Wigwam 1 Mineral Claim

2000 Geological Assessment Report

Wigwam 1 Mineral Claim
Fort Steele Mining Division
NTS: 82G/3E and 6E
Lat.: 115° 06'
Long: 49° 15'
Owner/Operator: Morris Geological Co. Ltd.
Author: R.J. Morris
January 10, 2001

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Introduction

This report presents the findings of geological and geochemical sampling work done on the Wigwam 1 claim during the period Oct. 22, 1999 to Sept. 16, 2000. The author carried out all of the work, including, mapping, photo interpretation, sampling, and report preparation.

Property Description

The Wigwam 1 claim was staked between the 18th and 21st of Oct. 1999 by the author. The claim represents a twenty-unit block immediately to the northwest of the mouth of the Wigwam River, south of the town of Elko, B.C.

Table 1: Wigwam 1
Claim Status

Claim Name	Tenure Number	Number of Units	Expiry Date*
Wigwam 1	372755	20	21 October 2002

**Note: Statement of Work, filed 20 October 2000, Event No. 3155994*

Location

The claim is four kilometres south of the town of Elko, or one kilometre south of the CFI mill, along the west bank of the Elk River, Figure 1. The claim overlaps portions of the Elko Group, which is held by the author.

Access

The claims can be accessed from Highway 93 by driving south 3.7km from the turnoff near Elko, and turning east onto the "Backroad" to the CFI mill. One-half of a kilometre along the "Backroad" is the turnoff to a regional transfer station (disposal site). Approximately 100m east of this road, and 30m south of "Backroad" will take you close to the legal corner post of Wigwam 1, Figure 2.

History

There are several Minfile occurrences noted in the immediate area, although there is no sign, in the field, of any recent work having been done.

Höy and Carter (1988; Figure 3) show five occurrences, numbers 129 to 133, to be within or very close to the claim.

1. **#129 Silver King**, which is #28 in Minfile.
2. **#130 Ramshorn**, which is #10 in Minfile.
3. **#131 Leah**, which is #29 in Minfile.
4. **#132 Jennie**, which is #11 in Minfile.
5. **#133 Sweet May**, which is #12 in Minfile.

The revised mineral inventory map, 82G/SW (MI) shows five mineral occurrences within or near the Elko Group, including:

1. **#10 Ramshorn**, is a copper occurrence. The location of this occurrence is know to be within 1,000 feet and 2 miles (BC 19?). Chalcopyrite, azurite, pyrite occur within a 0.5m quartz vein. Along one margin of the vein a talcose (chlorite?)

gouge seam about two centimeters thick contains copper oxide minerals. Sills of Purcell diorite are reported in the vicinity and may have some relationship to the mineralization (Minfile, 1988).

2. **#11 Jennie**, is a copper occurrence. The location of this occurrence is know to be within 1,000 feet and 2 miles (BC 19?). The Sweet May and Jennie occurrences are within a few hundred metres of each other on Sheep Mountain, six kilometres south of Elko. Development took place at the turn of the century, but was not long lived. The showings occur in shear zones adjacent to both contacts of a ten metre thick K-feldspar porphyry sill. Bedding in Purcell-age Gateway Formation carbonates is vertical and trends north-south. Both showings consist of scattered blebs of chalcopyrite in thin quartz veins. In general Sheep Mountain is host to many small quartz veins, some of which contain sulphide minerals (Grieve, 1979).
3. **#12 Sweet May**, is a copper occurrence. The location of this occurrence is know to be within 1,000 feet and 2 miles (BC 19?). The Sweet May and Jennie occurrences are within a few hundred metres of each other on Sheep Mountain, six kilometres south of Elko. Development took place at the turn of the century, but was not long lived. The showings occur in shear zones adjacent to both contacts of a ten metre thick K-feldspar porphyry sill. Bedding in Purcell-age Gateway Formation carbonates is vertical and trends north-south. Both showings consist of scattered blebs of chalcopyrite in thin quartz veins. In general Sheep Mountain is host to many small quartz veins, some of which contain sulphide minerals (Grieve, 1979).
4. **#28 Silver King**, is a copper occurrence. The location of this occurrence is know to be within a radius of 1,000 feet (BC 19?). This property comprises two claims on the east bank of the Elk River, three miles south of Elko. The mineral occurrence consists of a few narrow scattered quartz stringers containing minor amounts of pyrrhotite and chalcopyrite in quartzite bands exposed below high-water level. The quartzite bands, which in places are well mineralized with fine disseminated pyrite, alternate with bands of highly sheared argillite (Merrett, 1957).
5. **#29 Leah**, is a lead, silver occurrence. The location of this occurrence is know to be within a radius of 1,000 feet (BC 19?). Six mineral claims on the summit and south slope of Sheep Mountain on the west side of the Elk River, approximately three miles south of Elko. Surface stripping over a wide area has revealed the presence of a number of parallel quartz veins and has disclosed one narrow vein, up to 7cm wide, reportedly carrying good silver-lead values over an exposed length of 30m (Merrett, 1954). Several widely scattered open-cuts have disclosed narrow vertical quartz veins of east-west strike and undetermined length in quartzite, closely paralleling Purcell diorite sills. Rare patches of galena occur within the quartz veins (Merrett, 1957).

Scope of Work in 1999 and 2000

Fieldwork on the claims during this period included four and a half days of mapping, prospecting and sampling. In total, ten rock samples and ten soil samples were collected, eight of the rocks, and all ten of the soils were tested using ICP geochemistry.

As well as the fieldwork, five and a half days were spent reviewing and interpreting the landsat image and the air photographs and writing the report.

Geology

Regional Geology

Many authors have summarized the geology of the area but it appears that very little actual field study has taken place. The first geological maps of the area are by Leech (1958) and (1960).

The stratigraphic section of the Proterozoic, for the east side of the Rocky Mountain Trench, as proposed by Höy and Carter (1988) is as follows:

Roosville Formation, green siltstone and argillite, black laminate argillite; stromatolitic dolomite and dark brown oolitic dolomite, quartz arenite toward the top ($\mathcal{P}_r$ on Figure 3).

Phillips Formation, maroon micaceous siltstone, quartz wacke and argillite ($\mathcal{P}_p$ on Figure 3).

Gateway Formation, dolomite, quartz wacke, siltstone, argillite ($\mathcal{P}_g$ on Figure 3).

- **Upper Gateway** is green siltstone, argillite, dolomite.
- **Lower Gateway** is quartz wacke, dolomitic sandstone, stromatolitic dolomite, oolitic dolomite, green siltstone.

Sheppard Formation, sandstone and conglomerate locally at base; dolomitic quartzite, sandstone, oolitic dolomite, stromatolitic dolomite at top ($\mathcal{P}_s$ on Figure 3).

Nicol Creek Formation, massive to amygdaloidal basalt to andesitic lava flows, volcanic and feldspathic sandstone, siltite ($\mathcal{P}_{nc}$ on Figure 3).

Van Creek Formation, green, mauve laminated siltstone and quartz wacke; minor tuffaceous siltstone at top ($\mathcal{P}_{vc}$ on Figure 3).

Kitchener Formation, grey, black dolomite, limestone; green argillite, dolomitic siltstone ($\mathcal{P}_k$ on Figure 3).

- **Upper Kitchener**, grey, black dolomite, limestone, molar tooth texture; siltstone, thin quartz.
- **Lower Kitchener**, green, beige siltstone, argillite; dolomitic siltstone.

Creston Formation, green, grey and mauve siltstone, argillite; white, green quartz arenite (not shown on Figure 3).

- **Upper Creston**, siltstone, quartz arenite, argillite (not shown on Figure 3).
- **Middle Creston**, white, green and mauve quartz arenite and siltstone (not shown on Figure 3).

Lower Creston, grey, black argillite-siltstone couplets, siltstone and siliceous argillite, green siltstone (not shown on Figure 3).

Aldridge Formation, quartzite, quartz wacke, siltstone, argillite, silty dolomite (not shown on Figure 3).

Upper Aldridge, rusty weathering argillite and siltstone, thinly laminated (not shown on Figure 3).

Middle Aldridge, grey quartzite, quartz wacke, siltstone; argillite, rusty weathering (not shown on Figure 3).

Lower Aldridge, rusty weathering siltstone and quartzite with interbeds of silty argillite; quartz wacke (not shown on Figure 3).

Fort Steele Formation, white quartzite, grey argillaceous quartzite, argillite, grey, black dolomitic and calcareous argillite (not shown on Figure 3).

Note: Within the map area, strata below the Kitchener Formation are not exposed.

The following discussion applies to the regional maps produced by Leech.

- The north end of the Galton Range, south of the mouth of the Wigwam River, appears to be a normal succession of formations, from the Siyeh Formation (equivalent to the Kitchener/Van Creek/Nicol Creek Formations of Höy and Carter?) near the bottom of the mountains to the Rooseville Formation at the top. The formations are shown to be folded into a major north trending syncline that is truncated by the Wigwam River.
- North of the Wigwam River, onto the Wigwam flats east of the claim, the syncline is continued with the east side of the Elk River underlain by strata of the Rooseville Formation dipping gently to the east.
- Strata of the Gateway Formation underlie the west side of the Elk River. The beds are steeply dipping to vertical along the canyon area.
- There are no major faults mapped in the area to explain the changes in attitudes and general structure.

Work by Höy and Carter (1988) is more detailed in that they mapped the maroon colored Phillips Formation trending north/south through the canyon area, Figure 3. They also show a normal fault across the north face of the Galton Range, just to the south of the Wigwam River. This fault is shown to be a splay off of the "Rocky Mountain Trench Fault" and is shown to dip to the southwest. It is my opinion that, considering the changes in elevation across the Wigwam, the fault should have a northeast dip.

Neither of the authors discuss the intense white "clay"(?) alteration along the Elk River canyon nor the changes in attitudes, from east to west, across the Elk River. As well, neither of the authors address the intrusive rocks on Sheep Mountain.

Mapping Results

Mapping was conducted with the aid of an enlarged air photo, Figure 6E and 6W, which covered the claim area. Because of the steep banks within the canyon area of the Elk River only two locations along the river were examined, at the crossing of the ANG pipe line on the east and west sides of the river. At the south end of the claim block the riverbanks are again accessible.

No attempt has been made to place the strata within the various formations, although several mapable "units" have been observed. Maroon strata, probably belonging to the Phillips Formation(?), have been observed in several locations and shown on Figure 6E as "purple". The "purple" locations include corner A (on both sides), between corners C and D (on the east side), between corners D and E (on the west side), and below corner E (on the west side). If these locations represent the Phillips Formation there must be some faulting and offset between the southern two locations. The four northern locations could form a single continuous horizon that is not displaced. The strata on the west bank between corners D and E indicate a fold as the beds near the river level flatten out.

On the southern portion of Sheep Mountain a variety of dykes and sills were located. The intrusive varieties ranged from fine, dark, mafic to light colored feldspar porphyries. In all intrusive types, quartz veins are common. No attempt has been made to prepare a geological map of the area at this time.

Rock specimens

In total eighteen rock specimens were collected and identified in the field. The location of the rock specimens are shown on Figures 6E and 6W.

99-19; dyke or sill, dark grey, pink feldspar crystals to 2mm, quartz veins up to 15cm, high mafic content (see geochem sample).

99-20; quartz vein material (see geochem sample).

99-21; dyke or sill, dark grey, rusty, quartz vein with chlorite.

99-26; dyke or sill, light colored, 25% feldspar crystals to 1cm, very low quartz content.

00-1; rusty, dark grey, up to 1% pyrite (stained to black), rare quartz eye (3mm), some chlorite (light green), abundant feldspar, altered to white.

00-2; similar rock to 00-1, 1% pyrite (as blebs), very low quartz, white altered feldspar.

00-3; quartz vein material, up to 6cm wide, vuggy texture (from pyrite?).

00-4; grey siltstone, non calcareous,

00-5; massive quartzite, light grey, high quartz content, grains <1mm, well rounded, high pyrite content, minor quartz veins.

00-6; green to yellow colored claystone(?), layered white to clear quartz as streaks and blebs.

00-7; granodiorite(?), fine crystalline (~1mm), rusty, red and yellowish.

00-8; coarse, pink feldspar porphyry.

00-9; quartz vein.

00-10; feldspar porphyry.

00-11; fine, dark grey, dyke material (very similar to 99-19), quartz content to 10%(?), fine quartz veins.

00-13; similar to 00-11, coarser quartz veins, at least two stages.

00-16; quartzite, fine grained, white colored, very pure, quartz veins with chalcopyrite(?).

00-20; light grey to grey, fine sandstone to siltstone, with 1mm porphyoblasts (iron carbonate?).

Samples and Results

In total, eight rock and ten soil samples were collected and tested by multi element ICP geochemistry. The rocks represent a range of material from unaltered argillite to highly altered, to white clay(?), and mineralized material. Secondary mineralization includes clay alteration (argillic/sericitic), silica and pyrite. Appendix 1 is the geochemical analysis certificates for the work completed by Acme Analytical Laboratories. The sample locations are shown on Figures 6E and 6W.

A description of the rock samples includes the following:

99-19; The sample was collected from near the top of Sheep Mountain, at the south end, in an old trench. Sill or dyke material. The sample is slightly anomalous in iron (8.37%).

99-20; The sample was collected from near the top of Sheep Mountain, at the south end, in an old trench. Quartz vein material from within a sill or dyke. The sample represents grabs over some 15m of trench. The sample is relatively high in Zn (2258ppm), Mn (1667ppm), Cd (12ppm) and Hg (3398ppb).

99-27; The sample was collected from the west side of the Elk River, at the top of the road down to the gas pipeline crossing, rusty knob above river. Argillite; rusty, silicified, as well as quartz veinlets. The sample is relatively high in Ba (905ppm).

99-28; The sample was collected slightly up (?) section from sample 99-28. Argillite; highly altered, soft. The sample is anomalous in B (8ppm).

99-29; The sample was collected from the east side of the knob over the river, just east of samples 99-27 and 99-28. Quartz veins up to 3mm, over an area 1m long and 10cm across, some pyrite(?). The sample is not high in any element tested.

99-30; The sample was collected along the road down to the gas pipeline crossing on the west side of the Elk River. White rock, highly altered argillite(?), pyrite up to 0.5cm in a horizon 0.5m wide. The sample is relatively high in S (0.43%).

99-31; The sample was collected from the east side of the Elk River, about one third of the way down the bank, on corner A. Argillite; rusty horizon up to 0.3m thick, highly silicified material. The sample is relatively high in Mn (4871ppm), V (16ppm), Te (0.5ppm), and S (0.23%).

99-32; The sample was collected about 10m west of sample 99-31, on the east side of the Elk River, corner A. Argillite; rusty horizon up to 0.3m wide, in green argillite. The sample is relatively high in Mn (6032ppm), and S (0.4%).

A description of the soil samples includes the following:
00-12; The sample was collected from the northwest side of Sheep Mountain, along an old road cut. Poor soil development on bedrock, brown, high organic. The sample is not anomalous in any of the elements tested.

00-14; The sample was collected from the northwest side of Sheep Mountain, along an old road cut. More alluvial material in the sample. The sample is not anomalous in any of the elements tested.

00-15; The sample was collected from the northeast side of Sheep Mountain, beside an old pit in bedrock. The pit measures 2m x 3m and is 2m deep, in solid bedrock. The sample is from above bedrock, no till material. The sample is anomalous in Cu (145ppm), Pb (199ppm), Zn (101ppm), Ag (817ppb), As (7ppm), Sb (15ppm), Ba (308ppm), and Hg (151ppb)

00-17; The sample was collected from the northeast side of Sheep Mountain, beside an old trench. The sample is from the east side of the trench, near the south end, and includes soil and bedrock fragments. The sample is high in Cu (66ppm), Ag (785ppb), As (7ppm), Au (19ppb), Sr (155ppm), Ca (6.6%), Mg (2.5%), and Hg (288ppb).

00-18; The sample was collected from the northeast side of Sheep Mountain, beside an old trench. The sample is from the east side of the trench, at the north end, and includes material that was pushed from the trench. The sample is high in Cu (92ppm), Pb (314ppb), Zn (195ppm), Ag (856ppb), As (7ppm), Sb (19ppm)), Ba (402ppm), and Hg (115ppb).

00-19; The sample was collected from the northeast side of Sheep Mountain, beside an old trench. The sample is from the north end of the trench, and includes abundant feldspar porphyry material. The sample may be high in Ba (417ppm).

00-21; The sample was collected from the northeast side of Sheep Mountain, on a small knoll that had been cleared off by a dozer. The sample includes soil and some bedrock. The sample is anomalous in Zn (162ppm), Mn (2548ppm), and Ba (329ppm).

00-22; The sample was collected from just north of the old lookout tower on Sheep Mountain, along the floor of an old trench. The sample is not anomalous in any of the elements tested.

00-23; The sample was collected from just east of the old lookout tower on Sheep Mountain, along the floor of an old trench. The sample is possibly weakly anomalous in As (6ppm).

00-24; The sample was collected from just south of the old lookout tower on Sheep Mountain, along the floor of an old trench. The sample material is rusty, with a white stain. The sample is weakly anomalous in Mo (2ppm), Mn (2371ppm), Ca (11.4%), and Hg (179ppb).

Conclusions

To date no potentially economic mineralization has been located, but the project area is of interest because of the intersection of numerous major structural breaks, the major alteration zone along the Elk River, and the number and types of intrusives on Sheep Mountain. The limited fieldwork to date has shown:

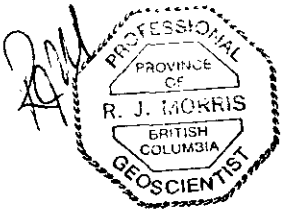
- That the strata changes attitude across the Elk River from gentle east dips on the east side to near vertical dips along the west side, indicating a major fault system.
- That there is a major alteration zone, white clay(argillic/sericitic alteration), along some of the structural breaks. The altered zone is at least one kilometer long and 500m wide, following a portion of the Elk River canyon. This may indicate a hydrothermal source at depth.
- The outcrop is limited to the riverbanks along the Elk River.
- There are at least three varieties of intrusives on Sheep Mountain.

Follow-up work will include more rock and soil sampling on Sheep Mountain and re-examining the old showings. Special attention will be given to the area around rock sample 99-20, and soil samples 00-15, 00-17, and 00-18 on the northeast side of the mountain.

Statement of Costs

	Total
Fieldwork	
R.J. Morris, 4.5 days @$400/day	$1,800.00
Geochemical testing	
8 rock samples, 30 element ICP test	$ 196.88
10 soil samples, 37 element ICP-MS test	$ 212.40
Shipping samples (and return of rejects, two sets)	$ 50.00
Office work	
R.J. Morris, 5.5 days @$400/day	$2,200.00
Supplies	
Report production	$ 100.00
Travel	
7 trips, 60km return, $0.40/km	$ 168.00
Truck rental, $50/day	$ 350.00
ATV rental, $50/day	$ 100.00

Total = $5,177.28



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Statement of Qualifications

I Robert J. Morris, President, Morris Geological Co. Ltd. do declare:

1. That I graduated as a geologist from the University of British Columbia, Vancouver, with a degree of Bachelor of Science in 1973.
2. That I graduated as a geologist from Queen's University, Kingston, Ontario, with a degree of Master of Science in 1978.
3. That I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
4. That I have been involved in the mining and mineral industry with work on grassroots exploration projects through to mining projects since my graduation in 1978.
5. That I am familiar with the subject area from fieldwork in 1998 and that I personally wrote and supervised the preparation of this report.

Dated this 10th day of January 2001, in Fernie, British Columbia.

R.J. Morris, M.Sc., P.Geo.

PROFESSIONAL ENGINEERS AND GEOSCIENTISTS PROVINCE OF BRITISH COLUMBIA R. J. MORRIS

Appendix 1

Time Sheet, R.J. Morris

Date	Time (days)	Job (Elko Project)
1999		
22 Oct.	0.5	Air photo interpretation
25 Oct.	0.5	Exploration proposal
27 Oct.	1.0	Review air photos, hill to south, ANG pipeline
28 Oct.	0.5	Proposal
29 Oct.	0.5	Ministry of Environment
2 Nov.	1.0	East side of river
3 Nov.	0.5	Photos, proposal
2000		
28 Jan.	0.25	Visit Pan American Silver
26 Feb.	0.5	Check roads in northeast corner
8 Mar.	0.25	Photos
16 Mar.	0.25	Review work by Sophie Lemieux
17 Mar.	0.25	Samples in
3 June	0.5	Sheep Mountain
28 July	0.5	Sheep Mountain
16 Sept.	1.0	Sheep Mountain
1 Jan.	1.0	Assessment report
2 Jan.	1.0	Assessment report
	10.0	**Total Days**

16 Jan '01

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
R. J. MORRIS
GEOSCIENTIST

Appendix 2

Geochemical Analysis Certificates

ACME ANALYTICAL LABORATORIES LTD. 8... H...NGS ... VI...JVE1. ... V... R6 PHC .504) ...31 AX(.253 L6
(ISO 9002 Accredited Co.)

GEOCHEMICAL ANALYSIS CERTIFICATE

Morris Geological Co. Ltd. PROJECT ELKO File # A003740

9053 Hwy #3 W., Fernie BC V0B 1M1 Submitted by: Robert J. Morris

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppb	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Sc ppm	Tl ppm	S %	Hg ppb	Se ppm	Te ppm	Ga ppm	Sample gm
00-12	89	18 53	11 67	45.4	62	11.3	5.6	452	2 51	3 3	6	7	4 1	13 0	.09	.59	.20	16	.28	.029	17.9	13.3	30	126 7	.051	3	1.79	006	19	<.2	3 4	.10	< 01	40	3	<.02	4 2	15
00-14	51	18.61	12 20	51.1	64	14 6	6 3	435	1.96	3 9	3	.4	4.9	8.5	13	.42	.21	17	.23	.034	18.5	13 0	.39	199 0	.027	2	1 40	.005	20	< 2	2 6	.08	.01	36	2	<.02	3.3	15
00-15	59	144.72	199 24	100 9	817	9 8	7.7	852	2.01	6.8	.4	9.4	4.1	39.3	53	14.62	.44	16	.68	.035	19.7	7.5	.32	308 3	.036	2	1.17	.007	15	< 2	2 8	06	.01	151	.2	.16	2.7	15
00-17	89	65.74	33 92	54.1	785	23 3	54.3	1440	2.83	6.7	8	19 0	3.6	154.7	.30	6 89	.85	15	6.60	.043	11 8	12.0	2 47	184 5	.013	3	.84	005	.11	< 2	3 6	.11	.03	288	.4	.05	1.9	15
00-18	82	92.44	314.26	194.9	856	18.2	15.5	1105	3 48	6 5	6	4.8	4 2	28 9	71	19.16	.54	21	.64	044	17.1	13.1	.45	401 7	060	2	2 27	.013	17	< 2	3.7	.08	.02	115	.1	17	5 2	15
00-19	46	16.57	31.23	80 3	25	10.9	6.1	700	2 46	2 2	6	< 2	4 4	22 3	.14	.40	.25	28	.33	061	26.0	10.9	.24	416.5	.029	1	1.30	.006	.15	< 2	3.0	08	01	17	.2	< 02	4.3	15
00-21	1 05	29 35	63.67	161 7	40	9.8	5 0	2548	3.24	3.0	4	<.2	3 1	22.6	.29	36	.21	19	.31	.089	24.0	9.6	.25	329.1	047	2	1 81	.006	.14	<.2	3.8	.10	03	59	.1	.02	5.0	15
00-22	1.68	10 43	10.19	45 7	58	9.1	4.5	329	2.54	3.6	.3	< 2	4.1	20 4	.07	.60	.18	12	.25	.046	36.9	7.7	.20	107.6	.022	2	.86	.003	.13	<.2	2.5	.05	<.01	25	.2	.02	2.4	15
00-23	.96	15.78	13 84	47.6	86	11.4	6 5	691	2 54	5 8	3	2 4	4.6	11 1	.23	1.23	.25	10	.36	.043	23.3	11.3	.39	125.4	.010	2	.99	.003	.12	< 2	3 0	.06	.03	42	.2	.03	2.3	15
00-24	2.17	6.21	8 88	75 2	73	2	2.5	2371	4.19	1.2	.3	1.3	.6	68.9	67	.49	04	<2	11.40	.088	8.9	1.0	.13	246.7	.001	1	.32	003	.07	<.2	2.9	.04	05	179	3	<.02	1.0	15
RE 00-24	2 09	5.96	8 37	74 9	75	.1	2 4	2316	4.11	1.2	3	1.2	.6	65.0	.63	.48	.03	<2	11.97	.084	8.5	.6	.13	237.2	001	1	.32	003	.06	<.2	2.8	.04	.05	168	.3	.02	1.0	15
STANDARD DS2	14.07	132.07	33.66	154 8	274	35.9	12.9	855	3.15	61 5	19.7	191.7	3 6	27.7	10.53	9.70	11.26	73	.53	.097	14.8	159.7	.61	162.7	.087	2	1.72	.032	.15	7.8	3.1	1.86	.03	236	2.3	1.96	5.9	15

GROUP 1F15 - 15.00 GM SAMPLE, 90 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 300 ML, ANALYSIS BY ICP/ES & MS.
UPPER LIMITS - AG, AU, HG, W, SE, TE, TL, GA, SN = 100 PPM; MO, CO, CD, SB, BI, TH, U, B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
- SAMPLE TYPE: SOIL SS80 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: SEP 25 2000 DATE REPORT MAILED: Oct 6/00 SIGNED BY ..... D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

Data ___ FA ___

ACME ANALYTICAL LABORATORIES LTD. (ISO 9002 Accredited Co.)
852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Morris Geological Co. Ltd. PROJECT ELKO File # A000875

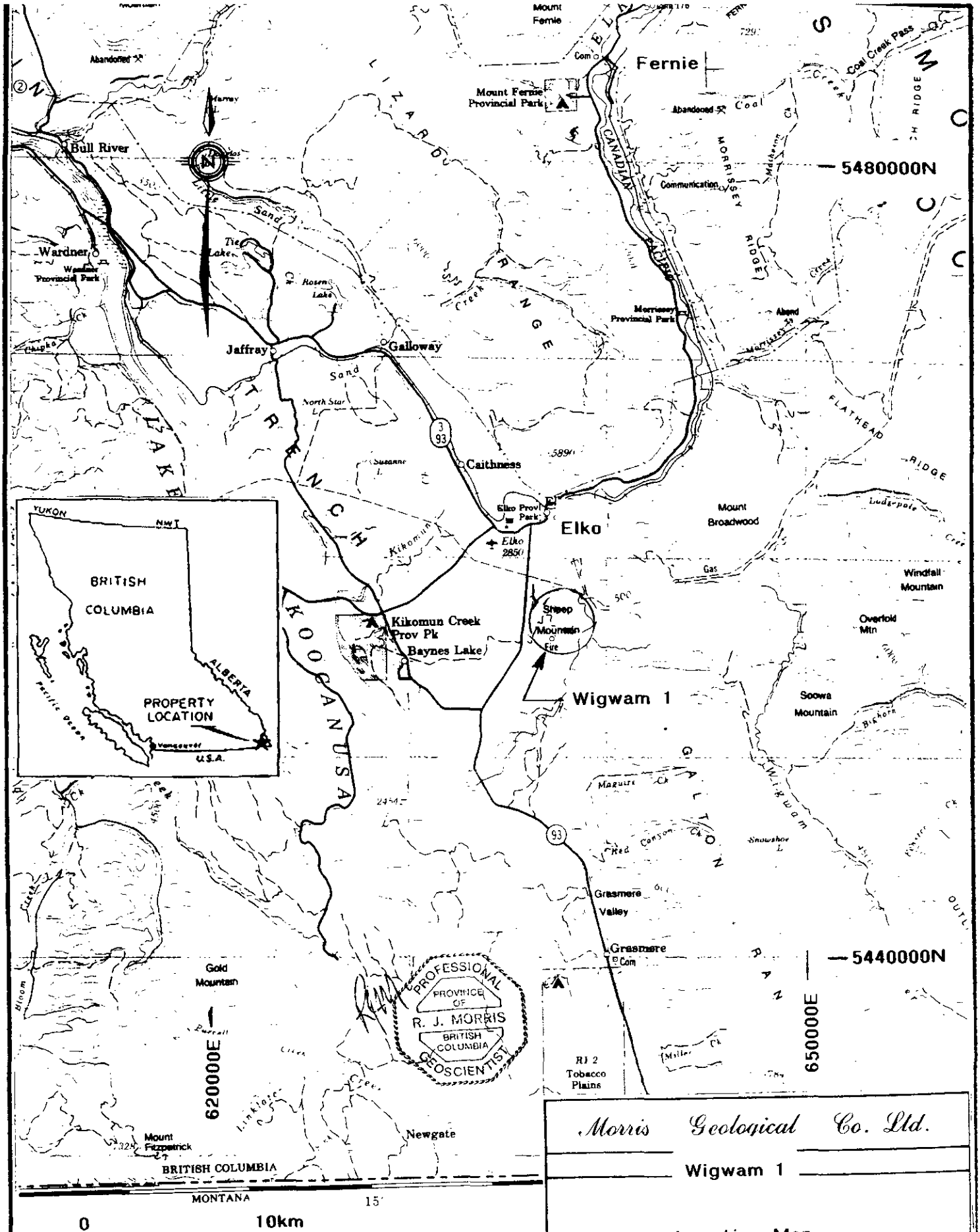
9053 Hwy #3 W., Fernie BC V0B 1M1 Submitted by: R. MORRIS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppb	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppb	Se ppm	Te ppm	Ga ppm	S %
99-19	3.66	3.49	10.95	332.6	55	.9	1.8	474	8.37	<.1	.1	1.0	4.3	17.6	.68	.22	<.02	<2	.41	.113	80.0	<.5	.49	98.0	.004	<1	.88	.008	.29	<.2	.04	269	.1	<.02	5.3	.01
99-20	5.35	21.50	49.29	2258.7	178	6.4	1.8	1667	4.57	2.3	.1	2.5	.5	37.7	11.99	1.65	<.02	<2	2.85	.019	9.3	10.0	.25	119.6	.001	<1	.10	.005	.07	1.6	.03	3398	<.1	.02	.6	.01
RE 99-20	4 95	20.80	45.28	2266.7	166	6.3	1.6	1711	4.72	2.5	.1	.4	.4	36.8	11.18	1.48	<.02	<2	2.90	.018	9.2	11.1	.26	128.9	.001	<1	.11	.005	.07	1.4	.03	3125	.1	<.02	.6	.01
99-27	1 95	3.55	2.02	67.8	21	9.5	2.4	149	.96	.9	.1	.7	3.3	27.5	.05	.24	.03	6	.69	.051	13.1	12.4	1.52	905.4	<.001	3	.34	.002	.01	.7	<.02	<5	<.1	<.02	1.2	.04
99-28	.78	9.59	11.34	16.2	270	3.6	6.0	163	.31	4.2	.2	.7	4.4	29.0	.03	2.09	.83	2	.65	.043	25.4	6.6	.32	361.9	.001	8	.41	.002	.23	.2	.15	64	.1	.06	1.5	.02
99-29	1.42	11.21	28.04	204.2	231	15.0	15.6	111	2.52	3.9	.4	1.5	5.8	37.9	.04	5.50	.95	5	.88	.045	24.0	12.8	3.56	53.4	.001	4	.51	.006	.24	.2	.22	35	.2	.04	1.9	.06
99-30	2.77	12.65	1.60	4.5	15	10.5	10.3	29	1.52	1.7	.2	<.2	2.8	4.7	<.01	.12	.16	2	.04	.014	10.2	12.8	.07	95.9	.001	1	.33	.002	.16	.9	.03	63	.1	.03	.8	.43
99-31	95	31.41	5.34	41.6	78	8.0	9.5	4871	3.32	4.8	.4	1.9	5.5	112.7	.02	2.71	.65	16	10.73	.034	18.7	14.8	4.91	37.2	.001	<1	.71	.006	.04	.2	.05	109	.3	.50	2.3	.23
99-32	.59	8.05	6.04	25.4	42	4.0	7.4	6032	2.92	2.8	.5	1.3	1.7	114.6	.05	1.98	.91	2	11.86	.029	10.1	7.6	4.57	125.9	.001	<1	.28	.009	.08	<.2	.08	32	.3	.23	.9	.40
STANDARD DS2	14.12	129.80	34.79	152.4	232	34.4	12.0	808	3.01	58.7	20.3	208.0	3.6	27.9	10.22	9.75	11.19	72	.53	.089	15.8	159.4	.57	152.2	.089	<1	1.63	.031	.15	7.0	1.88	253	2.2	1.81	6.0	.02

GROUP 1F15 - 15.00 GM SAMPLE, 90 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 300 ML, ANALYSIS BY ICP/ES & MS.
UPPER LIMITS - AG, AU, HG, W, SE, TE, TL, GA, SN = 100 PPM; MO, CO, CD, SB, BI, TH, U, B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.
- SAMPLE TYPE: ROCK Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: MAR 20 2000 DATE REPORT MAILED: March 30/2000 SIGNED BY ..... D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

Data f FA



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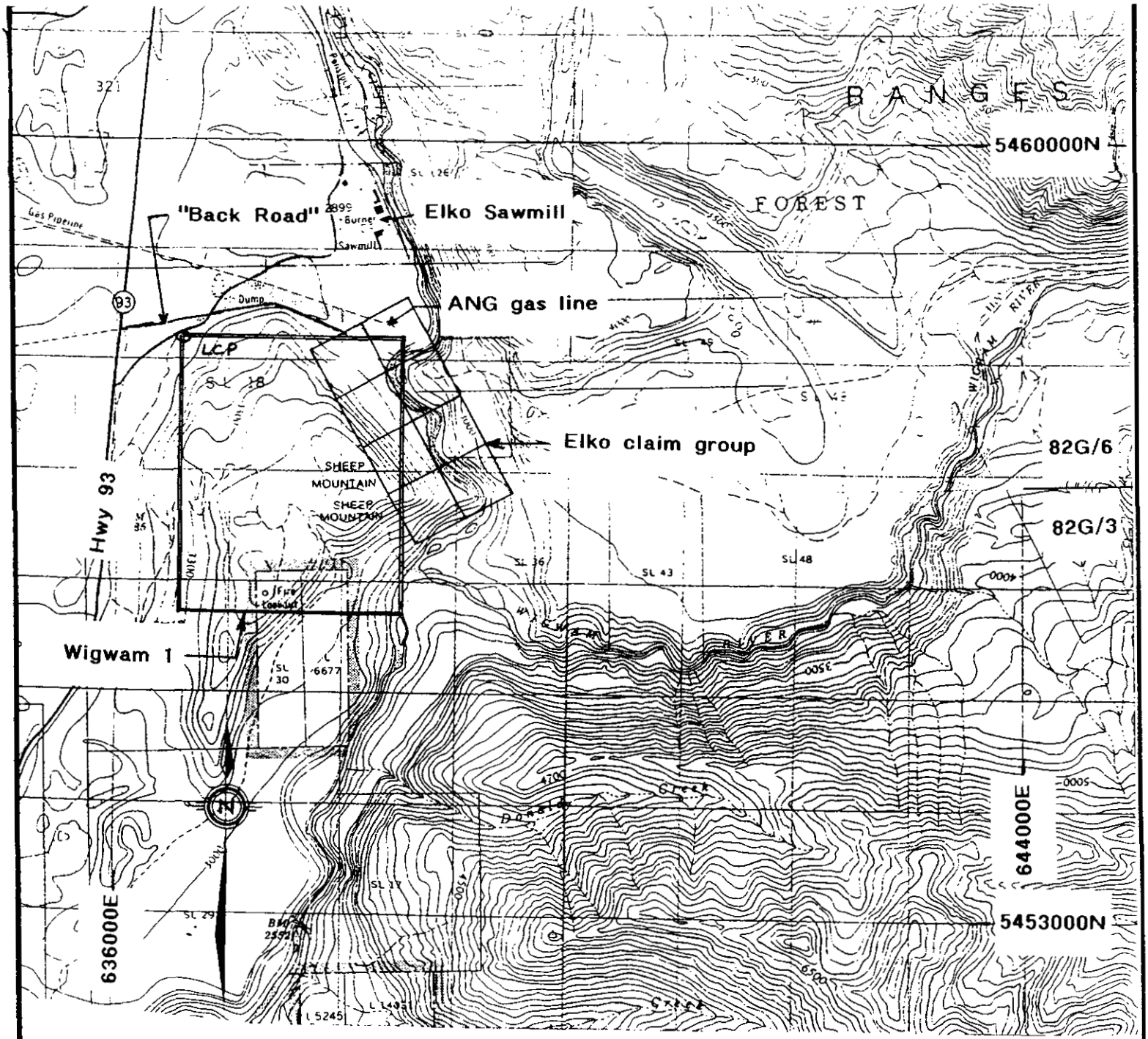
Wigwam 1

Location Map

DRAWN BY RJM	DATE 1 Jan. '01
AUTHOR R.J. MORRIS	SCALE 1:250 000

Fig. 1



Portions of maps 82G/3&6

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PROVINCE OF BRITISH COLUMBIA
R. J. MORRIS
GEOSCIENTIST

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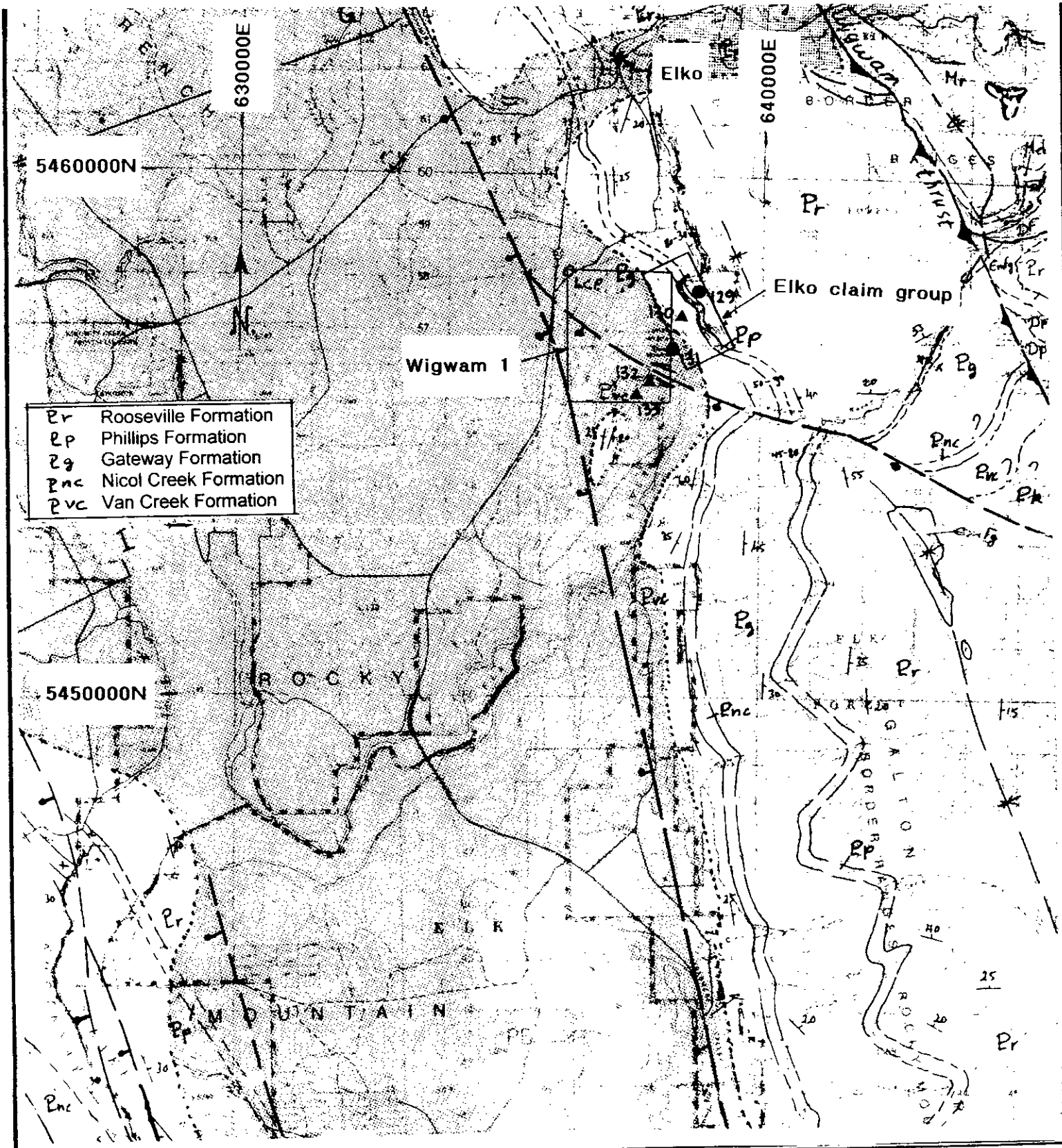
Wigwam 1		
Access Map		
DRAWN BY: RJM	DATE: 1 Jan. 01	Fig. 2
AUTHOR: R.J. MORRIS	SCALE: 1:50 000	

0 2km

Scale= 1:50 000



Scale= 1:100 000

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Wigwam 1

Regional Geology

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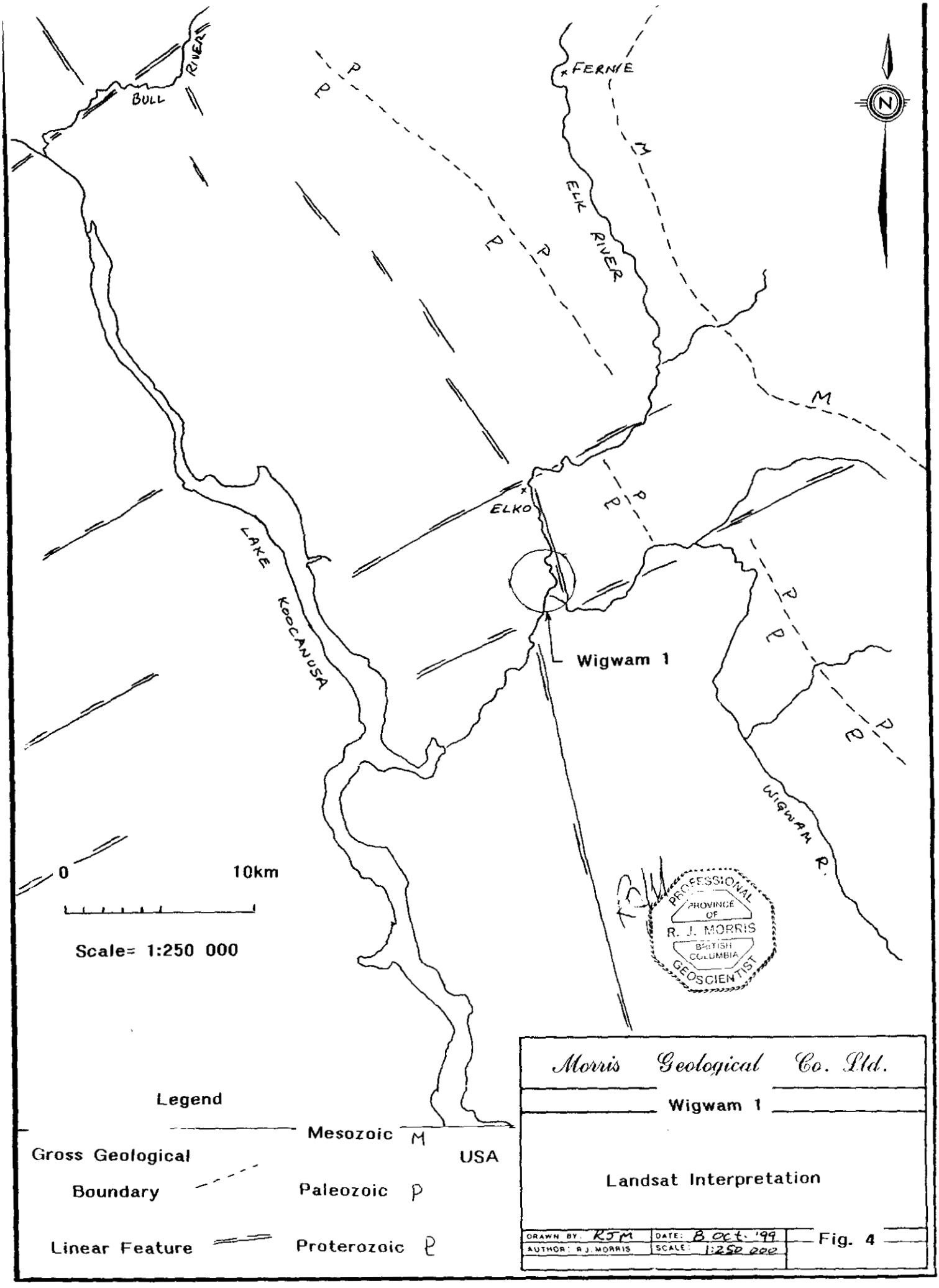
AUTHOR R.J. MORRIS	SCALE 1:100,000	

from : Hoy and Carter (1988)


BULL RIVER
FERNIE
ELK RIVER
ELKO
LAKE KOOCANUSA
Wigwam 1
WIGWAM R.
N
0
10km
Scale= 1:250 000
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Legend
Gross Geological Boundary
Linear Feature
Mesozoic M
Paleozoic P
Proterozoic P
USA
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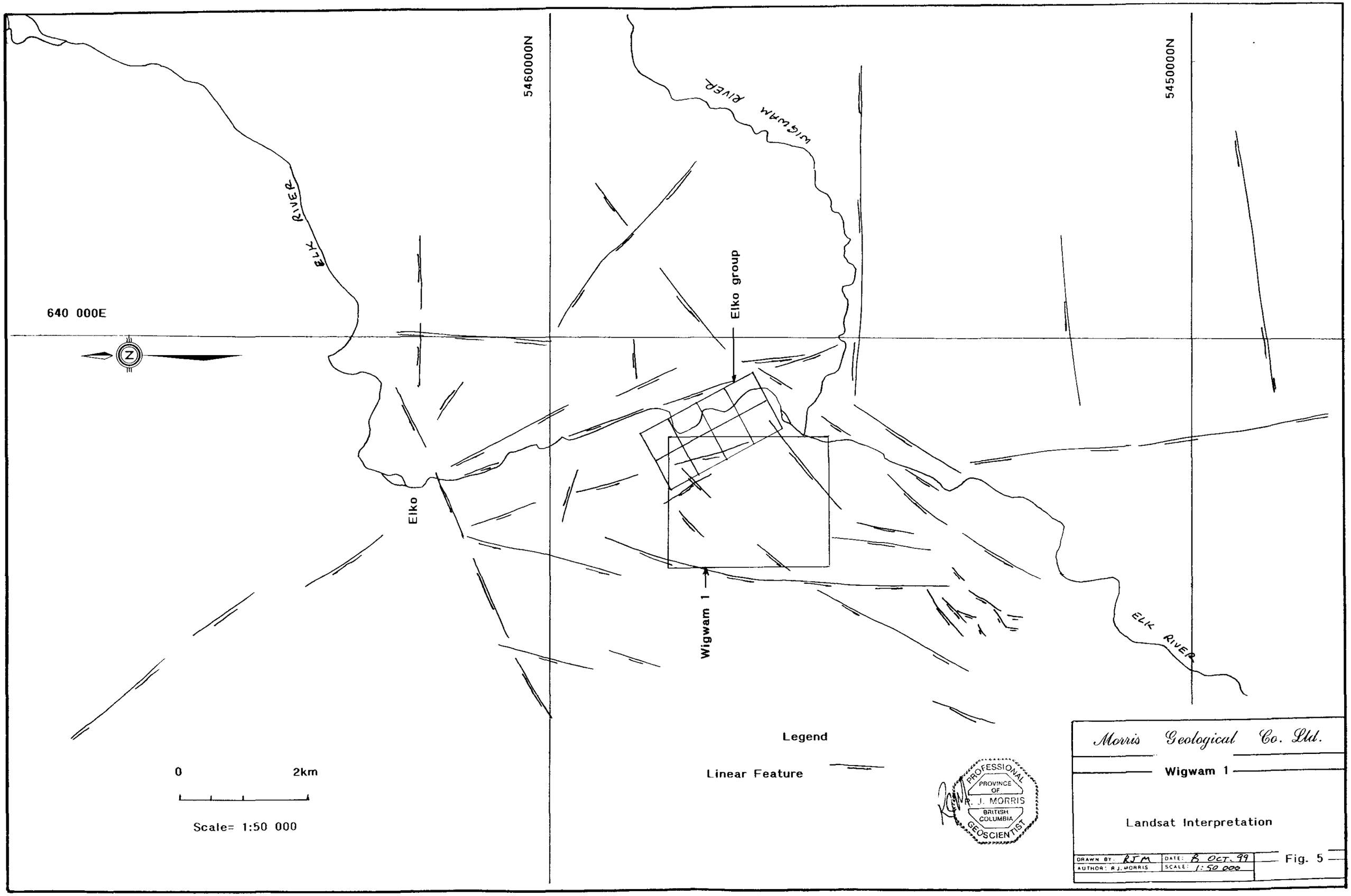
Wigwam 1
Landsat Interpretation
DRAWN BY: RJM
DATE: 8 Oct '99
AUTHOR: R.J. MORRIS
SCALE: 1:250 000
Fig. 4


5460000N
5450000N
640 000E
ELK RIVER
WIGWAM RIVER
Elko group
Elko
Wigwam 1
ELK RIVER
N
0
2km
Scale= 1:50 000
Legend
Linear Feature
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Landsat Interpretation
DRAWN BY: RJM
AUTHOR: R.J. MORRIS
DATE: 8 OCT. 99
SCALE: 1:50 000
Fig. 5

Elk River

unaltered, green argillite

Corner A

ANG

purple

Corner C

pass. purple

white

yellow

white alteration

rusty

white alteration

Corner E

Wigwam River

Yard

CFI

white alteration

purple

Corner B

Corner D

black

black

folds

purple

Elko claim group

ANG

Wigwam 1

Sand Pits

Elk River

0 0.5 1.0km

Scale= 1:11 100 (approx)

Airphoto Enlargement BC 81103 No.170

Legend

Bedding Attitude

Sample Site ×98-2

Riverbank

Roads

Pipeline

River

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Wigwam 1

Property Geology

DRAWN BY: RJM	DATE: 10 Jan 101	Fig. 6E
AUTHOR: R.J. MORRIS	SCALE: ~1:11,100	

Hwy 93

Elko claim group

Gas Pipeline

Sand Pits

LCP

Wigwam 1

N.

Scale= 1:11 100 (approx)

0 0.5 1.0km

Wigwam River

Elk River

Airphoto Enlargement BC 81103 No. 170

Legend

Bedding Attitude

Jointing

Sample Site

Rock ⊗ 99-20

Soil ⊙ 00-15

Rock Specimen x 00-1

Riverbank

Gas Pipeline

River

Roads

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Wigwam 1

Property Geology

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DATE 2 Jan. 01
SCALE ~1:11,100

Fig. 6W