Wigwam 1 Mineral Claim

2002 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, 2003

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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 Feb. 10, 2001 to June 16, 2002. 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 2003

**Note: Statement of Work, filed 21 October 2002, Event No. 3185739*

Location

The claim is four kilometres south of the town of Elko, or one kilometre south of the CFI saw 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. The formation is Precambrian in age. Insufficient ore mineralization is evident to warrant further work (Merrett, 1957).
5. **#29 Leah**, is a lead, silver occurrence. The location of this occurrence is known 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).

The most recent work is an assessment report by the author, dated 10 January, 2001.

Scope of Work in 1999 and 2000

Fieldwork on the claim 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 assessment report.

Scope of Work in 2001 and 2002

It was concluded, after the sampling work completed in 1999 and 2000 that follow-up work should include more rock and soil sampling and examination of the old showings. Special attention was to be given to the area around rock sample 99-20, and soil samples 00-15, 00-17, and 00-18.

Fieldwork on the claim during this period included seven days of mapping, prospecting and sampling. In total, nine rock samples and sixteen soil samples were collected and tested using ICP geochemistry.

As well as the fieldwork, two and three quarter days were spent reviewing and compiling data for the assessment 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 (ℓvc on Figure 3).
Kitchener Formation, grey, black dolomite, limestone; green argillite, dolomitic siltstone (ℓk 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 addresses the intrusive rocks on Sheep Mountain.

Mapping Results

Mapping was conducted with the aid of the following:

- An enlarged air photo, BC 81103 No. 170, with an approximate scale of 1:11 000.
- A 1952 air photo, BC 1479:7.
- A 1962 air photo, BC 4082:168.
- A 1969 air photo, BC5353-057.
- A hand held GPS.

Roads, trenches, and linear features were highlighted and digitized for the three older air photos, 1952, 1962, and 1969. The series of photos show the progress of the earlier exploration and have been used to locate old workings and roads. The photos were oriented and scaled by using at least three common points.

Rock Sample Correlation

An attempt has been made to correlate the rock samples collected during the past several field programs, including:

Table 2
Porphyry Suite

Sample No.	Sample Description
98-6	Pink feldspar porphyry, from the east side of the Elk River, directly above the dam. Float material, no outcrop.
99-26	Pink and white feldspar porphyry, from the south line of the Wigwam claim line, near post 5S2E. 25% feldspar crystals to 1cm, very low quartz content.
00-8	Coarse, pink feldspar porphyry
00-10	feldspar porphyry

Table 3
Intrusive Suite

Sample No.	Sample Description
98-19	From the south side of Sheep Mtn., from trench #2. Dyke or sill material, pinkish, crystals up to 2mm, abundant quartz veins (to 15cm) cutting trench.
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	From the south side of Sheep Mtn., from trench #2. 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	From the south side of Sheep Mtn., from trench #2. Similar rock to 00-1, but coarser, 1% pyrite (as blebs), very low quartz, white altered feldspar.
00-3	quartz vein material, up to 6cm wide, vuggy texture (from pyrite?).
00-7	granodiorite(?), fine crystalline (~1mm), rusty, red and yellowish.
00-9	quartz vein.
00-11	From the central west portion of the claim. Fine, dark grey, dyke material (very similar to 99-19), quartz content to 10%(?), fine quartz veins.
00-13	From the central west portion of the claim. Similar to 00-11, coarser quartz veins, at least two stages.
01-22	From the south central part of the claim. Mudstone, green, with quartz vein. Similar to 00-13 but finer.
01-26	From the central portion of the claim. Intrusive material with quartz veins.
01-28	From the central portion of the claim. Rusty, white feldspar, quartz. Possible sandstone?
01-30	From the central portion of the claim. Very similar to 01-28, quartz diorite, abundant pyrite.
01-35	From the central part of the claim. Siltstone/mudstone, intrusive, brown, quartz and white feldspar, minor copper stain, some pyrite.
01-37	From the central portion of the claim. Feldspar porphyry, very angular, low quartz, low colour index, very coarse crystals, minor mafic content.
01-39	From the central part of the claim. Dark green, biotite porphyroblasts, similar to 00-13.

Table 4
Sediment Suite

Sample No.	Sample Description
98-8	From the east side of the Elk River, float. Oolitic, non-calcareous, with pyrite, bedded at ~15cm.
98-17	From north of the claim, represents unaltered argillite. Clay rich, with green sheen, possibly hematite blebs.
98-21	From the south side of the mountain. Siltstone? with a chlorite vein.
99-30	From the west side of the Elk River, near the pipeline crossing. Siltstone, yellow-brown, high silica content, with pyrite up to 0.5cm.
00-4	From the south side of the mountain. Grey siltstone/mudstone, non-calcareous, massive. A silicified limestone?
00-5	Massive quartzite, light grey, high quartz content, grains <1mm, well rounded, high pyrite content, minor quartz veins. Possibly an intrusive?
00-6	green to yellow colored claystone(?), layered white to clear quartz as streaks and blebs.
00-16	From the central portion of the claim. Quartzite/quartz sandstone, fine grained, white colored, very pure, quartz veins with pyrite/chalcopyrite(?), weak green stain.
00-20	From near the top of the east peak. Light gray to gray, fine sandstone to siltstone/mudstone, with 1mm porphyroblasts, brown (iron carbonate?).
01-19	From the south central part of the claim. Quartzite, quartz vein, or quartz alteration, rusty, hematite? vein.
01-28	From the central part of the claim. Quartz vein, with sericite and calcite.
01-32	From the central part of the claim. Quartzite, silicified siltstone (limestone?), white to gray.

Samples and Results

In total, nine rock and sixteen 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:

01-13; The sample was collected along the road to the east portion of the claim (Fig. 12); very close to outcrop as there is abundant debris in the area. Rusty, mafic, sericite, quartz chards, quartz crystals approximately 1mm. The sample is anomalous in Th (5.8ppm), Ba (150ppm) and K (0.32%).

01-19; The sample was collected from near the top of Sheep Mountain, at the south end of the claim, just above sample 01-17 (Fig. 13). Quartz vein material, rusty, vuggy, with abundant secondary iron veins. Possibly a quartzite with quartz grains approximately 1mm. The sample represents a piece of float material. The sample is slightly high in Ni (7.4ppm), V (7ppm) and W (3.1ppm).

01-22; The sample was collected from near the top of Sheep Mountain (Fig. 13), at the end of an old trench. Possible siltstone, very rusty, massive, green tint, clay rich, white porphyroblasts, abundant pyrite, quartz veins in at least two directions. The sample is anomalous in Mo (4ppm), Pb (119ppm), Zn (280ppm), Ag (273ppb), Co (10ppm), As (15ppm), Cd (0.8ppm), Bi (0.2ppm), Al (2.3%), S (0.22%), Hg (145ppb), and Ga (9ppm).

01-26; The sample was collected near the central portion of the claim, along the north access road (Fig. 10). Quartz debris, white (almost total kaolinite?), altered quartz diorite, 1cm iron blebs (siderite?). The sample is slightly high in Au (2ppb) and Sc (8ppm).

01-28; The sample was collected near the central portion of the claim, south of the north access road (Fig. 10). Altered diorite, some quartz veins with siderite and sericite (massive). The sample is slightly high in Ca (2.4%) and Sc (5ppm).

01-30; The sample was collected near the central portion of the claim, south of the north access road (Fig. 10). The sample represents debris from an old road cut. Quartz diorite, abundant pyrite. The sample is slightly high in P (0.1%) and Sc (5ppm).

01-35; The sample was collected near the central portion of the claim, south of the north access road, approximately 15m east of waypoint 51 (Fig. 11). Dominant host material, minor copper stain, brown/pink fine crystals, with quartz and pyrite. The sample is high in Cu (839ppm), Ba (147ppm), B (5ppm), and Sc (5ppm).

01-37; The sample was collected near the central portion of the claim, south of the north access road (Fig. 11). Feldspar porphyry, very angular, low quartz content, light in colour. The sample is slightly high in Bi (0.2ppm) and Ba (247ppm).

01-39; The sample was collected near the central portion of the claim, south of the north access road, in an old trench (Fig. 11). Altered intrusive, dark green with green porphyroblasts to 0.5cm (radiating, high Fe, chlorite/biotite). The sample is relatively high in Ni (11ppm), Co (6ppm), Al (2.8%) and Ga (16ppm).

A description of the soil samples includes the following:
01-16; The sample was collected from the southeast side of Sheep Mountain, along an old road cut (Fig. 12). Near brown siltstone outcrop, minor copper stain, 10m up hill is abundant feldspar porphyry debris. The sample is anomalous in Cu (355ppm), Pb (302ppm), Ag (1604ppb), Au (5.9ppb), Sb (45ppm), Ba (702ppm) and Hg (465ppb).

01-17; The sample was collected from the south side of Sheep Mountain, along an old trench (Fig. 13). Rusty material, no alluvium, sample taken across +1m. The sample is slightly high in B (5ppm) and Sc (4ppm).

01-18; The sample was collected from the south side of Sheep Mountain, at the north end of an old trench (Fig. 13). The sample is not anomalous in any element tested.

01-20; The sample was collected from the south side of Sheep Mountain, at the east end of an old trench (Fig. 13). The sample is of debris at the end of the "push". The sample is anomalous in Mo (4ppm), Pb (744ppm), Zn (659ppm), Ag (607ppb), Mn (2420ppm), Fe (5.1%), Cd (4ppm), Ca (4.2%) and Hg (1517ppb).

01-21; The sample was collected from the south side of Sheep Mountain, at the east end of an old trench (Fig. 13). The sample is of pushed material at the end of the trench. The sample is anomalous in Mo (4.5ppm), Cu (141ppm), Pb (477ppb), Zn (411ppm), Ag (1327ppb), Co (11ppm), Fe (6%), As (22ppm), Au (5.9ppb)), Cd (2ppm), Sc (5ppm) and Hg (268ppb).

01-23; The sample was collected from the south side of Sheep Mountain, at the west end of an old trench (Fig. 13). The sample is soil with abundant mafic sill material and some quartz debris. The sample may be high in Sc (5ppm).

01-24; The sample was collected from the south side of Sheep Mountain, at the north end of an old trench, below the old lookout (Fig. 13. The sample may be high in Sc (5ppm).

01-25; The sample was collected from the central portion of the claim, south of the north access road (Fig. 10). Along the floor of an old trench. The sample is slightly high in Pb (137ppm) and Sc (5ppm).

01-27; The sample was collected from the central portion of the claim (Fig. 10), from the floor of an old pit, 3mx3mx2m deep. The sample is not anomalous in any of the elements tested.

01-29; The sample was collected from the central portion of the claim (Fig. 10), along the floor of an old cut, some 5m deep. The trench shows some quartz veining. The sample is weakly anomalous in Zn (179ppm) and Sc (6ppm).

01-31; The sample was collected from the central portion of the claim (Fig. 10), along the bed of an old road. The sample is not anomalous in any of the elements tested.

01-32; The sample was collected from the central portion of the claim, from the middle of an old trench (Fig. 11). There is abundant alluvial material, some quartz float, and old hole up to 2m deep. The sample may be high in Ca (3.6%).

01-33; The sample was collected from the central portion of the claim, from the deepest part of an old trench, about 1.5m deep (Fig. 11). The sample is not anomalous in any of the elements tested.

01-34; The sample was collected from the central portion of the claim, on the north side of an old trench (Fig. 11). The sample material has abundant quartz with some copper staining. The sample is slightly high in Mo (4ppm), Zn (106ppm), Ag (275ppb), As (6ppm), Sc (5ppm) and Hg (100ppb).

01-36; The sample was collected from the central portion of the claim, from the south cut bank of an old road (Fig. 11). There is no alluvial material in the area. The sample is possibly weakly anomalous in Ba (277ppm).

01-38; The sample was collected from the central portion of the claim on an old trench (Fig. 11). The sample material is dominantly feldspar porphyry. The sample is not anomalous in any of the elements tested.

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 and to scattered areas on Sheep Mountain.
- There are at least three varieties of intrusives on Sheep Mountain.

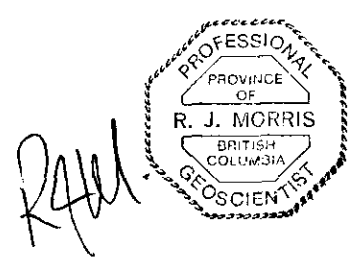
Follow-up work will include more rock and soil sampling on Sheep Mountain and examination of the old trenches. Special attention should be given to the area around samples:

Table 5
Follow-Up Samples

Rock Sample	Soil Sample
99-20	00-15
01-22	00-17
01-35	00-18
	01-16
	01-20
	01-21
	01-25

Statement of Costs

	Total
Fieldwork	
R.J. Morris, 7.5 days @$500/day	$3,750.00
Geochemical testing	
9 rock and 16 soil tests,	$ 681.00
Shipping samples	$ 50.00
Office work	
R.J. Morris, 2.75 days @$500/day	$1,375.00
Drafting, JRT services	$ 300.00
Supplies	
Report production	$ 100.00
Access permit	$ 40.00
Air photos	$ 24.19
Travel	
Truck rental, 6 days x $50/day	$ 300.00
ATV rental, 6 days x $50/day	$ 300.00
	Total = $6,920.19



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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 (registration #18,301).
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 since 1998 and that I personally wrote and supervised the preparation of this report.

Dated this 10th day of January 2003, in Fernie, British Columbia.

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

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

Appendix 1

Time Sheet, R.J. Morris

Date	Time (days)	Job (Elko Project)
2001		
10 Feb.	0.5	Check out new road, N. end Sheep Mountain
16 June	1.0	Clean roads, down to old homestead, S. end
2 July	1.0	Check out trenches SE side of mountain
5 July	0.25	New air photos and enlargements, access permit
8 July	0.5	Tour east roads, top of mountain
14 July	1.0	South trenches, soil samples
20 July	0.5	Trace linear features from air photos
21 July	1.0	North and west side old trenches
22 July	1.0	Northeast side trenches
31 July	0.5	Elko canyon dam area
5 Aug	0.5	Walk and prospect along Elk River
2002		
16 June	0.5	Old homestead area to Elk River
	8.25	**Total Days**

Appendix 2

Wigwam Waypoints and Sample Coordinates

Wigwam Waypoints				
Total Data Set to 27 Dec.'02				
Waypoint	Date	Easting	Northing	Description
t22	22-Jul-01	635860	5457244	
t26	22-Jul-01	635883	5457308	
t18	22-Jul-01	635903	5457390	
	landing	635911	5457399	
109	m1	635977	5456027	west end of road
1	16-Sep-00	635978	5456028	
2	16-Sep-00	636017	5455899	
t25	22-Jul-01	636029	5455901	
	landing	636064	5457911	
t23	22-Jul-01	636065	5455856	
t13	22-Jul-01	636442	5458365	
3	16-Sep-00	636450	5457003	
110	m2	636450	5457006	2nd switch back
25	10-Feb-01	636451	5458369	truck
24	10-Feb-01	636487	5458408	LCP
111	m4	636560	5456824	junction, road to N.
4	16-Sep-00	636563	5456826	
8	16-Sep-00	636612	5457410	
115	m8	636613	5457409	start of road
100	west claim li	636616	5456705	
23	10-Feb-01	636619	5458010	end of road
116	m9	636661	5457332	old cut, W. end
9	16-Sep-00	636664	5457332	
112	m5	636687	5457214	Ram 2 LCP
5	16-Sep-00	636688	5457215	
10	16-Sep-00	636734	5457284	
117	m10	636736	5457277	on old trail
113	m6	636797	5457156	corner
6	16-Sep-00	636798	5457160	
	big turn	636860	5458369	
42	21-Jul-01	636865	5457218	**soil sample 01-29**, old trench
114	m7	636870	5457292	sort of corner
7	16-Sep-00	636873	5457287	
38	21-Jul-01	636882	5457238	old pot hole
40	21-Jul-01	636884	5457129	old trench
41	21-Jul-01	636885	5457132	**soil sample 01-27, rock 01-28**
39	21-Jul-01	636885	5457209	**soil sample 01-25, rock sample 01-26**, old diggings
28	14-Jul-01	636902	5455942	
19	16-Sep-00	636907	5455861	
125	m19	636907	5455862	switch back SW of claim
45	21-Jul-01	636917	5457071	old road, S. end
44	21-Jul-01	636926	5457107	**soil sample 01-31, rock 01-30**, old road, N. end
29	14-Jul-01	636935	5456003	**soil sample 01-18**, trench 8 N. end
101	south claim	636948	5455874	
43	21-Jul-01	636950	5457180	old trench
35	14-Jul-01	636987	5455858	
27	14-Jul-01	636994	5455915	**soil sample 01-17**

Wigwam Waypoints				
Total Data Set to 27 Dec.'02				
Waypoint	Date	Easting	Northing	Description
121	m15	637020	5456915	corner on main road
15	16-Sep-00	637026	5456918	
102	post 5S1E	637028	5455876	
104	wp001	637044	5455924	sample 00-1
34	14-Jul-01	637050	5455826	**soil sample 01-23**, trench 1, W. end
30	14-Jul-01	637055	5455877	**rock sample 01-19**, float, old sample site 00-24
124	m18	637057	5455885	south claim line
18	16-Sep-00	637058	5455882	
103	wp002	637085	5455904	sample 00-2, old trench 3
32	14-Jul-01	637094	5455858	
31	14-Jul-01	637108	5455869	**soil sample 01-20**, trench 2, E. end
14	16-Sep-00	637108	5457155	
120	m14	637108	5457155	junction with main road
37	14-Jul-01	637113	5456145	S. end of trench
33	14-Jul-01	637117	5455866	**soil sample 01-21, rock sample 01-22**, trench 1, E. end
36	14-Jul-01	637119	5456187	**soil sample 01-24**, N. end of trench
16	16-Sep-00	637148	5456800	
122	m16	637148	5456800	station 3b, p. 5
105	wp005	637158	5456156	sample 00-5
46	22-Jul-01	637185	5457162	**soil sample 01-32**, old trench, W. end
106	wp006	637189	5456459	sample 00-6
t24	22-Jul-01	637257	5456750	
52	22-Jul-01	637272	5457001	**soil sample 01-36, rock sample 01-37**
123	m17	637279	5456208	station A, p.2
17	16-Sep-00	637280	5456208	
t27	22-Jul-01	637283	5456718	
47	22-Jul-01	637291	5457085	trenches
48	22-Jul-01	637307	5457047	trenches
49	22-Jul-01	637309	5457023	**soil sample 01-33**
51	22-Jul-01	637311	5456973	**soil sampe 01-34, rock sample 01-35**
50	22-Jul-01	637314	5457002	
54	22-Jul-01	637345	5456692	**rock sample 01-39**, old trench
53	22-Jul-01	637403	5456886	**soil sample 01-38**, old trench
01-13	rock	637580	5457284	**rock sample 01-13**
t1	22-Jul-01	637619	5457232	
01-15		637709	5456103	old claim, Kim #5 & #6
t19	22-Jul-01	637727	5457437	
01-14		637732	5457433	all feld. Porph.
t20	22-Jul-01	637768	5456172	
12	16-Sep-00	637787	5457284	
	trench	637796	5456957	
107	wp008	637800	5457236	sample 00-8?
01-16	soil	637811	5456550	**soil sample 01-16**
118	m11	637819	5457235	old road to E., trench 5
11	16-Sep-00	637820	5457234	
119	m13	637833	5456931	N. end old trench
13	16-Sep-00	637840	5456933	

Appendix 3

Geochemical Analysis Certificates

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 # A201113

6243 Kubinec Road, 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
SI	.23	.21	.21	1	6	.2	<.1	<1	.01	.2	<.1	.5	<.1	1.3	<.01	<.02	<.02	<2	.11	<.001	<.5	2.9	<.01	1.7	.005	<1	<.01	.287	<.01	.1	.1	<.02	<.01	<5	<.1	<.02	<.1
01-13	2.71	4.60	9.03	68.3	17	1.6	1.1	1251	5.51	2.3	.2	1.1	5.8	11.6	.17	.47	.02	<2	.35	.074	79.0	21.0	.03	149.7	.041	2	.77	.034	.32	1.0	2.4	.05	.01	18	.2	<.02	2.2
01-19	2.27	13.71	35.42	37.1	86	7.4	2.0	345	1.69	6.0	.3	.9	1.4	67.2	.06	.49	.09	7	1.85	.015	4.1	59.6	.80	48.0	.006	<1	.24	.003	.03	3.1	1.0	.17	.01	23	.1	.04	5
01-22	4.24	7.61	118.59	280.3	273	1.2	10.0	130	5.02	15.2	.1	.8	4.3	56.6	.81	.35	.23	<2	.95	.065	59.4	6.5	2.34	56.3	.019	1	2.27	.005	.23	.2	2.6	.13	.22	145	<.1	.07	9.3
01-26	3.58	29.12	9.09	137.8	35	2.1	1.5	1918	5.86	9	.1	1.9	1.8	34.7	.18	.29	.03	2	1.40	.045	26.4	34.0	.12	33.9	.014	<1	.61	.027	.07	1.4	7.6	.02	.01	44	.2	<.02	2.0
01-28	3.36	6.01	17.72	68.0	22	2.5	1.3	1849	5.36	.6	.1	1.1	2.1	45.8	.21	.17	.02	<2	2.39	.056	31.9	30.6	.23	81.6	.021	1	.56	.023	.20	1.2	5.0	.03	.01	25	.5	.02	1.5
01-30	3.03	9.49	4.90	113.6	21	.5	1.8	1591	6.91	1.3	.1	1.4	4.4	18.1	.13	.36	<.02	<2	1.40	.113	61.7	8.2	.15	114.1	.030	1	1.14	.011	.24	.3	5.2	.03	.01	8	.3	<.02	2.7
01-35	3.58	839.21	6.05	47.4	29	2.3	1.2	1866	4.96	1.1	.3	1.2	2.9	13.2	.13	.38	<.02	<2	1.45	.046	42.1	30.8	.08	146.8	.023	5	91	.005	29	1.4	4.5	.04	.01	15	.3	<.02	1.9
01-37	.51	7.78	40.58	19.5	52	2.5	1.8	641	1.06	.8	4	.9	1.7	22.4	.15	.60	.24	4	.09	.025	12.4	11.3	.02	247.4	.010	3	.79	.062	.28	.5	1.5	.09	<.01	13	.4	<.02	1.4
01-39	2.81	3.41	2.01	79.2	36	11.0	6.2	615	5.54	4.4	.2	.4	1.7	4.7	.05	.12	.06	<2	.05	.030	7.4	6.4	1.71	104.1	.026	<1	2.84	.003	.09	.3	2.5	.02	.01	9	.3	<.02	15.6
STANDARD DS3	9.39	120.19	33.30	156.7	294	35.8	12.4	794	3.04	29.8	5.8	19.8	4.2	25.7	5.47	5.23	5.36	73	.51	.084	16.5	175.6	.56	146.8	.087	2	1.67	.029	.14	4.1	2.7	1.03	.02	223	1.1	1.14	6.0

GROUP 1F15 - 15.00 GM SAMPLE LEACHED WITH 90 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 300 ML, ANALYSED 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 R150 60C

DATE RECEIVED: APR 29 2002 **DATE REPORT MAILED:** May 1/02 **SIGNED BY.** C. Leong 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 # A201114

6243 Kubinec Road, 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
G-1	1.30	2.40	2.26	35.7	11	3.9	3.5	498	1.68	4	1.6	.3	4.9	63.7	.01	.03	.11	37	.52	.084	6.1	18.5	.47	205.8	.107	1	1.08	.055	.41	1.3	1.5	.23<	.01	<5	<.1	<.02	4.0	15
01-16	.50	355.15	302.24	40.2	1604	9.4	7.1	503	1.12	7.9	.3	5.9	3.7	57.1	.45	45.11	.64	9	2.98	.063	11.7	6.7	.84	701.5	.006	3	.41	.003	.11	.3	1.7	.06	.04	465	<.1	.03	1.0	15
01-17	1.62	20.38	38.38	163.5	84	12.8	7.6	1506	4.11	7.4	.3	.7	3.8	26.0	45	.92	.26	18	.68	.084	20.0	11.9	.34	219.2	.022	5	1.19	.004	.28	.2	4.1	.11	.03	42	.1	.03	3.6	15
01-18	.82	23.93	13.96	50.1	117	14.5	7.3	588	2.13	8.1	.3	2.0	5.0	14.6	.16	1.24	.27	14	1.05	.047	20.0	10.8	.40	176.8	.023	2	1.24	.004	.16	.1	2.5	.09	.01	38	.2	.03	3.5	15
01-20	3.84	44.58	743.90	658.8	607	4.2	4.6	2420	5.05	6.4	.3	3.2	3.1	79.2	4.35	1.37	.14	5	4.18	.066	33.0	4.6	.25	173.6	.003	1	.72	.002	.13	<.1	7.0	.07	.03	1517	.5	.03	1.9	15
01-21	4.51	141.39	476.88	410.9	1327	5.0	11.4	1290	5.98	22.2	.3	5.9	4.0	48.2	2.16	1.32	.53	7	1.05	.071	52.4	4.0	.32	143.2	.015	2	1.08	.003	.19	<.1	5.5	.31	.02	268	.6	.04	3.8	15
01-23	1.48	30.28	36.56	131.1	85	10.2	6.6	1950	3.20	5.8	4	.8	3.8	21.1	58	.66	.22	13	40	.051	21.9	8.9	.27	231.8	.024	2	1.35	.004	.24	<.1	4.8	.11	.03	34	.2	.02	3.9	15
01-24	1.42	14.77	20.94	94.5	26	10.0	5.6	2201	3.03	4.6	.4	.7	4.0	28.5	.28	.55	.26	16	.46	.052	22.2	9.1	.25	257.2	.033	3	1.37	.004	.20	.1	4.7	.09	.02	39	<.1	.02	4.0	15
01-25	1.77	61.10	137.18	106.3	171	9.1	4.5	1304	3.54	4.5	.5	<.2	4.2	26.5	33	.47	.32	15	.42	.039	21.3	9.1	.26	186.7	.052	1	1.44	.006	.14	<.1	5.1	.08	.01	72	3	.03	4.5	15
01-27	97	13.89	43.41	66.9	27	9.3	4.1	397	1.96	2.9	4	<.2	4.4	14.8	12	40	.21	13	18	.029	20.7	9.4	.24	139.7	.035	<1	1.13	.005	.12	<.1	2.3	.07<	.01	24	3	.03	3.3	15
01-29	1.50	47.71	39.26	179.4	59	8.7	4.5	1049	3.91	3.1	5	.8	4.0	22.6	.26	.40	.24	14	.31	.043	21.6	8.4	.24	129.8	.048	1	1.70	.006	.17	<.1	5.7	.08	.01	39	2	.02	5.4	15
RE 01-29	1.50	47.83	38.16	184.6	59	8.8	4.6	1051	3.95	3.4	5	.8	4.2	22.2	.25	.40	.22	15	.32	.043	21.8	8.3	.24	129.6	.059	3	1.80	.007	.18	<.1	5.7	.08<	.01	33	3	.03	5.5	15
01-31	.86	13.95	20.24	55.3	40	10.3	4.8	708	1.90	2.7	5	1.1	4.1	23.7	.14	.41	.22	14	34	.034	20.9	8.9	.26	180.5	.032	2	1.35	.006	.14	<.1	2.3	.08<	.01	24	3	.02	4.0	15
01-32	1.17	22.11	16.40	80.7	123	12.8	9.0	588	2.01	7.6	.4	3.1	4.1	46.7	.39	1.82	.25	13	3.61	.079	17.4	7.7	.69	153.0	.005	4	.88	.004	.09	<.1	2.5	.16<	.01	72	.1	.05	2.2	15
01-33	1.55	28.69	47.05	70.9	44	6.9	3.5	1068	3.98	3.2	5	<.2	4.2	17.4	.20	.67	.19	14	30	.049	27.7	7.2	.20	176.3	.040	<1	1.13	.005	.13	<.1	3.6	.07<	.01	32	3	.02	3.7	15
01-34	3.91	64.83	67.77	106.0	275	17.6	5.7	1575	5.86	6.2	6	3.5	5.2	23.9	.26	.85	.31	11	.23	.049	41.1	6.7	.18	185.9	.032	1	1.30	.005	.11	<.1	4.8	.06	.01	100	5	.02	3.7	15
01-36	.98	13.08	22.41	84.0	44	8.5	3.5	1268	2.49	2.5	4	3.0	3.3	19.5	.15	.32	.23	15	.23	.040	21.1	8.4	.21	277.4	.052	<1	1.43	.007	.12	.1	2.6	.08<	.01	30	1	.02	4.3	15
01-38	.79	20.40	45.52	95.0	35	12.0	7.9	702	3.51	5.4	.7	.5	6.0	12.0	.11	.92	.46	46	.15	.064	39.9	12.2	.16	140.8	.037	2	.99	.004	.08	<.1	3.4	.07<	.01	25	4	.02	3.6	15
STANDARD	9.25	125.17	33.48	153.0	294	34.5	12.3	807	3.05	30.3	5.5	20.8	4.1	25.7	5.36	5.20	5.25	73	51	.087	16.3	180.0	.56	146.3	.084	2	1.66	.027	.14	3.7	2.6	1.04	.03	231	1.2	1.13	6.0	15

Standard is STANDARD DS3.

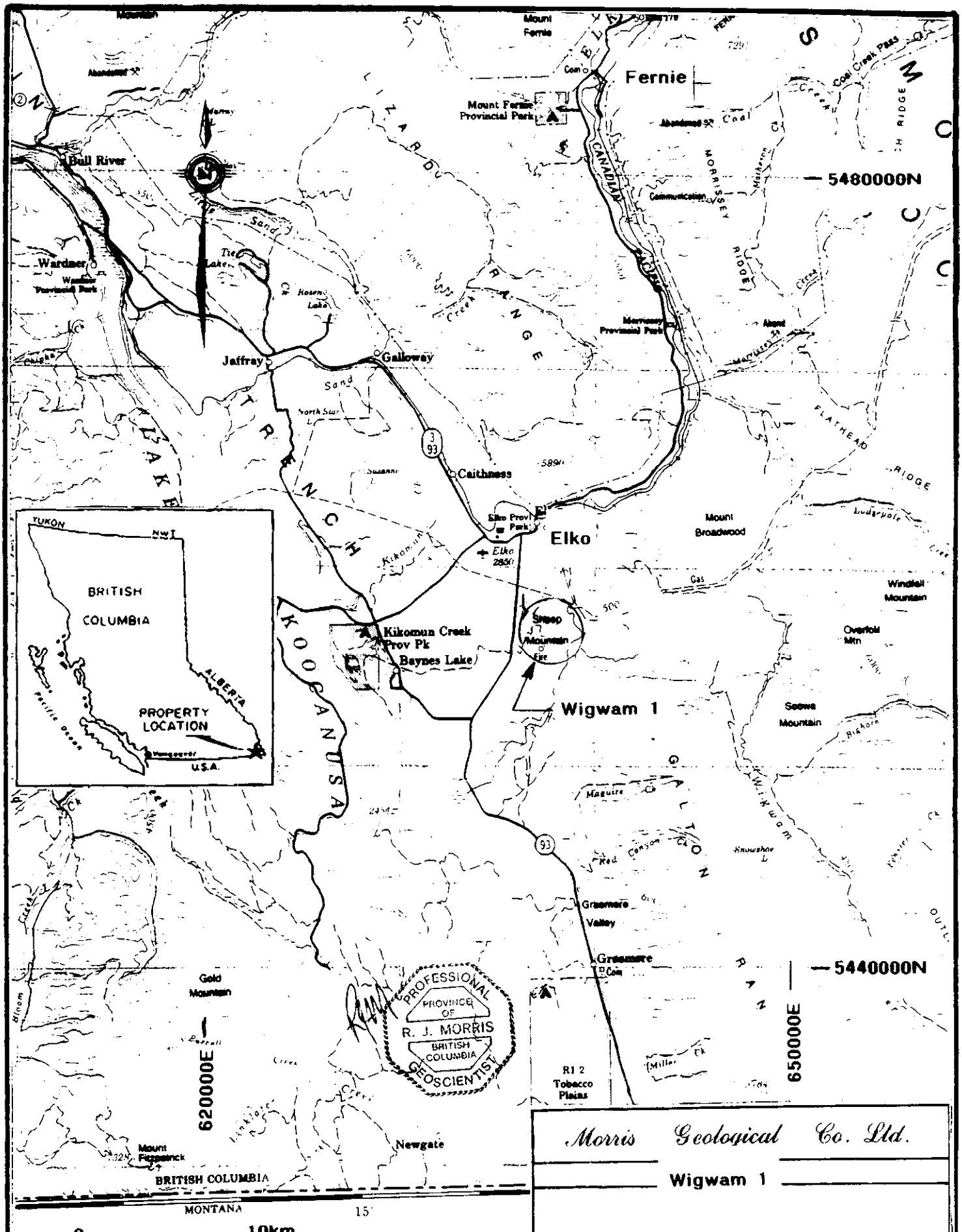
GROUP 1F15 - 15.00 GM SAMPLE LEACHED WITH 90 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 300 ML, ANALYSED BY ICP/ES & MS.

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: APR 29 2002 **DATE REPORT MAILED:** May 7/02 **SIGNED BY.** D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

Data FA



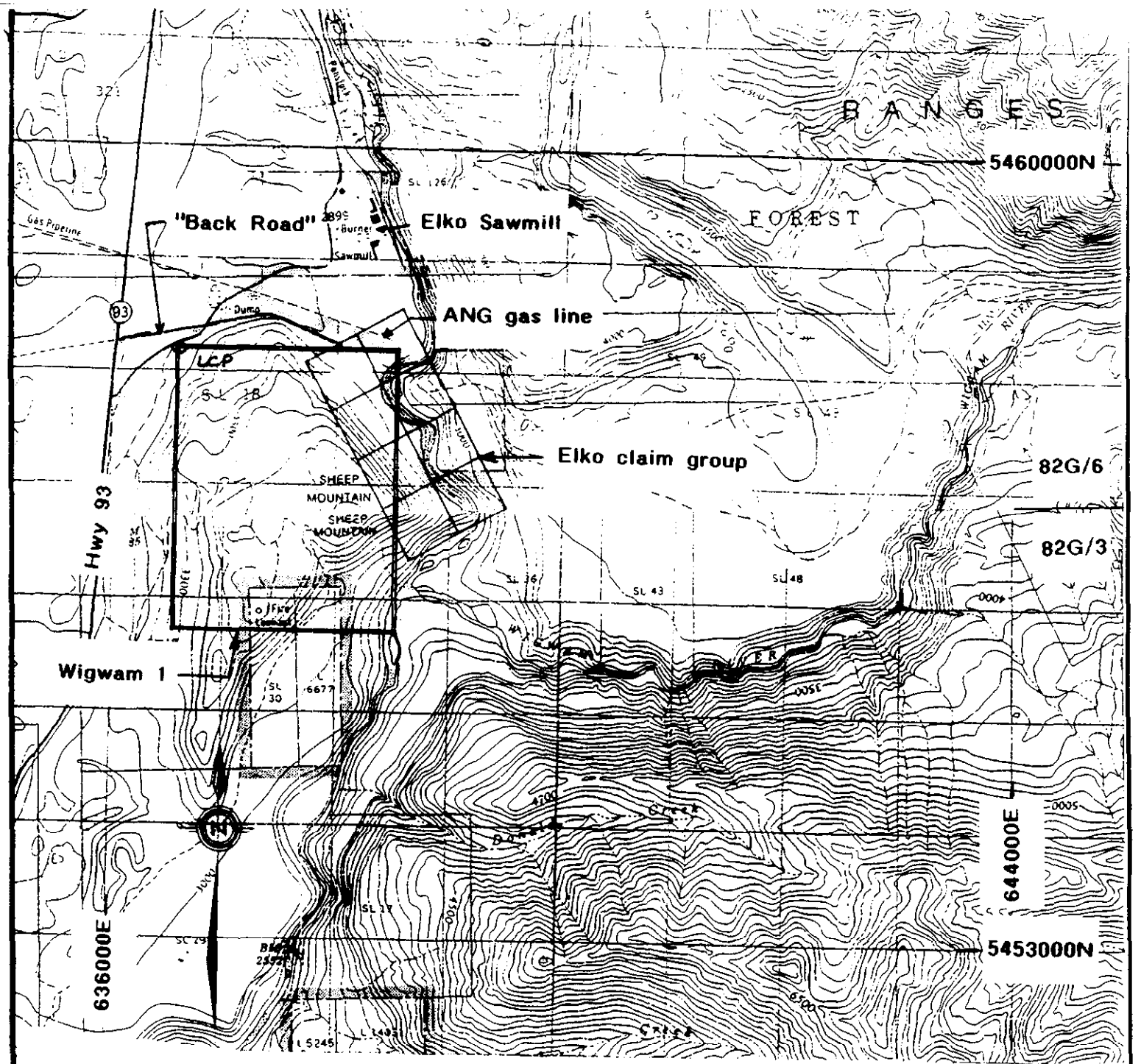
Morris Geological Co. Ltd.

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

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

Morris Geological Co. Ltd.

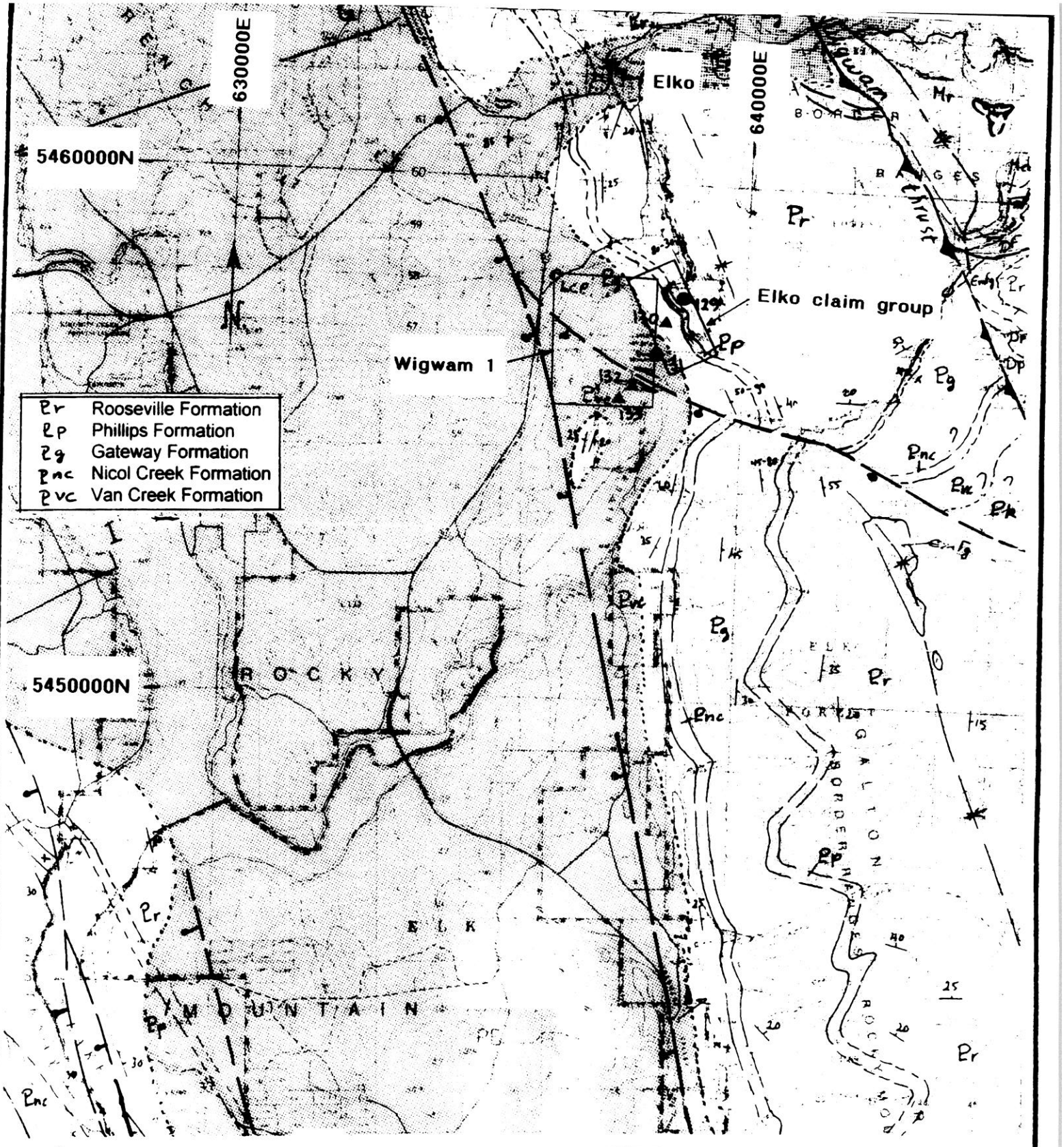
Wigwam 1

Access Map

DRAWN BY: RJM	DATE: 1 Jan. 01
AUTHOR: R.J. MORRIS	SCALE: 1:50 000

Fig. 2

Scale= 1:50 000



Scale= 1:100 000

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

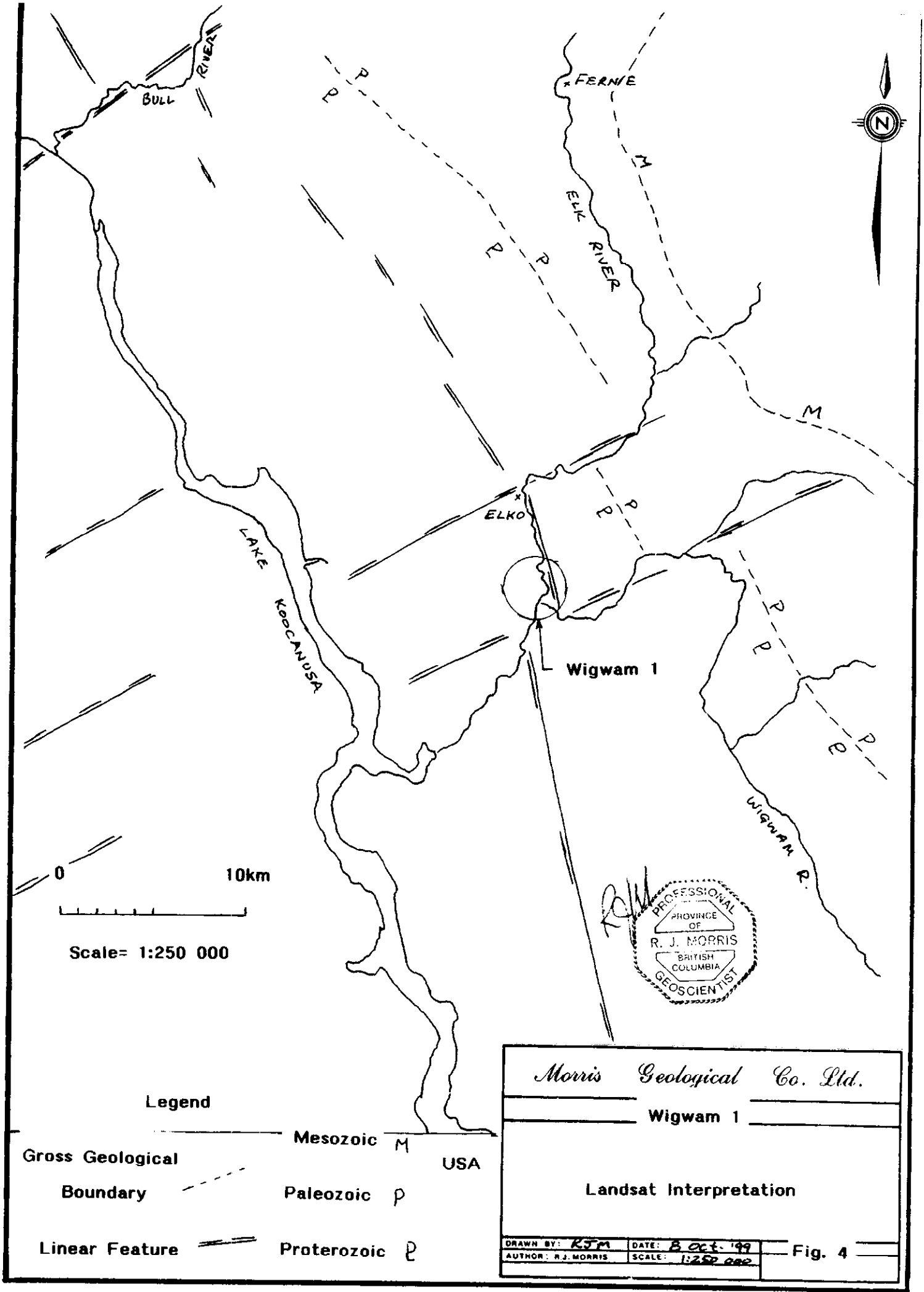
Morris Geological Co. Ltd.

Wigwam 1

Regional Geology

DRAWN BY: RJM	DATE: 1 Jan 01	Fig. 3
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.
M
P
N
0
10km
Scale= 1:250 000
PROFESSIONAL
PROVINCE OF
R. J. MORRIS
BRITISH COLUMBIA
GEOSCIENTIST
Legend
Gross Geological Boundary
Linear Feature
Mesozoic M
Paleozoic P
Proterozoic P
USA
Morris Geological Co. Ltd.
Wigwam 1
Landsat Interpretation
DRAWN BY: RJM
AUTHOR: R.J. MORRIS
DATE: 8 Oct. '99
SCALE: 1:250 000
Fig. 4

Hwy. 3

Elko

5460000

N

Elk River

Wigwam Claim

Elko Group

Hwy. 93

5455000

Elk River

N.

5450000

0 2.0km

Scale = 1:50 000

635000

640000

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

Morris Geological Co. Ltd.

Wigwam 1

Regional Linear Features

DRAWN BY: RJM DATE: 12/29/02 Author: R.J.Morris	FILE: elko-topo.dgn	VERT. SCALE: 1:50 000	Fig. 5

Pipeline

Elk River

Wigwam Claim

Elko Group

5458000

Northwest Area

Northeast Area

East Area

93

Wigwam River

5456000

South Area

N.

Elk River

Donald Cr.

5454000

0 0.5 1.0km

Scale = 1:20 000

PROFESSIONAL ENGINEER
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R. J. MORRIS
GEOSCIENTIST

5452000

640000

636000

638000

Morris Geological Co. Ltd.

Wigwam 1

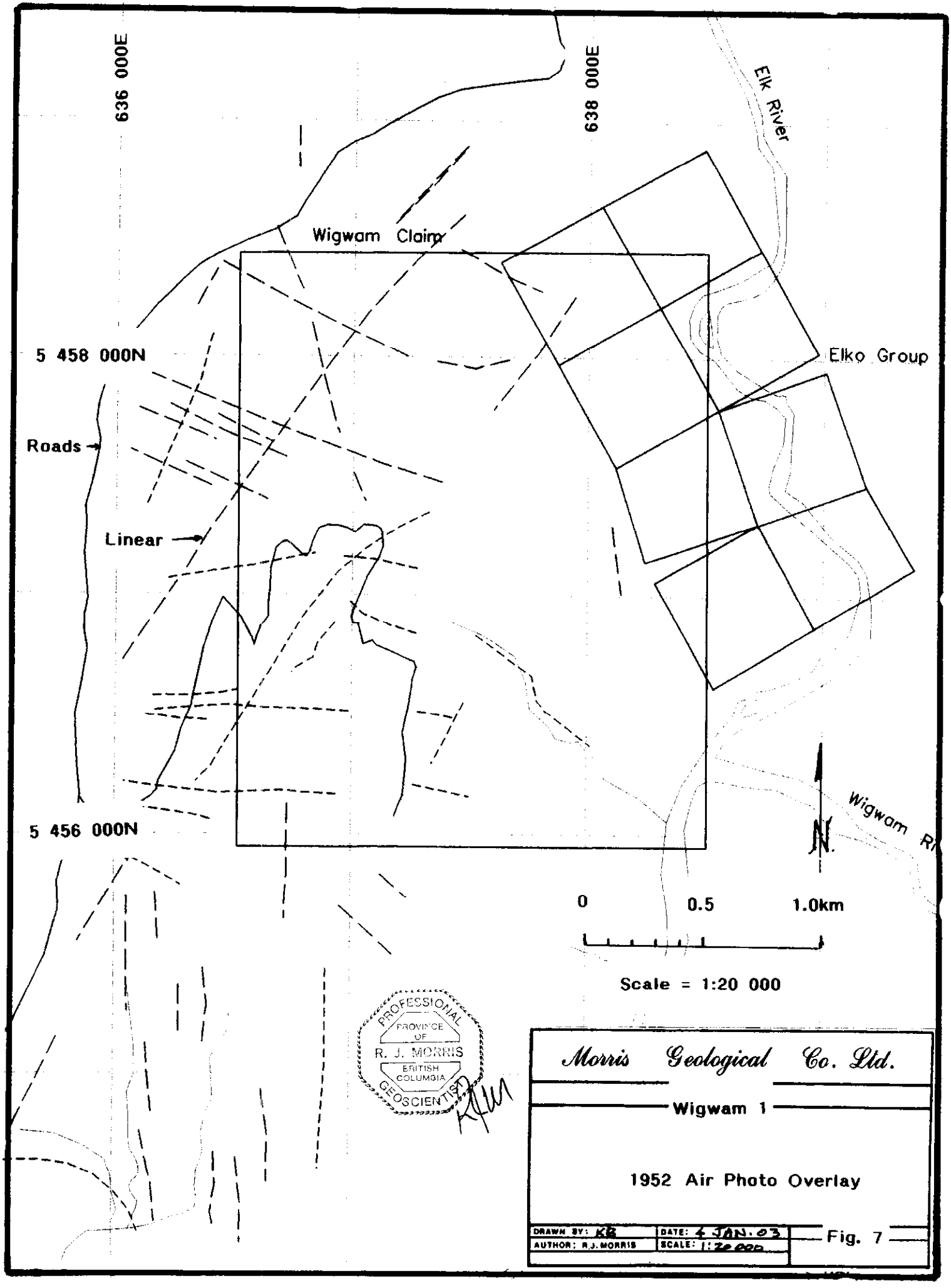
Reference Map

DRAWN BY: RJM
DATE: 12/20/02
Author: R.J.Morris

FILE: wmc-topo.dgn

VERT. SCALE: 1:20 000

Fig. 6



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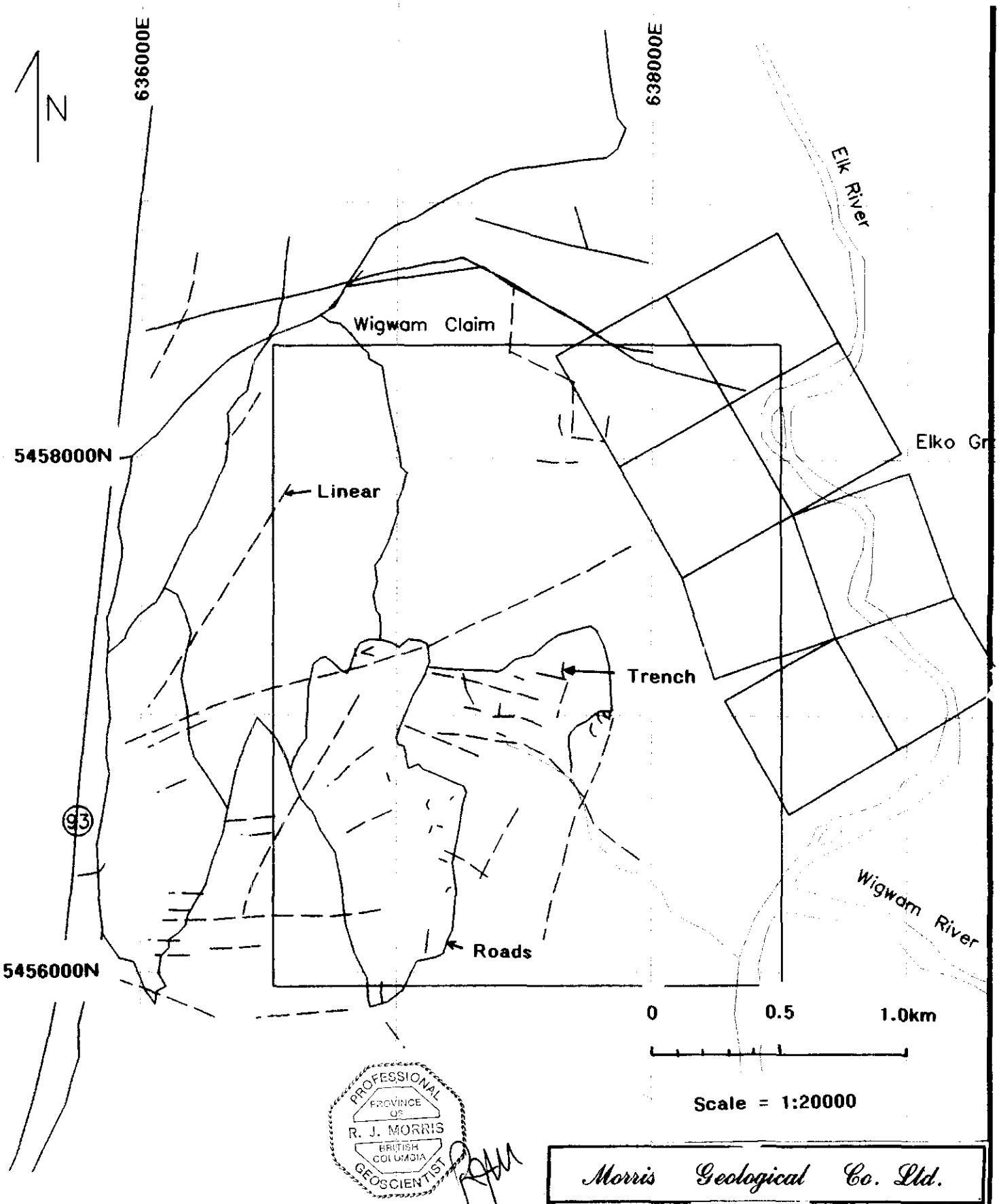
Wigwam 1

1952 Air Photo Overlay

DRAWN BY: KB	DATE: 4 JAN. 03
AUTHOR: R.J. MORRIS	SCALE: 1:20 000

Fig. 7



Scale = 1:20000

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

Morris Geological Co. Ltd.

Wigwam 1

1962 Air Photo Overlay

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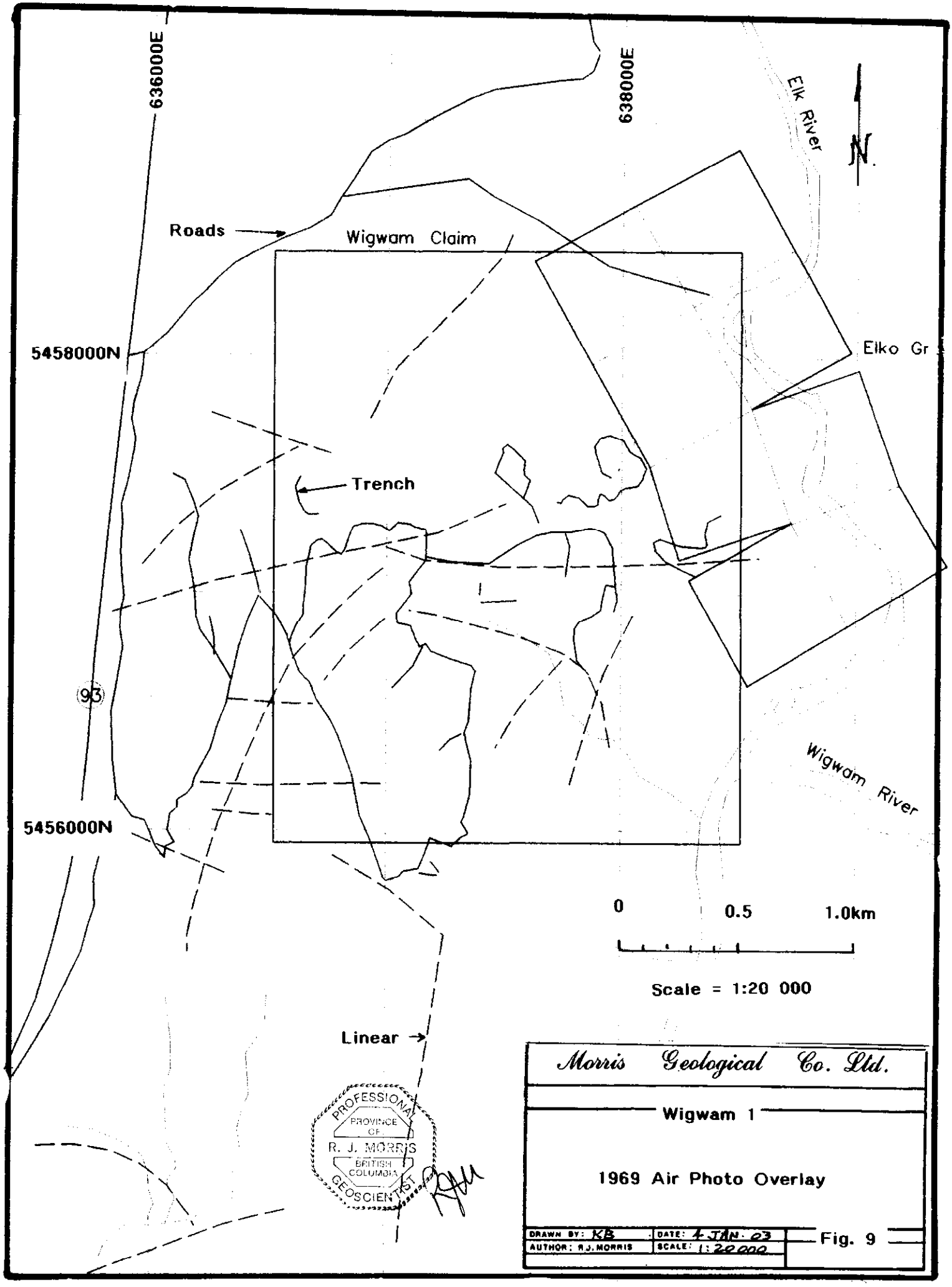
AUTHOR: R.J. MORRIS	SCALE: 1:20000

Fig. 8



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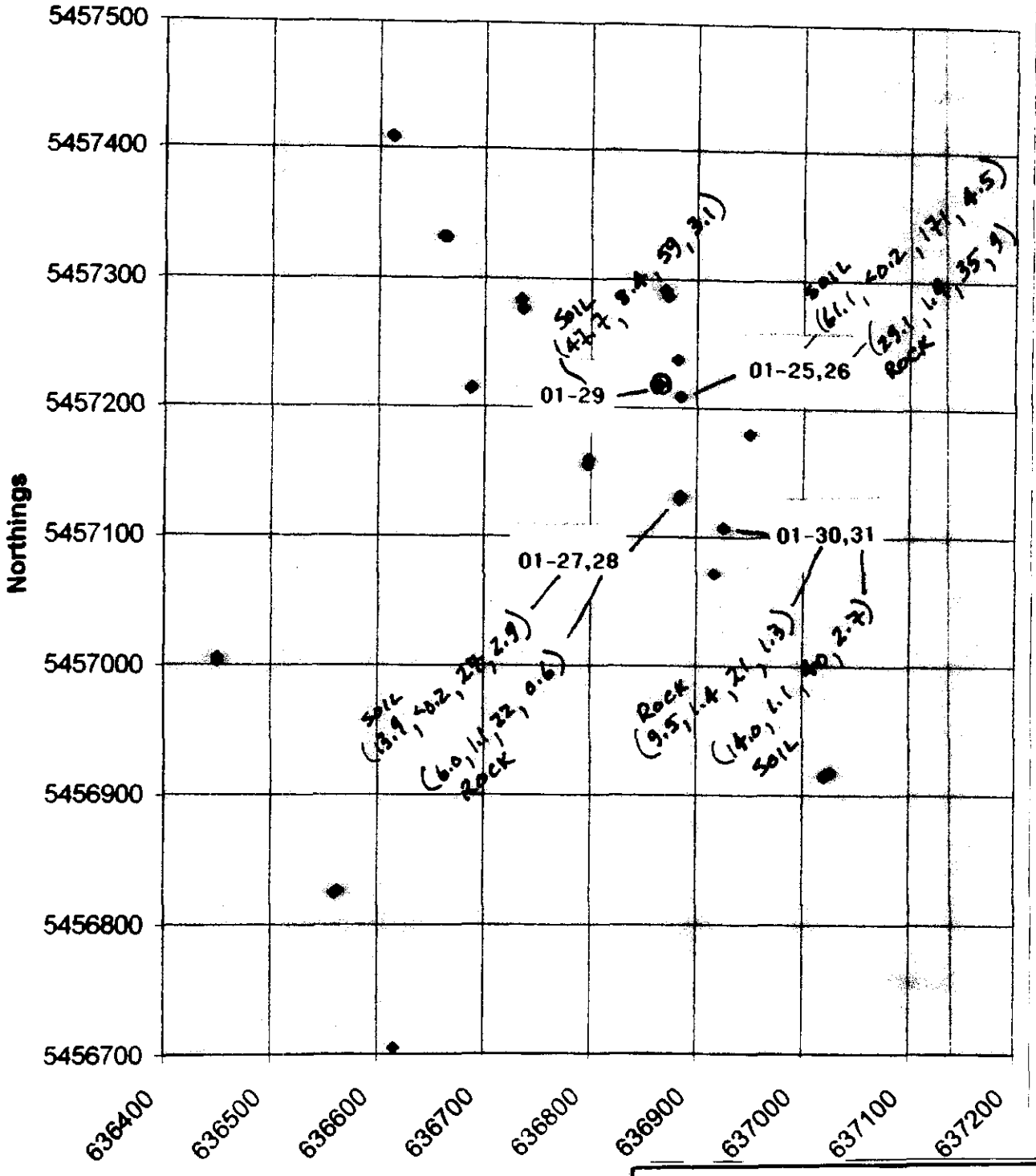
Wigwam 1

1969 Air Photo Overlay

DRAWN BY: KB	DATE: 4 JAN. 03
AUTHOR: R.J. MORRIS	SCALE: 1:20000

Fig. 9

Wigwam 1 Claim, Northwest Side



SOIL SAMPLE o (Cu ppm, Au ppb, Ag ppb, As ppm)

ROCK SAMPLE x (Cu, Au, Ag, As)

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Wigwam 1

Northwest Sample Sites

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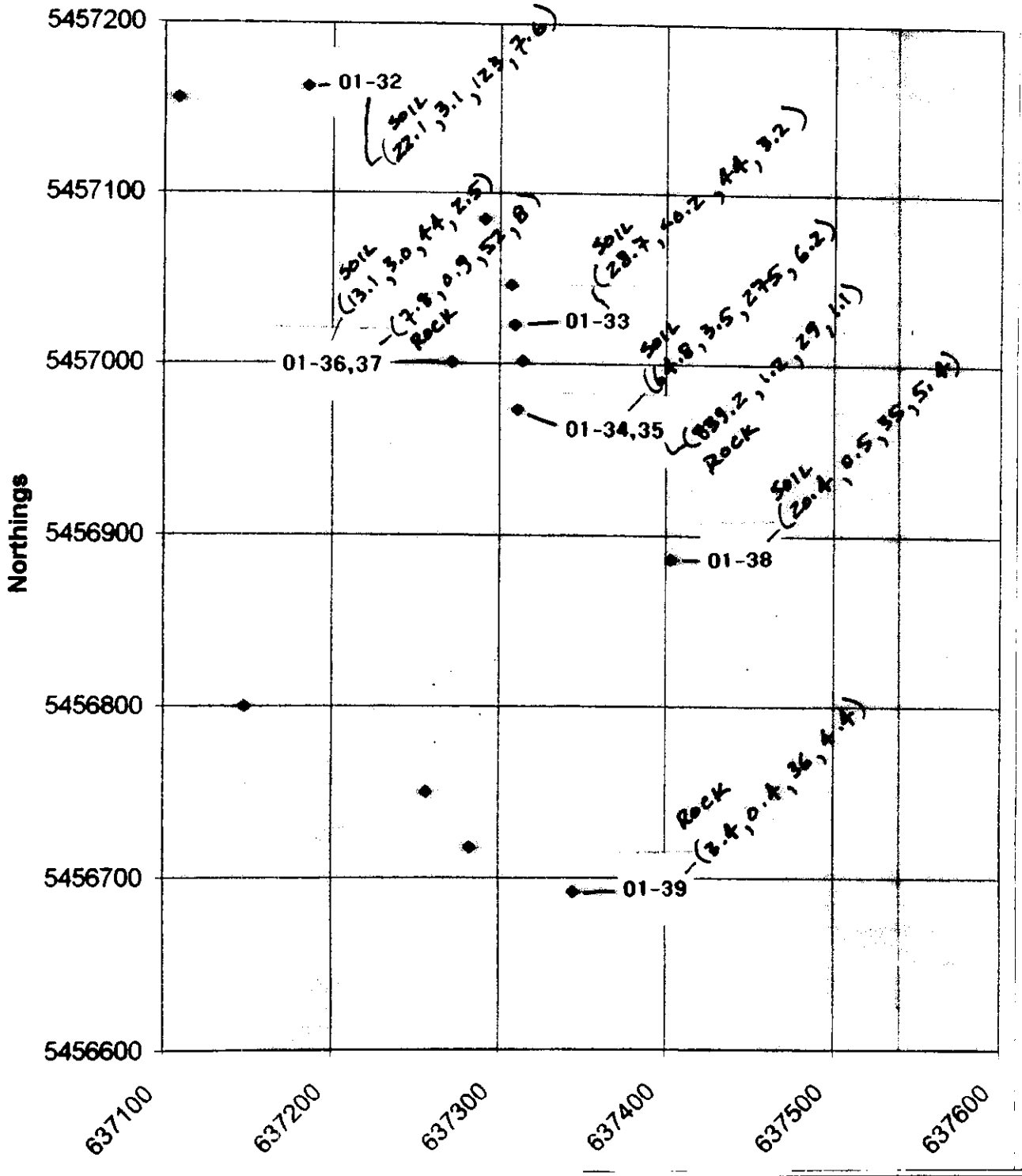
Fig. 10

Wigwam 1 Claim, Northeast Side



SOIL SAMPLE ○ (Cu ppm, Au ppb, Ag ppm, As ppm)

ROCK SAMPLE × (Cu, Au, Ag, As)

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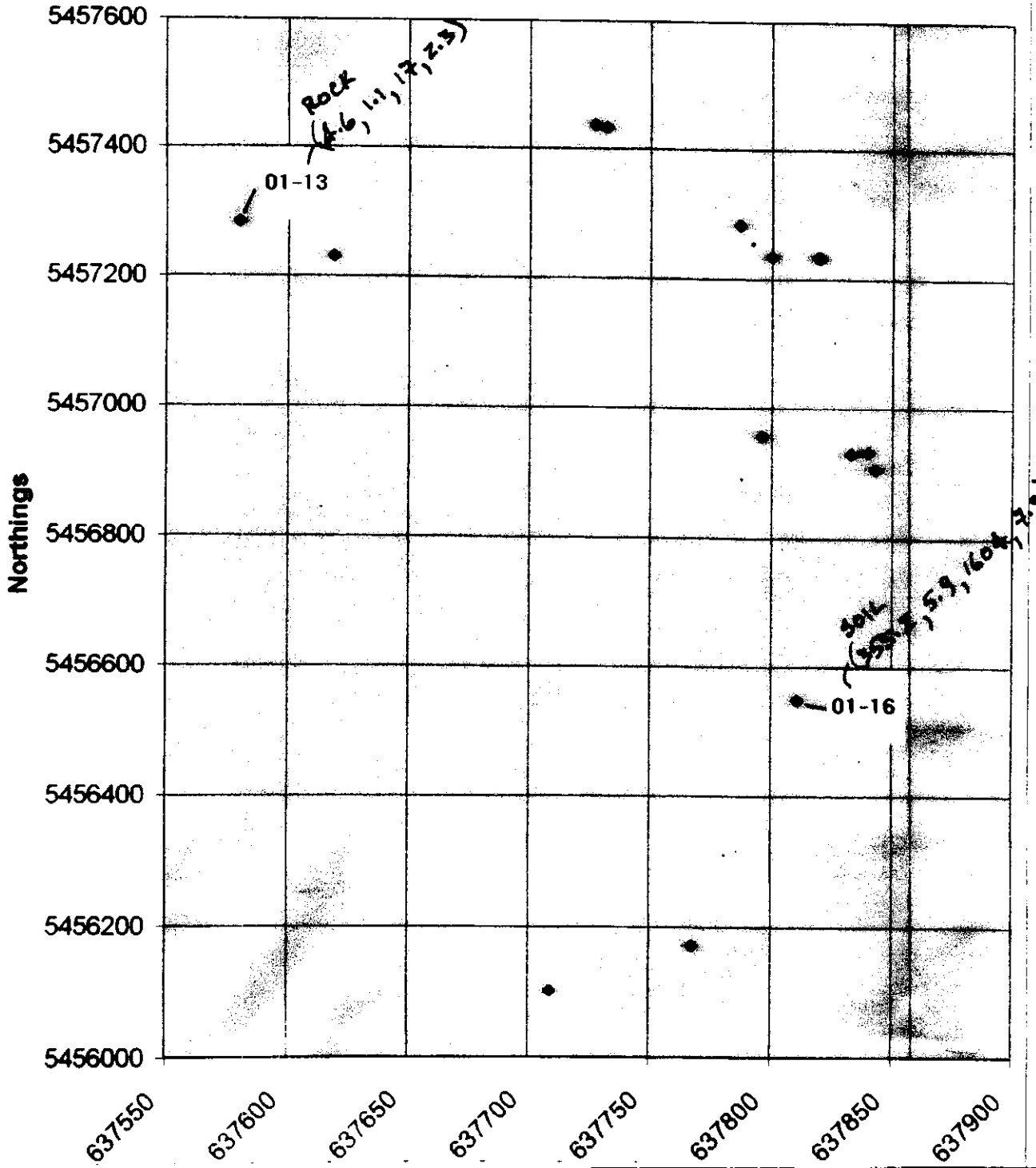
Wigwam 1	
Northeast Sample Sites	
DRAWN BY: RJM	DATE: 4 JAN 03
AUTHOR: R.J. MORRIS	SCALE: —

Fig. 11

Wigwam 1 Claim, East Side



SOIL SAMPLE o (Cu ppm, Au ppb, Ag ppb, As ppm)

ROCK SAMPLE x (Cu, Au, Ag, As)

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Wigwam 1

East Sample Sites

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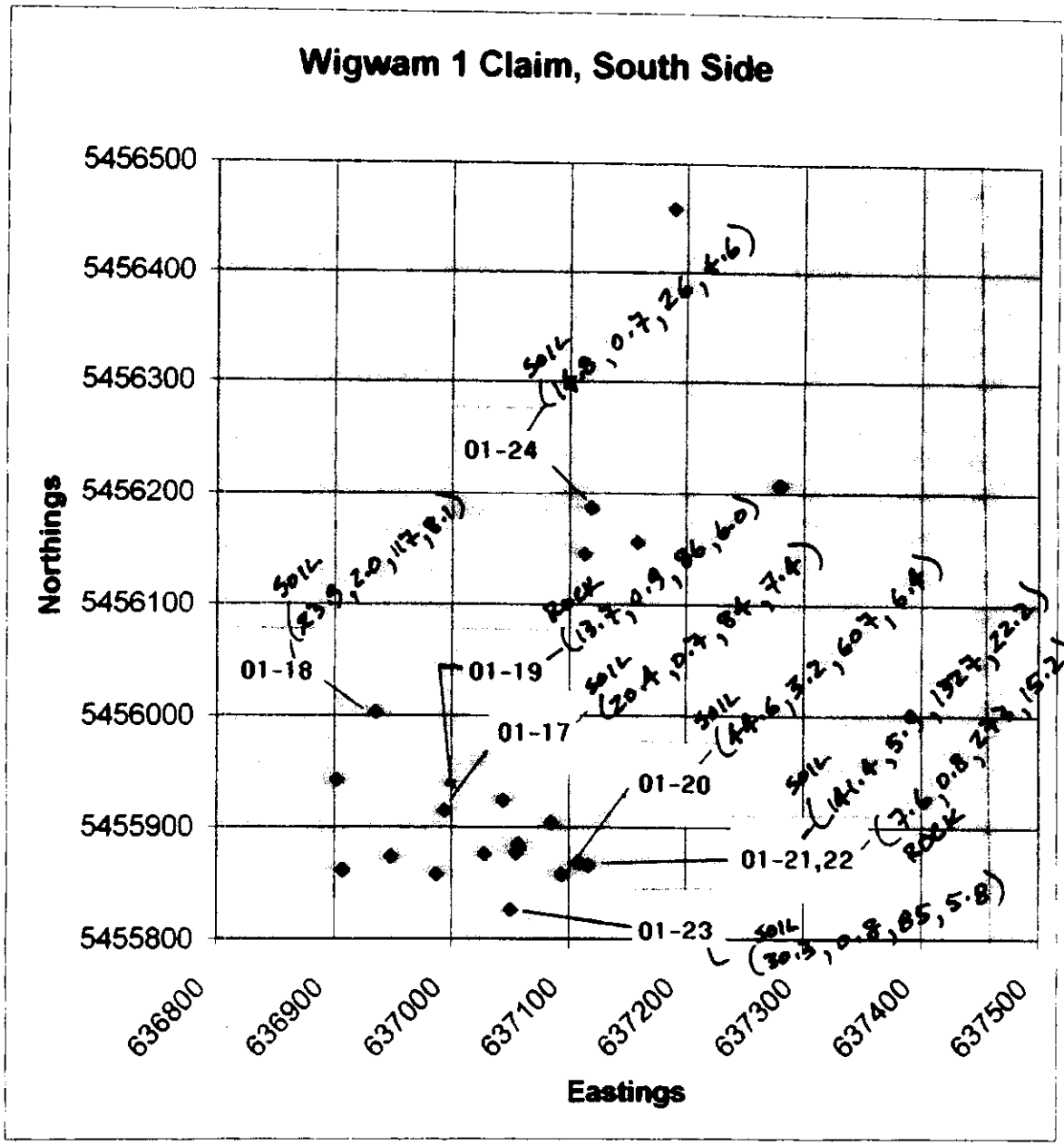
AUTHOR: R.J. MORRIS	SCALE: —

Fig. 12



SOIL SAMPLE ○ (Cu ppm, Au ppb, Ag ppb, As ppm)

ROCK SAMPLE × (Cu, Au, Ag, As)

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Wigwam 1

South Sample Sites

DRAWN BY: ATM	DATE: 6 JAN. 03
AUTHOR: R.J. MORRIS	SCALE: —

Fig. 13