B+50W	67	22	317	0.5	10
9+00W	45	20	237	0.8	10
K2-10+00W	34	44	165	0.6	5
K3-0+00W	79	22	270	0.7	10
0+50W	36	18	286	0.7	5
1+00W	91	26	797	0.8	15
1+50W	41	16	385	1.0	5
2+00W	34	14	414	1.2	5
2+50W	23	13	235	1.0	5
3+00W	34	18	440	1.4	5
3+50W	51	22	600	1.0	5
4+00W	40	26	714	0.9	10
4+50W	30	21	580	0.8	5
5+00W	34	18	606	1.0	5
5+50W	28	16	586	1.2	10
6+00W	44	22	1620	0.8	5
6+50W	36	28	840	0.8	5
7+00W	32	17	530	0.7	5
7+50W	30	18	510	0.8	10
8+00W	43	20	452	1.0	5
8+50W	41	21	275	0.8	5
9+00W	34	16	178	1.2	10
9+50W	31	24	260	0.8	5
10+00W	29	19	157	0.6	5
K3-10+50W	40	18	374	0.6	5
K1-22+00W	37	20	124	0.6	10
0+50E	49	20	159	0.7	5
1+00E	51	24	138	0.6	5
K1-1+50E	50	26	187	0.8	5
K1-1+50E (DUP)	51	26	186	0.8	5
STANDARD	62	110	102	4.0	700
STANDARD	61	115	101	3.9	695
K12+00E	35	23	105	0.7	5
2+50E	58	28	127	0.9	5
3+00E	70	25	98	0.8	10
3+50E	62	28	123	0.8	5
K14+00E	69	29	120	0.9	5
K20+50E	46	41	190	0.8	5
1+00E	54	26	164	0.9	5
K311+00W	34	22	87	0.7	5
11+50W	35	32	86	0.7	5
12+00W	27	23	85	0.8	5
0+50E	50	27	367	1.3	<5
1+00E	43	36	440	0.9	5
K40+50E	47	29	223	0.8	5
1+00E	41	22	186	0.9	5
0+00W	41	22	264	0.9	5
0+50W	46	29	335	1.0	<5
1+00W	45	20	389	1.1	5
1+50W	38	21	281	1.3	10
2+00W	51	30	316	1.0	5
2+50W	95	19	3700	1.2	5
3+00W	91	28	3980	1.6	5
3+50W	35	45	3700	0.7	70
4+00W	30	23	2060	1.0	5
4+50W	47	28	1140	2.0	5
5+00W	42	29	795	2.2	5
5+50W	46	26	905	3.5	5
6+00W	48	24	895	2.4	5
6+50W	38	25	588	1.7	5
7+00W	25	22	231	0.9	5
7+50W	30	22	116	2.7	5
K47+50W DUP	30	23	115	2.7	5
STANDARD	60	112	100	3.9	700

Certified by



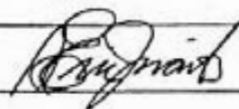
SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AG PPM	AU PPB
STANDARD	62	113	101	3.8	700
K48+00W	25	21	268	0.8	5
8+50W	30	24	234	0.9	10
9+00W	30	22	126	0.7	5
9+50W	48	29	98	0.9	5
K410+00W	40	46	111	0.9	5
K60+00W	36	34	218	1.1	<5
0+50W	37	42	290	1.0	5
1+00W	42	24	337	1.2	5
1+50W	52	24	205	0.8	5
2+00W	46	36	140	0.7	5
0+50E	41	21	239	1.3	5
1+00E	42	22	306	1.4	5
1+50E	49	22	147	0.7	<5
2+00E	107	23	208	0.6	10
2+50E	101	25	115	0.7	5
K63+00E	77	36	120	0.7	5
K70+50W	29	25	264	0.7	5
0+00W	30	22	100	0.7	5
0+50E	30	27	101	0.8	<5
1+00E	32	40	117	0.8	20
1+50E	36	28	123	0.7	5
2+00E	59	32	1180	0.8	5
2+50E	44	29	130	0.7	5
K73+00E	41	22	102	0.8	5
K50+00W	60	35	492	1.2	10
0+50W	57	24	1425	1.6	5
1+00W	83	29	521	0.9	5
1+50W	58	24	123	0.8	5
2+00W	57	23	120	0.7	5
2+50W	47	25	111	0.7	5
K52+50W DUP	47	25	111	0.7	5
STANDARD	62	111	101	3.9	710
STANDARD	61	111	100	3.9	700
K5-3+00W	56	39	103	0.6	5
3+50W	62	33	93	0.7	5
4+00W	72	80	103	0.8	10
4+50W	68	31	108	0.7	5
5+00W	61	42	103	0.6	5
0+50E	46	28	800	0.9	5
1+00E	47	42	725	1.0	10
1+50E	66	29	1530	1.2	10
2+00E	60	34	391	0.7	5
2+50E	100	36	202	0.7	5
3+00EA	112	44	131	1.0	5
K5-3+00EB	96	39	163	0.9	10
K8-0+00E	47	28	93	0.7	5
0+50E	41	34	68	0.5	5
1+00E	41	40	100	0.6	<5
K8-1+50E	103	30	145	1.0	5
K3-20+00W	38	29	84	0.7	5
20+50W	39	32	72	0.8	5
21+00W	62	30	83	0.6	5
21+50W	37	32	82	0.6	5
22+00W	60	30	117	1.4	5
23+00W	57	27	90	0.6	<5
23+50W	45	27	121	0.9	5
L3-24+00W	30	33	96	0.7	5
K3.5-11+50W	47	31	189	0.9	5
12+00W	31	25	109	0.6	5
12+50W	42	25	124	0.7	5
K3.5-13+00W	59	30	86	0.7	5
K2-9+50W	37	32	212	0.5	5
K3-22+50W	29	41	201	0.9	5
K3-22+50W (DUP)	29	41	201	0.9	5
STANDARD	61	112	102	4.0	700

Certified by



SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AG PPM
STANDARD	63	112	103	4.0
K5A-0+00E	58	24	905	1.8
0+50E	79	22	1920	2.5
1+00E	52	26	975	1.4
1+50E	77	27	525	1.6
2+00E	68	38	370	1.2
2+50E	77	26	192	1.0
3+00E	75	28	215	1.4
3+50E	104	32	139	1.2
4+00E	68	26	127	1.2
0+50W	34	26	1055	1.4
1+00W	35	26	302	1.2
1+50W	42	25	151	1.2
2+00W	51	43	113	1.0
2+50W	55	33	142	1.0
3+00W	45	23	96	1.0
3+50W	56	29	95	1.1
4+00W	57	36	88	1.0
4+50W	64	38	95	1.2
K5A-5+00W	62	29	86	1.2
K5B-1+00E	34	26	239	1.4
0+50E	89	28	675	2.6
0+00E	71	33	1310	3.6
0+50W	44	24	466	1.4
1+00W	32	29	383	1.9
1+50W	40	30	148	1.2
2+00W	78	31	189	1.2
2+50W	57	50	133	1.0
3+00W	63	52	168	1.0
3+50W	50	26	109	1.0
K5B-4+00W	50	30	95	1.0
K5B-4+00W (DUP)	50	30	95	1.0
STANDARD	63	112	103	4.1
STANDARD	62	110	103	4.1
K5B-4+50W	63	35	112	1.0
K5B-5+00W	50	30	97	1.0
K4A-5+50E	56	30	502	1.2
5+00E	65	28	650	1.4
4+50E	108	33	625	1.4
4+00E	62	28	830	1.6
3+50E	47	24	395	1.3
3+00E	46	27	555	1.6
2+50E	84	31	2850	1.6
2+00E	46	37	900	1.0
1+50E	41	27	330	1.3
1+00E	38	24	170	1.0
0+35E	63	26	163	1.2
0+00E	46	34	160	1.0
0+50W	50	56	193	1.0
1+00W	57	48	142	1.0
1+50W	62	38	128	1.1
2+00W	56	40	118	1.2
2+50W	50	50	115	1.0
3+00W	46	33	114	1.0
3+50W	42	26	92	1.0
K4A-4+00W	54	28	144	1.2
K4B-0+00E	ND	SAMPLE		
0+50E	57	24	100	1.0
1+00E	81	24	116	1.1
1+50E	52	21	228	1.0
2+00E	44	24	570	1.4
2+50E	70	25	437	1.6
3+00E	90	28	1300	1.6
K4B-3+50E	54	23	670	1.8
K4B-3+50E (DUP)	53	23	669	1.8
STANDARD	62	112	104	4.1

Certified by



SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AG PPM
STANDARD	63	111	103	4.2
K4B-4+00E	53	28	445	1.3
4+50E	104	34	895	1.8
5+00E	85	72	456	1.4
5+50E	61	34	409	1.5
6+00E	58	40	274	1.1
6+50E	41	42	241	1.3
7+00E	46	45	323	1.2
0+00EW	61	28	190	1.4
0+50W	56	29	177	1.2
1+00W	53	29	182	1.3
1+50W	53	30	230	1.4
2+00W	52	32	332	1.4
2+50W	46	42	134	1.4
K4B-3+00W	28	24	105	1.2
K3A-3+00E	39	44	207	1.1
2+50E	56	28	348	1.3
2+00E	70	32	458	1.7
1+50E	63	31	268	1.7
1+00E	44	33	300	1.5
0+50E	51	29	253	1.6
0+00E	52	26	240	1.5
0+50W	47	34	273	1.4
1+00W	63	25	317	1.5
1+50W	39	27	233	1.5
2+00W	40	28	344	1.5
2+50W	71	29	910	1.8
3+00W	46	33	675	1.5
3+50W	41	29	940	1.2
4+00W	57	28	1165	2.1
K3A-4+50W	36	24	995	2.7
K3A-4+50W (DUP)	35	23	998	2.7
STANDARD	62	112	103	4.1
STANDARD	63	112	102	4.2
K3A-5+00W	36	26	810	1.7
5+50W	39	22	855	1.9
6+00W	29	26	650	2.0
6+50W	32	26	450	1.6
7+00W	36	28	459	2.2
7+50W	39	27	284	1.6
8+00W	39	28	304	2.2
8+50W	35	29	269	1.8
9+00W	37	27	272	2.6
9+50W	39	24	257	5.1
10+00W	60	33	357	1.8
10+50W	34	31	96	1.1
K3A-11+00W	46	32	91	1.6
K3B-0+00E	67	35	284	1.6
0+50E	49	29	307	1.3
1+00E	50	23	205	1.6
1+50E	49	27	233	1.2
2+00E	95	35	301	1.8
K3B-0+50W	80	49	350	1.3
1+00W	41	23	324	1.4
1+50W	60	33	1065	0.9
2+00W	68	29	3100	1.7
2+50W	40	28	925	1.6
3+00W	44	27	2400	1.3
3+50W	82	32	5625	1.7
4+00W	56	29	3440	5.8
4+50W	89	41	5500	3.8
5+00W	115	66	5125	3.6
5+50W	47	24	1350	3.6
K3B-6+00W	32	22	675	2.1
K3B-6+00W (DUP)	32	23	676	2.0
STANDARD	62	111	103	4.2

Certified by

[Signature]

40MESH

SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AG PPM
STANDARD	61	114	103	3.9
K3B-6+50W	31	22	456	1.4
7+00W	27	24	318	2.0
7+50W	28	23	267	1.6
8+00W	28	25	156	1.8
8+50W	27	21	108	1.8
9+00W	24	22	150	2.2
9+50W	27	25	91	1.0
K3B-10+00W	29	24	69	0.5
K9-0+25S	47	36	115	1.1
0+50S	40	23	130	1.0
0+75S	50	22	131	1.0
1+00S	52	31	135	1.1
1+25S	54	35	180	1.2
1+50S	48	37	136	1.1
1+75S	53	41	214	1.2
K9-2+00S	62	27	269	1.4
K10-0+25S	60	33	106	1.3
0+50S	56	43	111	1.2
0+75S	54	28	98	1.1
1+00S	39	26	116	1.1
1+25S	50	34	192	1.0
1+50S	53	25	230	1.2
1+75S	50	26	221	1.2
2+00S	44	29	258	1.1
2+25S	42	30	267	1.0
K10-2+50S	63	39	191	1.2
K11-0+25S	61	32	106	0.9
0+50S	60	43	116	1.2
0+75S	42	21	113	0.9
K11-1+00S	47	25	142	1.0
K11-1+00S (DUP)	47	25	142	1.0
STANDARD	61	114	104	3.9
STANDARD	62	114	103	3.9
K11-1+25S	59	26	193	1.1
1+50S	56	29	221	1.0
1+75S	48	31	312	0.9
K11-2+00S	52	25	390	0.9
K12-0+25S	54	30	118	1.0
0+50S	35	29	126	1.0
0+75S	42	31	163	1.1
1+00S	36	27	270	1.2
1+25S	42	38	127	1.1
K12-1+50S	58	33	116	1.1
K13-0+25S	54	41	123	1.2
0+50S	52	29	95	1.0
0+75S	43	34	106	0.9
1+00S	45	43	103	1.0
1+25S	57	40	108	1.3
1+50S	49	68	143	1.1
1+75S	55	37	125	1.3
K13-2+00S	68	30	102	1.2
K14-0+25S	41	23	92	1.1
0+50S	37	24	110	1.0
0+75S	42	35	111	1.3
1+00S	45	30	118	1.2
1+25S	51	32	129	1.2
1+50S	48	27	91	1.1
1+75S	42	28	100	1.0
K14-2+00S	41	30	129	0.9
K14-2+00S (DUP)	41	30	129	0.9
STANDARD	62	114	103	3.8

Certified by



SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AG PPM
STANDARD	62	110	103	4.2
TR5-S1	170	21	2150	1.8
52	164	24	1495	2.0
53	144	22	1460	1.8
54	83	25	1550	1.5
55	81	26	1730	1.6
56	98	29	2560	1.6
57	116	27	4875	1.7
TR5-BB	301	34	3925	2.8
TR3-SURF	67	28	136	1.1
SURF +1	55	28	172	1.1
SURF +2	55	25	128	1.0
SURF +3	61	24	152	1.1
TR3-SURF +4	76	26	208	1.1
TR3A-1	72	26	164	1.2
2	70	29	165	1.2
3	73	28	148	1.1
4	78	27	142	1.2
5	78	24	114	1.1
6	66	21	109	1.2
7	52	22	110	1.0
8	52	23	106	1.2
9	50	27	135	1.3
TR3A-10	54	26	132	1.1
TR3A-10 (DUP)	53	26	134	1.1

STANDARD	62	111	103	4.2
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SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AG PPM	BA PPM
STANDARD	63	114	103	3.8	500
TR1-1	208	20	825	2.6	
2	200	22	1120	2.6	
3	145	24	700	2.1	
4	132	21	515	2.5	
5	93	20	545	2.3	
TR1-6	74	20	358	2.0	
TR2-1	38	21	143	2.2	1100
2	71	23	215	2.5	1200
3	53	22	175	2.4	1320
4	128	26	475	2.4	1340
5	136	23	180	2.3	1370
6	43	22	197	2.0	1350
7	337	22	680	2.7	1330
TR2-8	41	24	180	1.6	2600
TR4-1	127	26	1140	2.7	
2	174	20	1520	3.4	
3	154	21	995	2.3	
4	116	27	635	2.7	
5	151	23	675	2.8	
6	195	25	1100	2.5	
7	194	29	1400	3.0	
8	126	27	1425	3.4	
9	147	24	2000	3.4	
10	214	24	1975	2.6	
11	142	23	820	2.6	
12	139	28	770	2.5	
13	132	23	810	1.7	
TR4-14	90	24	515	2.2	
TR5-1	164	24	1750	2.1	
TR5-2	148	24	2100	2.1	
TR5-2 (DUP)	148	24	2090	2.2	
STANDARD	62	114	104	3.9	500

Certified by

Eric Jack

SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AG PPM	AU PPM
STANDARD	61	112	102		3.0
IRG-3	198	23	1665		1.6
IRG-4	116	24	1570		1.8
IRG-1	50	21	357		1.5
2	82	21	464		2.0
3	86	20	675		1.6
4	47	23	535		1.8
5	77	23	570		1.5
6	72	21	481		2.1
IRG-7	20	17	136		1.4
IRG-7 (DUP)	20	17	133		1.3
STANDARD	60	114	104		3.9

SAMPLE NUMBER	CU PPM	PB PPM	ZN PPM	AG PPM	AU PPM	
1464	62	32	80	0.9	5	R-K3-22+00W
65	58	97	88	0.7	<5	R-K3.5-13+00W
66	57	25	85	0.7	5	R-K4.5
1467	91	26	85	0.5	<5	R-K6-2+00E
1467 (DUP)	91	26	85	0.5	<5	
STANDARD	61	111	101	3.9	700	

Certified by



ROCK SAMPLES

SAMPLE N°	LOCATION	TYPE	WIDTH	DESCRIPTION	Au	Ag	Cu	Pb	Zn			
1464	Figure 4	chip	25 m	- Fe-stained argillite and intercalated thin (1-2 cm) tuff bands - numerous calcite veinlets - disseminated py \leq 1%	5	0.9	62	32	80			
1465	"	chip	40 m	- contorted, siliceous black argillite beds and intercalated bands of grey tuff 1 to 2% disseminated pyrite-pyrrhotite - also few bands (up to 5 cm thick) of stringer pyrite & pyrrhotite - very fine-grained sulphides	<5	0.7	58	97	88			
1466	"	grab	20 m	- augite porphyry - 1% disseminated pyrite & pyrrhotite - few quartz-carbonate veinlets carry specks of pyrrhotite	5	0.7	57	25	85			
1467	Line K6 2+00E on road	chip	10 m	- black argillite - bands (2 to 5 cm thick) of disseminated pyrite & pyrrhotite	<5	0.5	91	26	85			

APPENDIX II

ICP ANALYSES

COMPANY: BILLITON CANADA LTD.

MIN-EN LABS ICP REPORT

(ACT:GE03B)

PROJECT No: 940

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2

FILE No: 4-1556A

LOCATION: D. FERGUSON

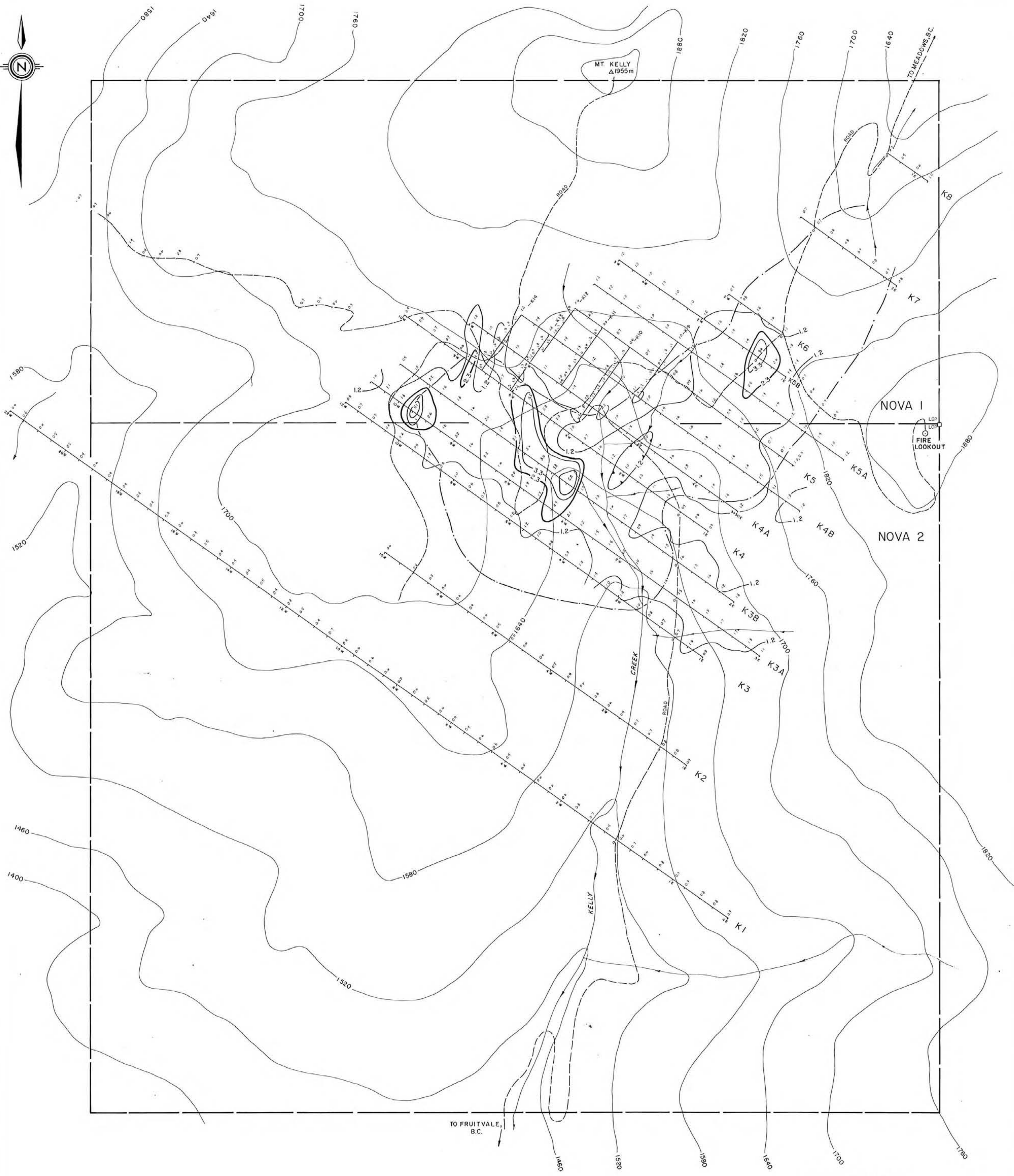
(604)980-5814 OR (604)988-4524

TYPE ROCK GEOCHEM

DATE: DECEMBER 3, 1984

(REPORT VALUES IN PPM)	AG	AL	AS	B	BI	CA	CD	CO	CU	FE	K	MG
TRI-7	2.5	10100	28	0	6	3180	9.9	12	197	36800	2910	1210
(REPORT VALUES IN PPM)	MN	MO	NA	NI	P	PB	SB	SR	TH	U	V	ZN
TRI-7	90	39	191	79	1340	27	26	30	4	1	98.4	906
(REPORT VALUES IN PPM)	BA	SE										
TRI-7	197	0										

Sample Description: -black argillite from bottom of Trench 1
-strong,white hydroxide-coated fractures
-5 cm. bands of disseminated pyrite

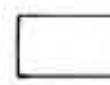
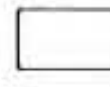





CONTOUR INTERVAL = 60m

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,047

LEGEND:

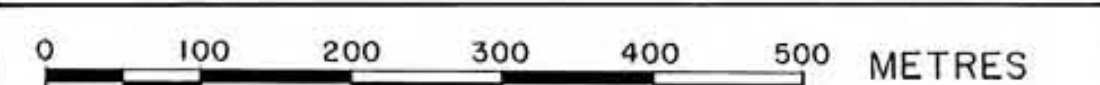
-  1.2 - 2.2 P.P.M. SILVER
-  2.3 - 3.2 P.P.M. SILVER
-  3.3 - 4.2 P.P.M. SILVER
-  4.3+ P.P.M. SILVER
-  OUTLINE OF SEDIMENTARY WINDOW

BILLITON CANADA LTD.

KELLY CREEK PROPERTY
NELSON M.D. - B.C. NTS 82-F-3

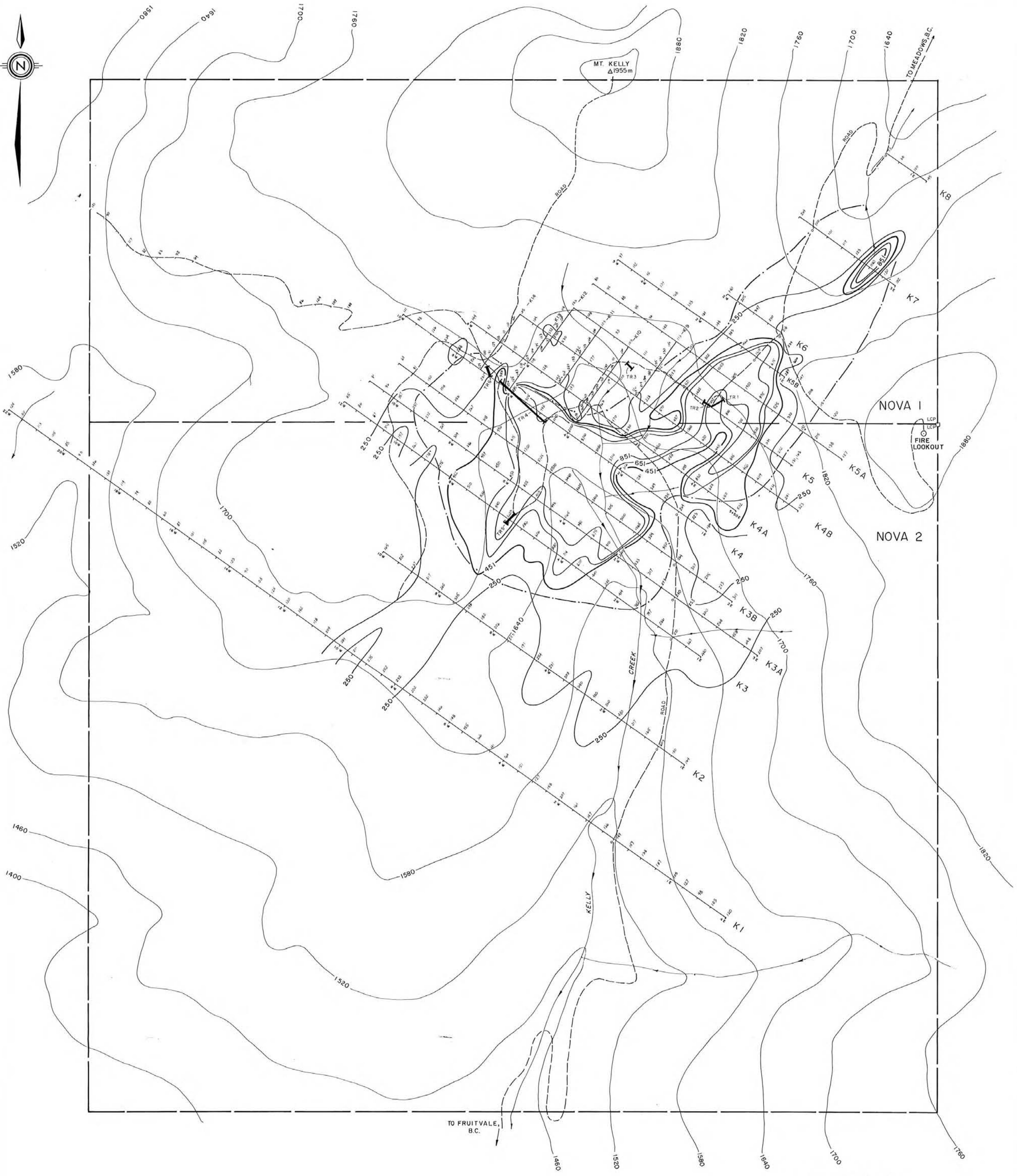
NOVA CLAIMS

SOIL GEOCHEMISTRY
SILVER RESULTS IN P.P.M.



BY: D.W.F. J.w.r.
DATE: NOV., 1984

MAP No. 8









CONTOUR INTERVAL = 60m

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,047

LEGEND:

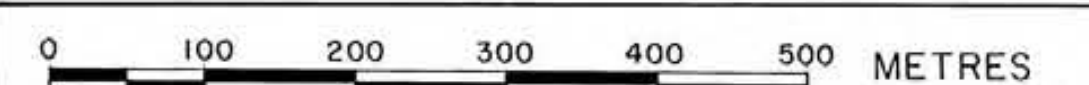
-  250 - 450 PPM ZINC
-  450 - 650 PPM ZINC
-  651 - 850 PPM ZINC
-  851 + PPM ZINC
-  TRENCH LOCATION
-  OUTLINE OF SEDIMENTARY WINDOW

BILLITON CANADA LTD.

KELLY CREEK PROPERTY
NELSON M.D. - B.C. NTS 82-F-3

NOVA CLAIMS

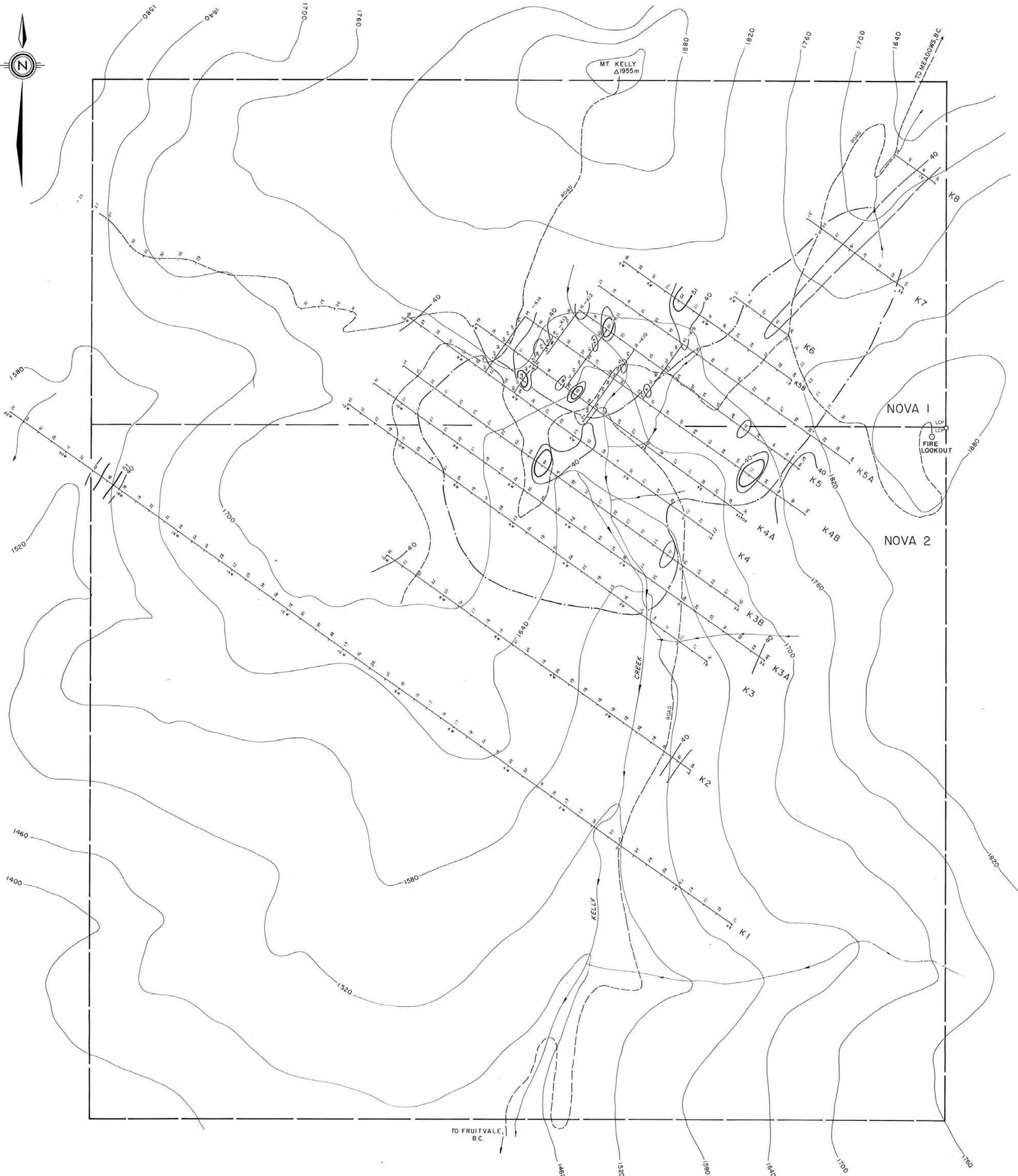
SOIL GEOCHEMISTRY
ZINC RESULTS IN P.P.M.



BY: D.W.F./m.r.
DATE: NOV., 1984

MAP No. 7

25



TO FRUITVALE,
B.C.

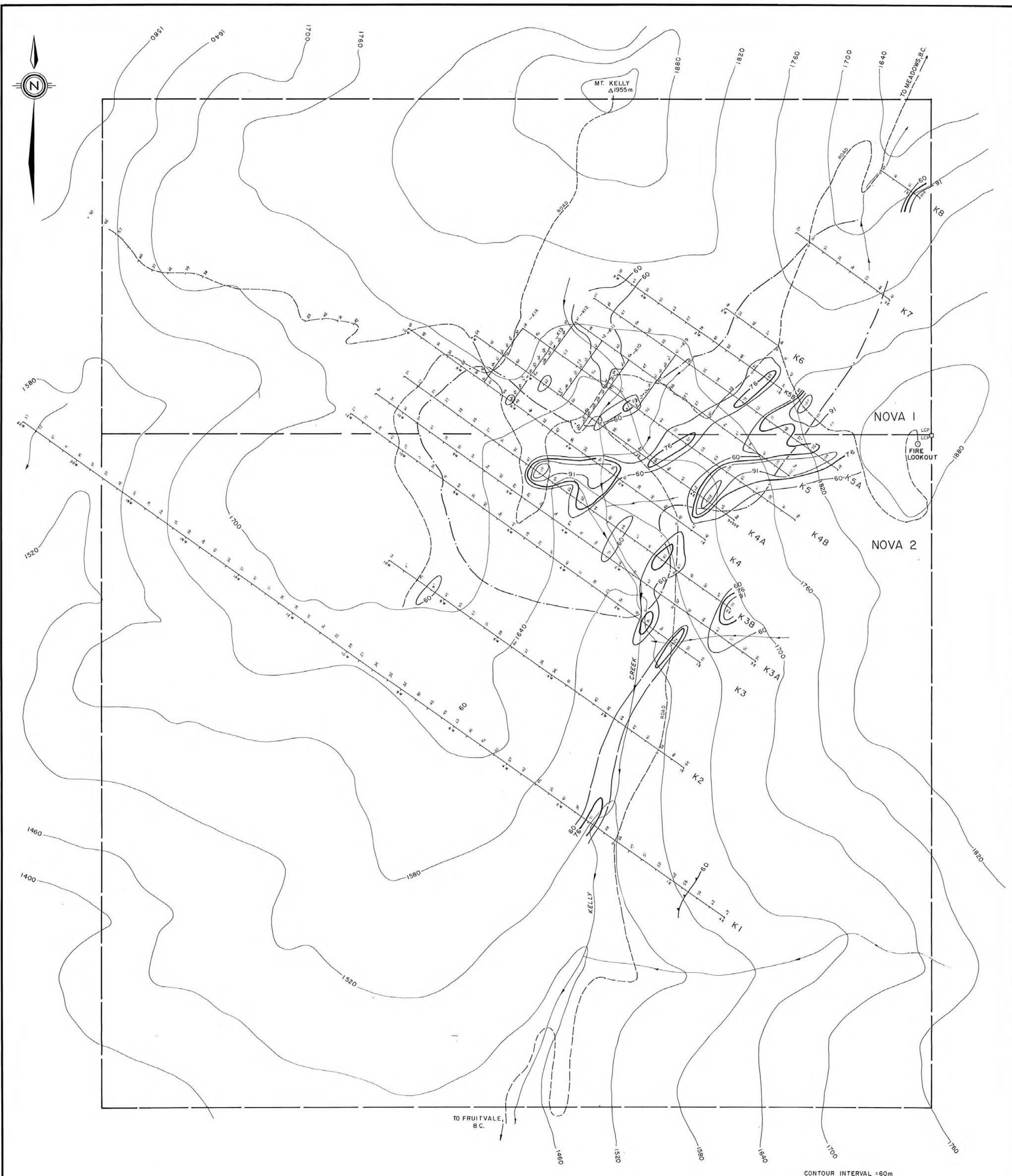
CONTOUR INTERVAL = 60m

- LEGEND:**
- 40 - 50 PPM LEAD
 - 51 - 60 PPM LEAD
 - 61 + PPM LEAD
 - OUTLINE OF SEDIMENTARY WINDOW

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,047

BILLITON CANADA LTD.	
KELLY CREEK PROPERTY NELSON M.D. - B.C. NTS 82-F-3	
NOVA CLAIMS	
SOIL GEOCHEMISTRY LEAD RESULTS IN P.P.M.	
BY: D.W.F./c.w.r.	MAP No. 6
DATE: NOV., 1984	



LEGEND:

- 60 - 75 P.P.M. COPPER
- 76 - 90 P.P.M. COPPER
- 91 - 105 P.P.M. COPPER
- 106+ P.P.M. COPPER

--- OUTLINE OF SEDIMENTARY WINDOW

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,047

CONTOUR INTERVAL = 60m

BILLITON CANADA LTD.

KELLY CREEK PROPERTY
NELSON M.D. - B.C. NTS 82-F-3

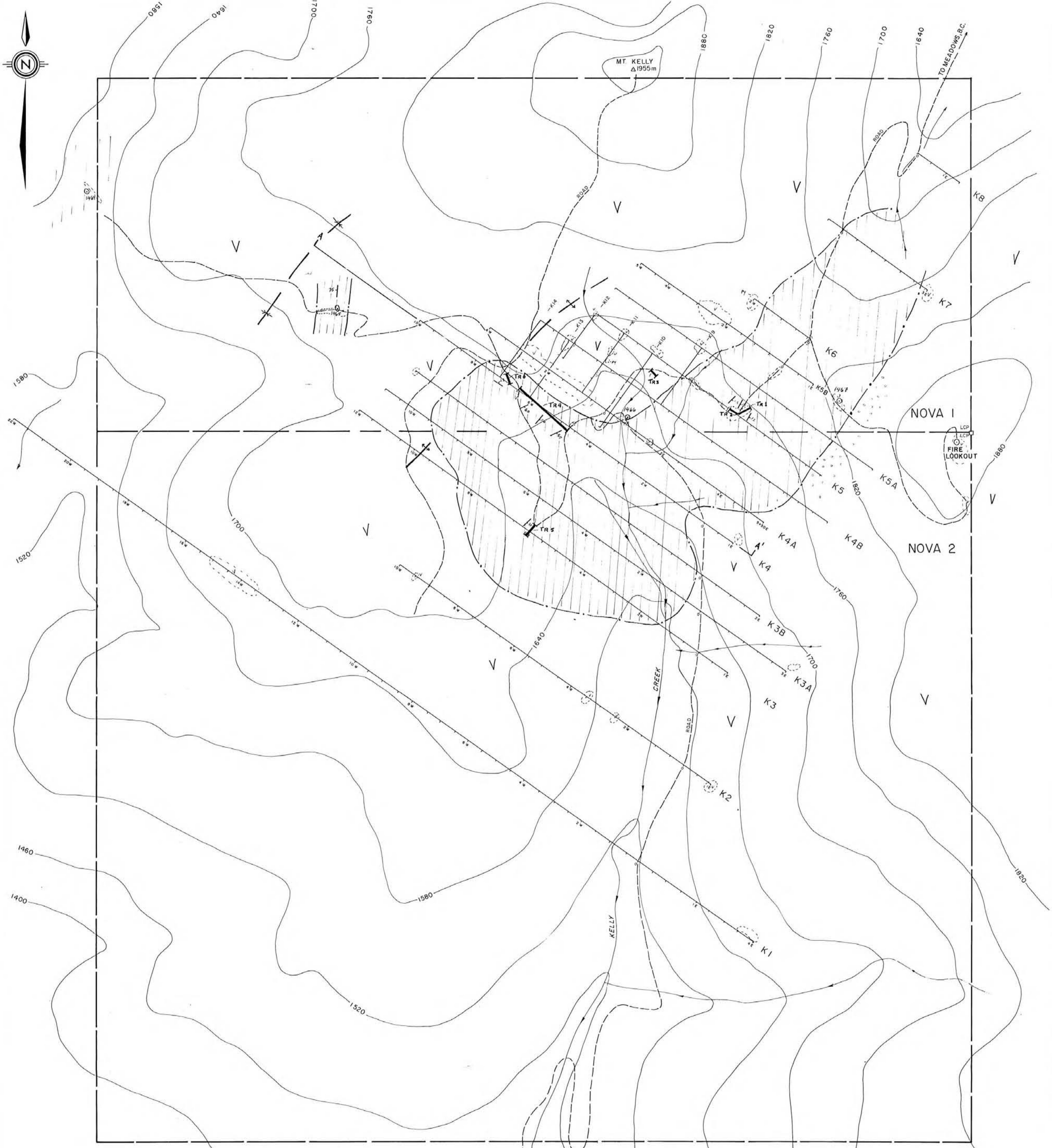
NOVA CLAIMS

SOIL GEOCHEMISTRY
COPPER RESULTS IN P.P.M.



BY: D.W.F./r.w.r.
DATE: NOV., 1984

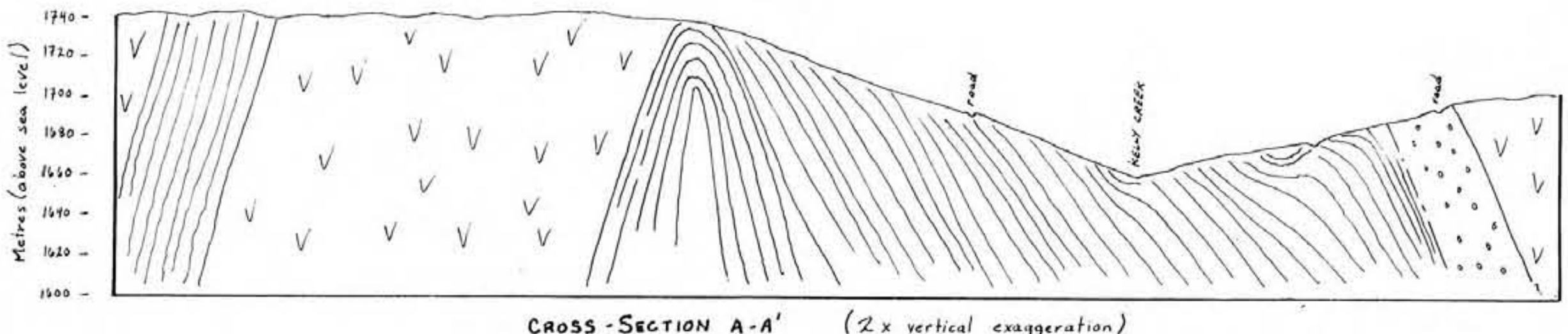
MAP NO. 5



- LEGEND**
- LOWER JURASSIC ROSSLAND FORMATION
 - AUGITE PORPHYRY, AUGITE-FELDSPAR PORPHYRY, FLOWS, PYROCLASTICS, AGGLOMERATE
 - TUFF
 - SINEMURIAN BEDS
 - ARGILLITE (SLATY, MINOR GRAPHITIC), MINOR SILTSTONE/TUFF HORIZONS, FEW BASIC SILLS AND DYKES
 - TRENCH
 - ROCK SAMPLE
 - GEOLOGICAL CONTACT
 - STRIKE AND DIP
 - SYNCLINE (MAJOR REGIONAL)
 - ANTICLINE STRUCTURE
 - OUTCROP
 - Py PYRITE

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

A 13,047



BILLITON CANADA LTD.

KELLY CREEK PROPERTY
NELSON M.D. - B.C. NTS 82-F-3

NOVA CLAIMS

GEOLOGY MAP

0 100 200 300 400 500 METRES

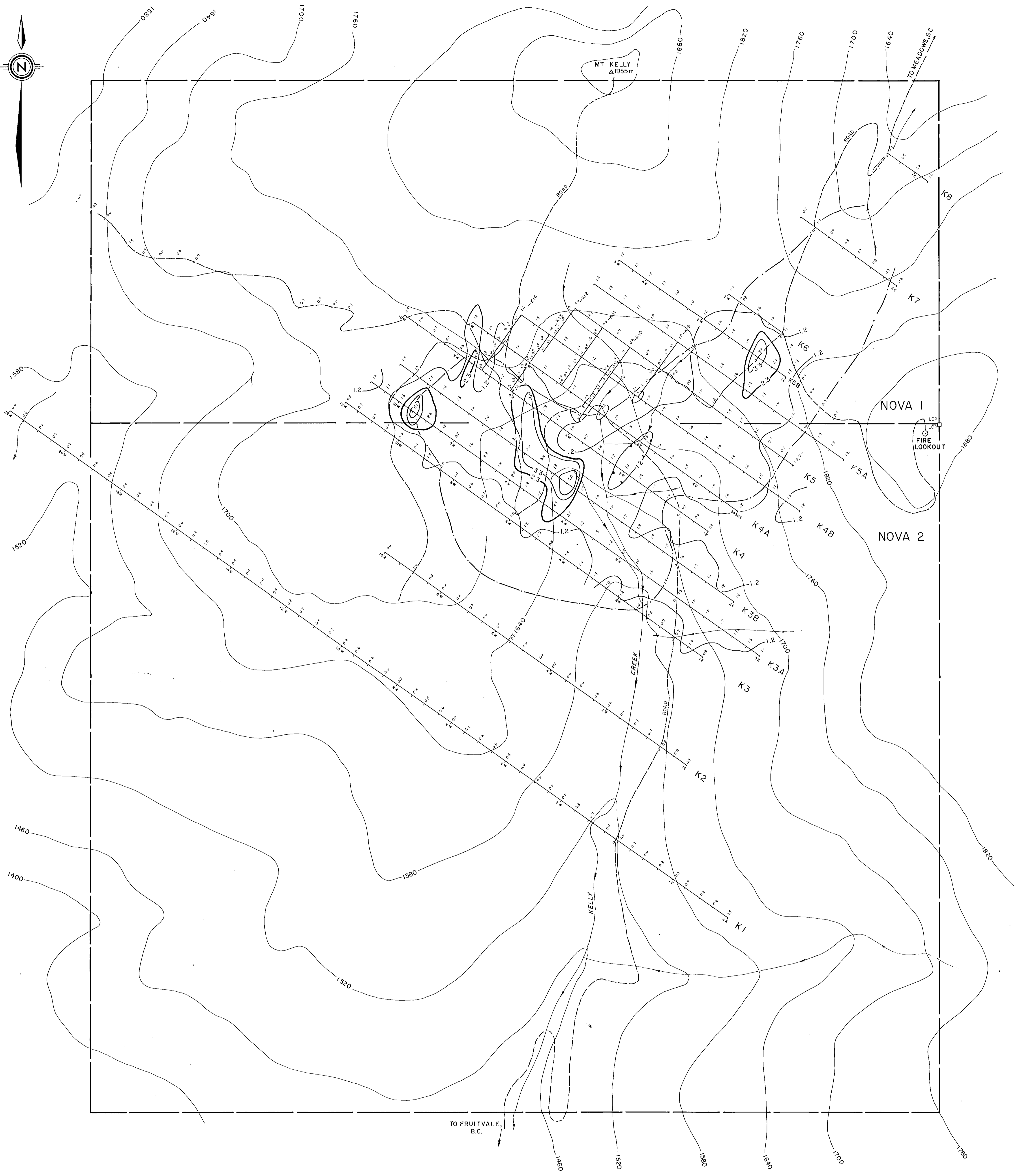
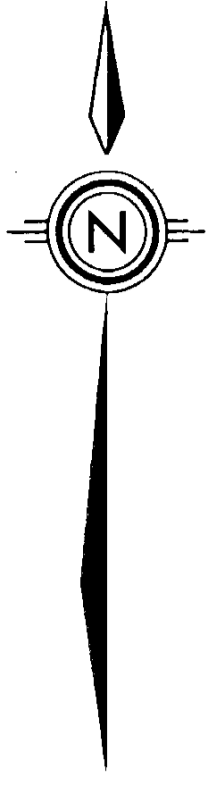
BY: D.W.F./r.w.r.
DATE: NOV., 1984

MAP NO. 4

CONTOUR INTERVAL = 60m

TO FRUITVALE,
B.C.

TO MEADOWS, B.C.





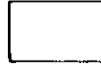


TO FRUITVALE, B.C.

CONTOUR INTERVAL = 60m

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,047

LEGEND:

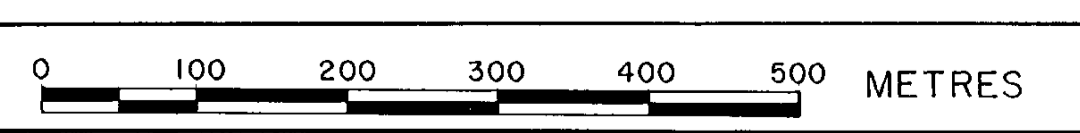
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-  2.3 - 3.2 PPM. SILVER
-  3.3 - 4.2 PPM. SILVER
-  4.3+ PPM. SILVER
-  OUTLINE OF SEDIMENTARY WINDOW

BILLITON CANADA LTD.

KELLY CREEK PROPERTY
NELSON M.D. - B.C. NTS 82-F-3

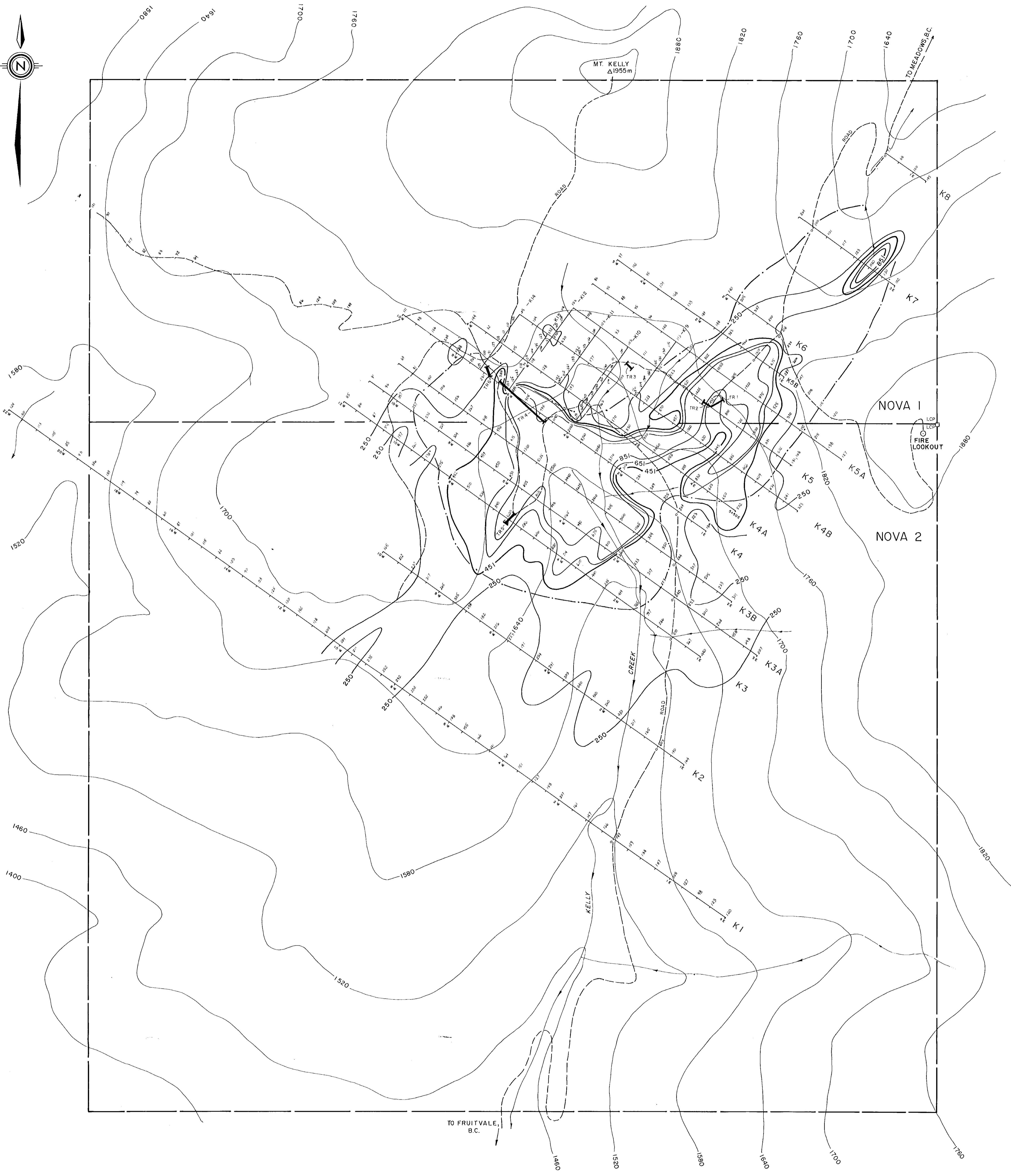
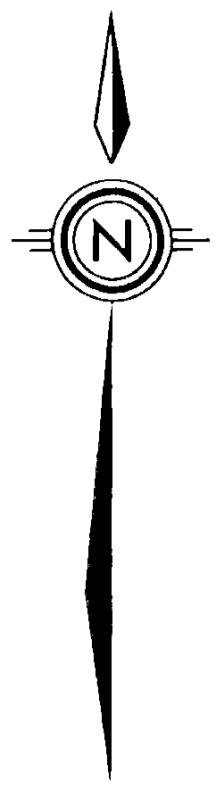
NOVA CLAIMS

SOIL GEOCHEMISTRY
SILVER RESULTS IN P.P.M.



BY: D.W.F./c.m.r.
DATE: NOV., 1984

MAP No. 8

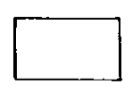
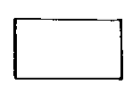
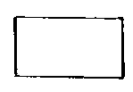
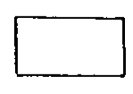




CONTOUR INTERVAL = 60m

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,047

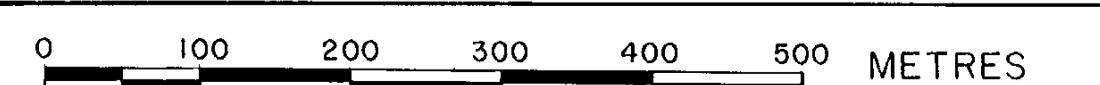
LEGEND:

-  250 - 450 P.P.M. ZINC
-  450 - 650 P.P.M. ZINC
-  651 - 850 P.P.M. ZINC
-  851 + P.P.M. ZINC
-  TRENCH LOCATION
-  OUTLINE OF SEDIMENTARY WINDOW

BILLITON CANADA LTD.

KELLY CREEK PROPERTY
NELSON M.D. - B.C. NTS 82-F-3

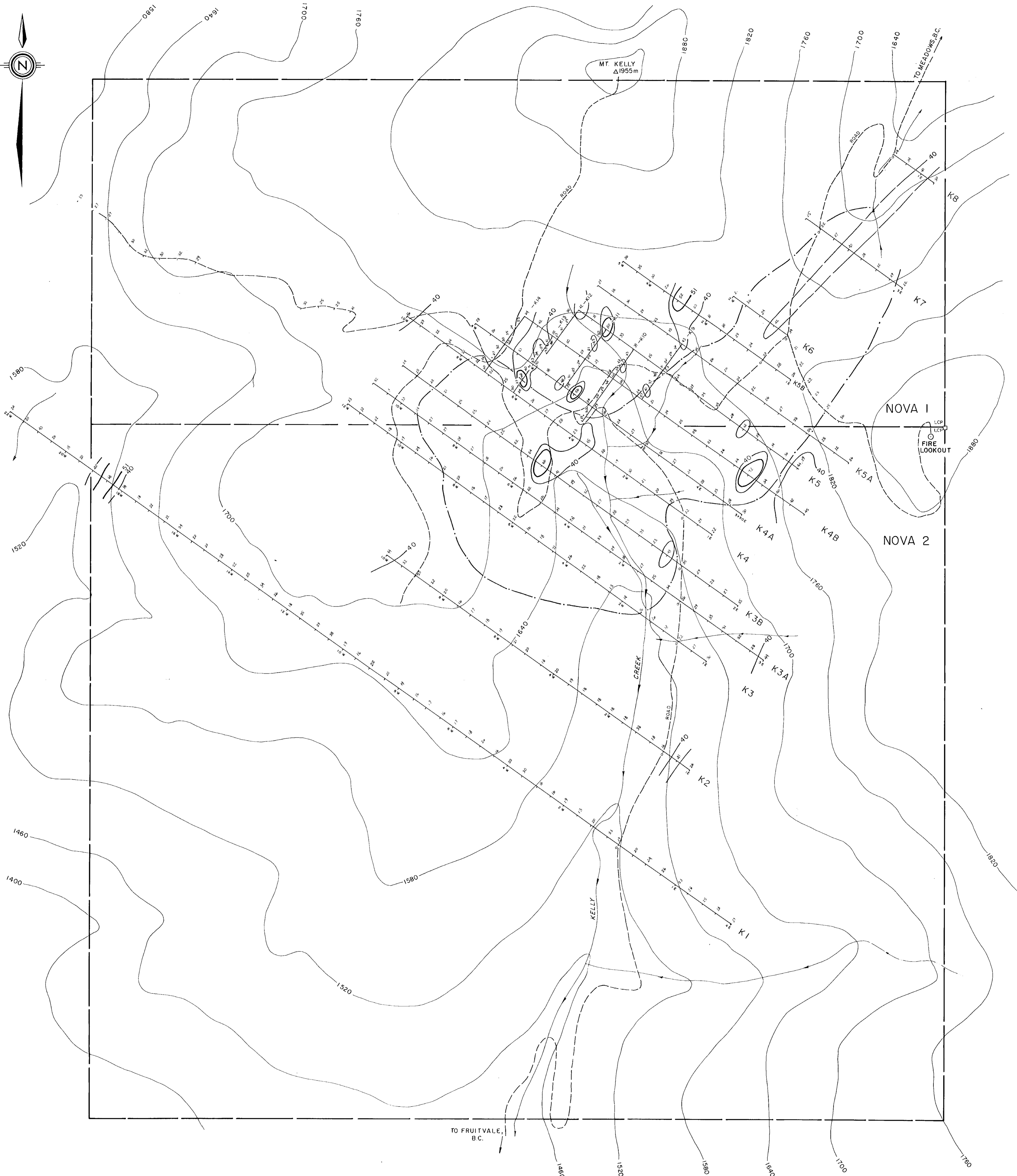
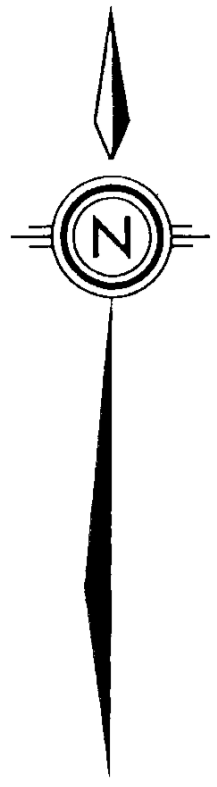
NOVA CLAIMS
SOIL GEOCHEMISTRY
ZINC RESULTS IN P.P.M.



BY: D.W.F./r.w.r.
DATE: NOV., 1984

MAP No. 7

2.0



TO FRUITVALE, B.C.

CONTOUR INTERVAL = 60m

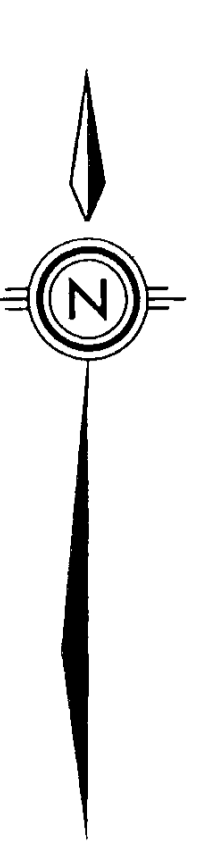
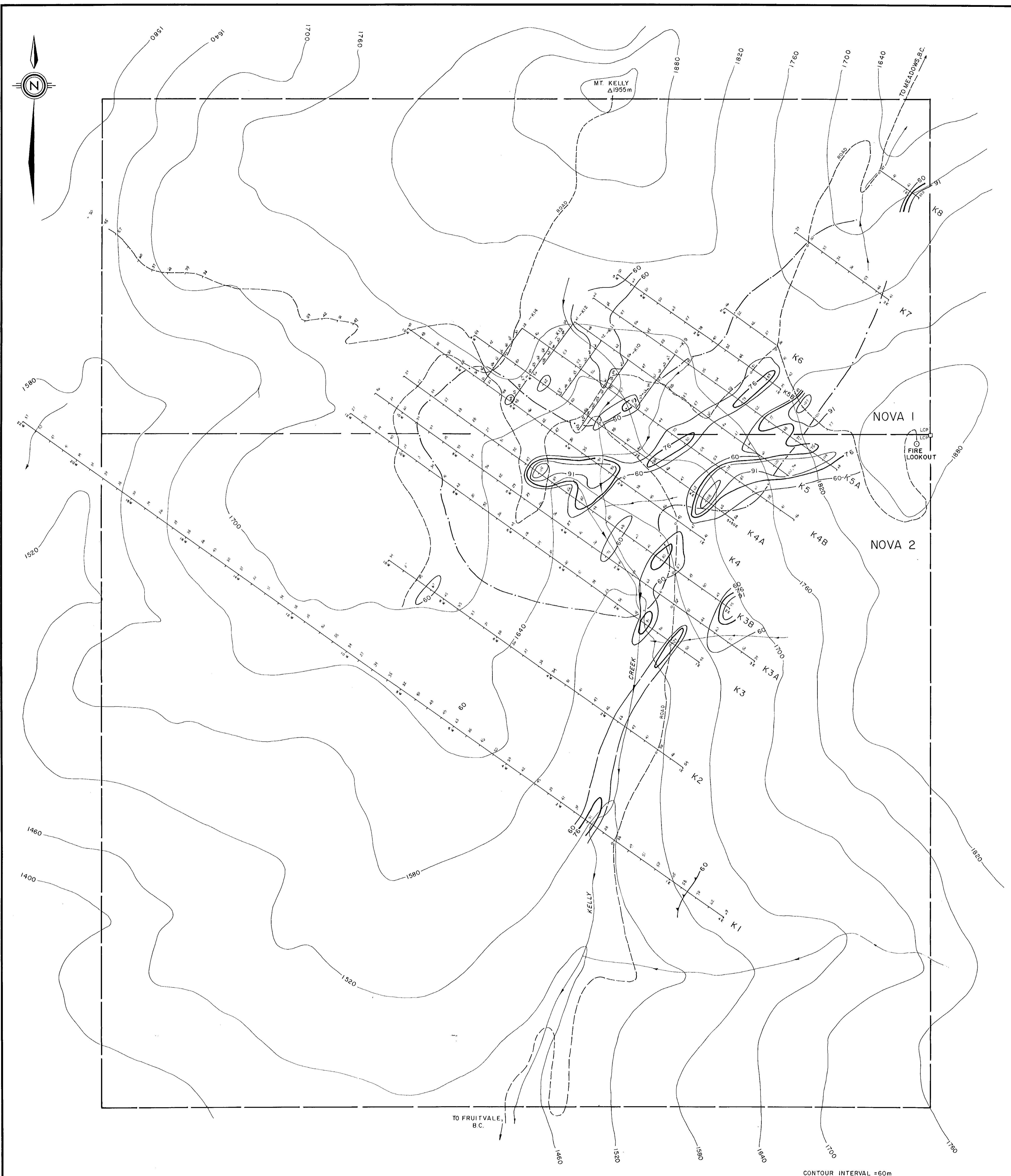
- LEGEND:**
- 40 - 50 PPM LEAD
 - 51 - 60 PPM LEAD
 - 61 + PPM LEAD
 - OUTLINE OF SEDIMENTARY WINDOW

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,047

BILLITON CANADA LTD.	
KELLY CREEK PROPERTY NELSON M.D. - B.C. NTS 82-F-3	
NOVA CLAIMS	
SOIL GEOCHEMISTRY LEAD RESULTS IN P.P.M.	
BY: D.W.F./r.w.r. DATE: NOV, 1984	
MAP NO. 6	

Pb



MT KELLY
Δ 1955m

NOVA 1

NOVA 2

LCP
O
FIRE
LOOKOUT

TO FRUITVALE,
B.C.

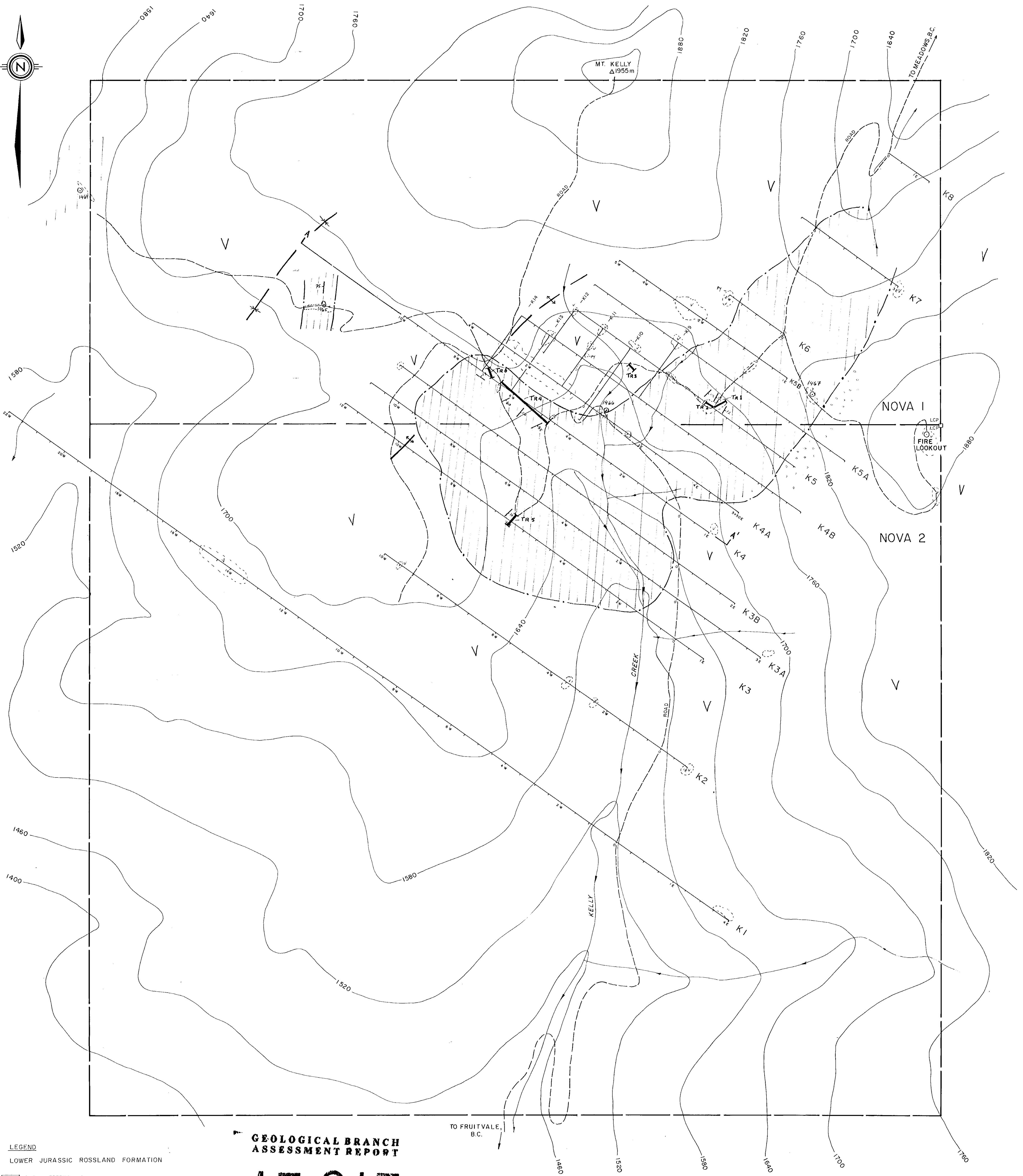
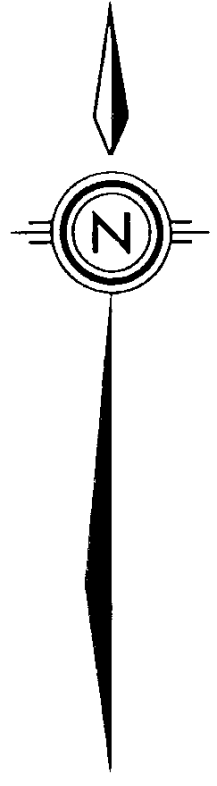
CONTOUR INTERVAL = 60m

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,047

- LEGEND:**
- 60 - 75 P.P.M. COPPER
 - 76 - 90 P.P.M. COPPER
 - 91 - 105 P.P.M. COPPER
 - 106+ P.P.M. COPPER
 - OUTLINE OF SEDIMENTARY WINDOW

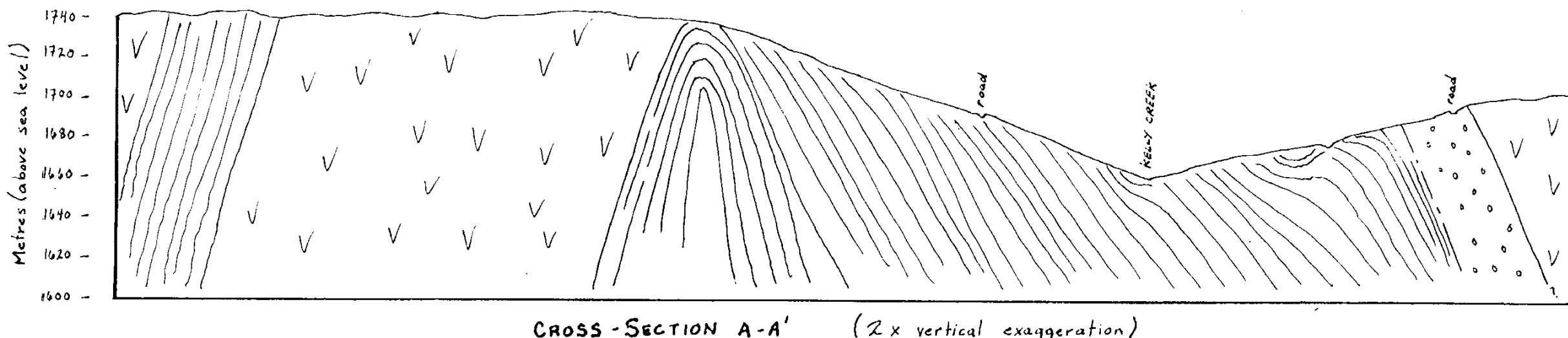
BILLITON CANADA LTD.	
KELLY CREEK PROPERTY NELSON M.D. - B.C. NTS 82-F-3	
NOVA CLAIMS	
SOIL GEOCHEMISTRY COPPER RESULTS IN P.P.M.	
BY: D.W.F./r.w.r.	MAP No. 5
DATE: NOV., 1984	



- LEGEND**
- LOWER JURASSIC ROSSLAND FORMATION
- AUGITE PORPHYRY, AUGITE-FELDSPAR PORPHYRY FLOWS
PYROCLASTICS AGGLOMERATE
TUFF
- SINEMURIAN BEDS
- ARGILLITE (SLATY, MINOR GRAPHITIC) MINOR
SILTSTONE/TUFF HORIZONS FEW BASIC SILLS AND
DYKES
- TRENCH
 - ROCK SAMPLE
 - GEOLOGICAL CONTACT
 - STRIKE AND DIP
 - SYNCLINE (MAJOR REGIONAL)
 - ANTICLINE STRUCTURE
 - OUTCROP
- Py PYRITE

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

13,047



CONTOUR INTERVAL = 60m

BILLITON CANADA LTD.

KELLY CREEK PROPERTY
NELSON M.D. - B.C. NTS 82-F-3

NOVA CLAIMS

GEOLOGY MAP

0 100 200 300 400 500 METRES

BY: D.W.F./r.m.r.
DATE: NOV., 1984

MAP NO. 4