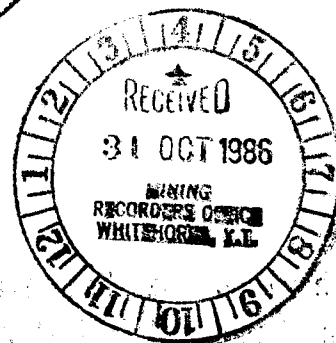


TATAM RESOURCES INC.

1986 GEOLOGICAL, GEOCHEMICAL,
AND GEOPHYSICAL EXPLORATION
OF THE BUR PROPERTY, YUKON



091864

Work on Claims

JO 7-8, JY 6-8, 18, 25-26, 28, 31, 35-36, 45, 51, 53-54
58, 61, 63-67, 69, KAT 37, 39

Whitehorse Mining District

Geographic Coordinates

61° 22'N

139° 18'W

NTS Sheet 115 G/6

by

L.B. Halferdahl, Ph.D., P.Eng.

1986 10 28

Work on Property Conducted 1986 08 12 to 1986 10 12

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091864

This report has been examined by *108100*
the Geological Evaluation Unit
under Section 53 (4) Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of \$ 3200.00.

for *D. Edmund*
Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

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SECTION 1.0

INTRODUCTION

Technical exploration of the Bur property continued during the period August 12 to 26, 1986 with minor work on a short section of road later. A two-person crew made geological observations on claims in the western part of the property, collected 32 panned concentrates from which heavy minerals were analyzed, and ran one magnetometer traverse. This report describes these explorations. As accounts of the geographic setting, previous work, and the geology are available in previous assessment reports, only changes and new information on these three features are included.

Access to the valleys of Burwash and Tatamagouche Creeks and Duke River was by a four-wheel-drive vehicle. Accommodation for the crew was in a trailer camp in the valley of Burwash Creek.

Many of the tributaries of Burwash and Tatamagouche Creeks have not been formally named. For convenience some of these tributaries or pups have been given informal names, which accord with local use as much as possible. A few other topographic features have also been named informally.

SECTION 2.0

SUMMARY OF RESULTS

1. Structural complexities along Lori, Betz, and Johnson Creeks hinder the assignment of strata there to specific parts of the Hasen Creek Formation, but the banded tuffs and argillites along the lower part of San Creek are probably lowest stratigraphically, followed upward by intercalated black pyritic tuffs or argillites and limestone, with light-colored cherts being the highest strata noted. At least two layers of chert-granule limestone are present along Betz Creek, but further information is needed to confirm the correlations of the lower one with the chert-granule limestone at the top of Tatamagouche Mountain. Most of the stratigraphic units along Lori and Betz Creeks are associated with basic igneous rocks, probably both intrusions and flows.
2. The granodiorite in Flynn Canyon contains considerable magnetite at and near its contact with tuffs of the Hasen Creek Formation.
3. Anomalous concentrations of copper, molybdenum, lead, and zinc are present in a limestone layer along Betz Creek adjacent to a fault.
4. Anomalous concentrations of gold are present in heavy mineral samples from Indigo, Sky, Chris, Flynn, Betz, San, Lori, and Joyce Creeks. The sample with the highest concentration of gold from Betz Creek also contains anomalous

concentrations of copper, lead, and zinc. The samples from Flynn Creek also have anomalous concentrations of copper.

5. A magnetometer traverse along Johnson Creek has provided information on the magnetic responses of the several lithologies present there.

SECTION 3.0

PROPERTY

The Bur property now consists of 312 quartz mineral claims along both sides of Burwash Creek extending from Duke River to beyond Tatamagouche Creek in the Whitehorse Mining District (Fig. 1.1), but only the 10 claims to which the work reported here is to be applied are listed below.

<u>Claim</u>	<u>Grant Number</u>	<u>Record Date</u>	<u>Expected Expiry Date</u>
JY 29-30	YA 93853-54	1985 10 24	1990 04 16
JY 35-36	YA 93857-58	1985 10 24	1989 10 24
JY 41-42	YA 93861-62	1985 10 24	1989 10 24
JY 53	YA 93855	1985 10 24	1989 10 24
JY 54	YA 93856	1985 10 24	1990 04 16
JY 55-56	YA 93859-60	1985 10 24	1989 10 24

The recorded holder of these claims is Tatam Resources Inc. for whom the work described in this report was conducted. On its approval, this work is expected to extend the expiry dates of these claims to those listed above.

For assessment work purposes, the work reported here was performed on the claims listed below. Some work was performed on other claims.

YA 23543-44	JO 7-8	YA 75154	JY 58
YA 23606-08	JY 6-8	YA 75157	JY 61
YA 51134	JY 18	YA 75159-63	JY 63-67
YA 52563-64	JY 25-26	YA 75165	JY 69
YA 52566	JY 28	YA 75179	KAT 37
YA 52569	JY 31	YA 75181	KAT 39
YA 52583	JY 45	YA 93855-56	JY 53-54
YA 52589	JY 51	YA 93857-58	JY 35-36

SECTION 4.0

LOCATION AND ACCESS

The Bur property is in southwestern Yukon a few kilometres northeast of Kluane National Park. It extends almost from the headwaters of Tatamagouche Creek, across Burwash Creek, and the Burwash Uplands some 15½ km to just across Duke River. It averages about 3½ km wide.

From Whitehorse, the Bur property may be reached by driving about 300 km northwesterly along the Alaska Highway. From the Alaska Highway three roads branch

off to reach different parts of the property. The first near Mile 1099 leaves the Alaska Highway just past the Duke River bridge and continues along the west side of Duke River as far as a point opposite the mouth of Squirrel Creek. It is passable for ordinary vehicles except possibly in and after periods of heavy rain when a four-wheel-drive vehicle is preferable. The east end of the Bur property is accessible from the Duke River road by means of tracked-vehicle or four-wheel-drive vehicle roads:

- 1) tracked-vehicle road about 2½ km up Bea Creek, thence westerly past Bea Lake to Frying Pan Creek,
- 2) four-wheel-drive road about 1 km up Frying Pan Creek,
- 3) four-wheel-drive road up Squirrel Creek (which requires fording Duke River - possible at moderately low water),
- 4) tracked-vehicle river road which continues past Frying Pan Creek on the west side of Duke River beyond the Bur property to placer claims on Granite Creek, and
- 5) tracked-vehicle swamp road which branches off the river road and continues beyond the Bur property also to placer claims on Granite Creek.

The second road to the Bur property starts at Mile 1104 on the Alaska Highway and follows up Burwash Creek for at least 20 km to above the upper canyon and even beyond to the boundary of Kluane National Park. This is a very rough road passable under favorable conditions for an ordinary vehicle, but better with a four-wheel-drive vehicle. Parts of it are subject to washouts or slides during periods of heavy rain. A branch from the Burwash Creek road leads through the canyon of Tatamagouche Creek and continues up the valley of Tatamagouche Creek across a pass to the headwaters of Quill Creek to connect with the third road which leaves the Alaska Highway at Mile 1112 and runs up Quill Creek. Because of high water in 1986 parts of this branch road above the falls in Tatamagouche Canyon are not passable for four-wheeled-drive vehicles. The part of this road above Tatamagouche Canyon crosses Tatamagouche Creek several times.

SECTION 5.0

GEOLOGY

As previously indicated, only new information on the geology is presented here, as more complete accounts of the geology are available in previous assessment reports. A stratigraphic column for the Burwash Creek area is in Table 5.1. Of the units in it, only strata of the Paleocene St. Clare and Amphitheatre Formations have

TABLE 5.1 STRATIGRAPHIC COLUMN FOR THE BURWASH CREEK AREA
(modified after Muller, 1967; Smith and MacKevett, 1970;
Read and Monger, 1976)

Period Epoch Formation Member	Lithology
Tertiary Paleocene	LATITE, porphyritic
	————— Intrusive Contact —————
St. Clare	BASALT and ANDESITE, red-brown; massive or vesicular agglomerate, breccia, tuff
Paleocene or Eocene Amphitheatre	SANDSTONE, sand, conglomerate, gravel, shale, coal
	————— Angular Unconformity —————
Cretaceous and Later or Earlier	GRANITE, alaskite, granodiorite, diorite, related hybrid rocks
	————— Intrusive Contact —————
Upper Triassic ?	LIMESTONE and SHALE, thin-bedded, dark to black
Chitistone	LIMESTONE, massive
Nikolai	BASALT, purple and dark-green, amygdaloidal; minor interbedded limestone; conglomerate
	————— Disconformity —————
Permian-Triassic	INTRUSIONS, basic and ultrabasic
	————— Intrusive Contact —————
Lower Permian Skolai Group	
Hasen Creek	CHERT-GRANULE LIMESTONE; tuffs, flows, argillite; CHERT, thin-bedded; limestone
Station Creek	
Volcaniclastic	TUFFS and AGGLOMERATES; CARBONATE, fine-grained rusty-weathering ankerite or siderite, and ARGILLITE and shale
Volcanic Flow	VOLCANICS, intermediate to basic
Rust	TUFFS and AGGLOMERATES underlain by CARBONATE, fine-grained rusty-weathering ankerite, siderite, dolomite?, and limestone, in part siliceous and argillaceous

not been observed on the Bur property. Details on these and the other units in Table 5.1 are available in some of the reports listed in the references.

Observations on the lower part of the Hasen Creek Formation within the property were obtained during traverses up Betz, San, Lori, and Johnson Creeks in attempts to provide further information on its stratigraphy there. These observations are summarized here along with a few other findings.

5.1 Betz Creek

From where the upper road in Flynn Canyon crosses Betz Creek as far up as the outcrop of chert-granule limestone, the outcrops along the east side of Betz Creek are mostly black tuffs or argillites, much of which weather rusty.

Along Betz Creek the lowest band of chert-granule limestone is exposed for $1\frac{1}{2}$ m on the west side of the valley, where it is overlain by buff-weathering, light-green-grey, well cemented, fine-grained sandstone or buff-weathering limestone which is almost horizontal. Its base is not exposed there.

On the east side of the valley about 10 m higher is another outcrop of chert-granule limestone with granules mostly of black tuff but some lighter grey, all rounded, up to 1 cm in size, in an almost close-packed texture. Its southwesterly contact there is with very fine grained black tuff with 30 per cent tiny white spots. This contact strikes 140° and dips very steeply possibly vertically. About 5 m along the strike of 140° , the lower contact is faulted with the fault striking 140° and dipping 66° NE. Slickensides on this surface plunge 7° at an azimuth of 340° . Across this fault are pale-green-grey volcanics with grain size to $\frac{1}{2}$ mm and with about 1 per cent disseminated sulfides. Here the northeast contact of the chert-granule limestone is a very smooth undulatory fault surface with an average strike of 300° and dip of 80° NE. This fault contains 15 to 20 cm of light-green-grey gouge. Its hanging wall consists of buff-weathering blue-grey-green micritic limestone with a few grains and wisps of hematite. This limestone is overlain by 2 m of pale-green-grey tuff with up to 20 per cent rounded black spots to 2 mm in a matrix whose grain size is less than $\frac{1}{2}$ mm, and 2 m of black silty tuff with rusty joints. Adjoining above are several metres of light-grey fine-grained limestone with beds up to 60 cm thick.

About 45 m up Betz Creek from the chert-granule limestone are outcrops of a medium-grey basic igneous rock with grains to 1 mm in size, containing about 60 per cent feldspar with the remainder dark minerals, and with many slip surfaces.

Farther up Betz Creek buff limestone is interbedded with grey argillite or tuff.

Even farther up grey-weathering basic intrusions cut rusty-weathering black tuffs.

At an elevation of about 1440 m, the rusty-weathering black tuffs are overlain by a thin layer of chert-granule limestone with more limestone above. To an elevation of about 1485 m are almost continuous outcrops of black tuff. Slightly higher up is an outcrop of medium-grey vitrophyric tuff (chert-like aphanitic rock with tiny whitish crystallites).

At the forks in Betz Creek is a small outcrop of rusty-weathering fine-grained grey tuff with some disseminated pyrite.

On the spur between Betz and San Creeks at elevations between 1550 and 1600 m are several outcrops. The easterly consists of a basic igneous rock with a diabasic texture perhaps a gabbro. The next consists of 60 cm of grey tuff with 1 to 2 per cent disseminated sulfides conformably overlain by whitish or light-grey cherty-looking tuff. Beds in the grey tuff range up to 30 cm thick; those in the cherty tuff are 8 to 10 cm thick. Joints in the cherty tuffs are rusty with the odd cube of pyrite. About 30 m along the contour from the last outcrop and separated from it by a slickensided fault is an outcrop of rusty-weathering medium-green-grey basic volcanics with grains to 1 to 2 mm. The most westerly outcrop is of pale-green-grey tuff with a few aggregates of pyrrhotite to 1 cm in size.

5.2 Johnson Creek

East of the North Fork of Johnson Creek, at an elevation of about 1600 m at the head of BJ Gulch is an outcrop of interbedded chert and basic volcanics with coarser-grained volcanics or gabbro at its top as follows:

gabbro - grain size to 3 mm or more	
chert - bands 5-6 cm thick	2-3 m
basic volcanics - medium-grey, fine-grained 1-2% disseminated sulfides	2-3 m
chert - similar to above, 2-3% disseminated sulfides, local bands of black and lighter-colored 4-10 cm thick	2½ m +

At an elevation of about 1660 m on the east side of the North Fork of Johnson Creek is an outcrop with mostly subrounded granules of chert to 1 cm in size in a cherty matrix with 2 to 3 per cent pyrite in masses and aggregates to

4 to 5 mm. This chert is underlain by 20 to 30 m of very rusty weathering grey tuff with grains to $\frac{1}{2}$ mm and 5 per cent fairly uniformly disseminated pyrite in grains to $\frac{1}{2}$ mm. The rusty pyritic tuff is underlain by white-weathering pale-grey-green tuff of grain size $\frac{1}{4}$ to $\frac{1}{2}$ mm with an exposed thickness of about 15 m. Some layers are darker and contain sparse pyrite: other layers are pale-green and cherty with 1 to 2 per cent pyrite as simple cubes and grains. Towards the base are local very cherty pale-green sections with laminae 2 to 3 mm thick.

Opposite on the west side of the North Fork part of the same sequence is exposed but with more of the section below:

chert, green	4-5 m
chert, white-weathering	3-4
covered	2
tuff, rusty-weathering	2-3
sandstone, buff-brown layer 4-5 cm thick interbedded with greenish layers of limy argillite 2-4 cm thick	1-2
covered	25
chert, banded, pale-green-grey, brown- weathering, about 1 per cent pyrite	

At an elevation of about 1575 m on the east side of the Northeast Fork of Johnson Creek is an outcrop of very fine grained rusty-weathered tuff with up to 20 per cent pyrite: about 5 per cent disseminated with much in larger masses along fractures.

5.3 San Creek

The tuffs outcropping within 50 m above the upper road in Flynn Canyon are conspicuously banded lighter- and darker-grey in bands 1 to 8 cm thick. The lighter-grey bands resemble a fine-grained sandstone with interlocking grains and about 1 per cent disseminated pyrite. The dark-weathering bands are dark-grey-green and aphanitic. Near the 50-m distance the silty tuffs contain tiny whitish specks in a darker matrix.

Between elevations of about 1320 and 1350 m is a sequence of banded medium-grey-green-weathering very fine grained grey-green argillaceous siltstones or tuffs. At an elevation of about 1380 m are medium- to dark-grey laminated siltstones or tuffs. At 1390 m are rusty black argillites with disseminated pyrite. At 1420 m is a rubble of greenish gabbroic rock of grain size to 1 mm, 20 per cent

dark minerals, and whitish grains in a glassy? matrix. At an elevation of about 1485 m is rusty-weathering black pyritic tuff in beds mostly 10 to 25 cm but some to 60 cm separated by thin layers of more fissile material, with local tiny whitish specks in a dark aphanitic matrix, and 1 to 2 per cent disseminated pyrite. This pyritic tuff appears to be intruded by gabbro of grain size 1-2 mm. Beyond the gabbro it is overlain conformably by pale-green-grey chert-like vitrophyric tuff with up to 1% disseminated pyrite.

5.4 Lori Creek

Along Lori Creek the first outcrops above those of the latite porphyry not far upstream from the crossing of the upper road, are of rusty-weathering black argillite, followed upstream by intercalated sections of limestone and black argillite as far as the forks. Some of the limestone is silty, and locally both it and the black argillite contain small to moderate amounts of disseminated pyrite.

5.5 Structure and Stratigraphic Correlations

Perusal of Fig. 5.1 shows that San Creek follows almost along the strike of the strata whose attitudes there are much more consistent and uniform than those along Betz, Johnson, and Lori Creeks. The attitudes of the strata in the lower part of San Creek lead to the suggestion that the banded strata there are stratigraphically below the rusty black tuffs and intercalated limestone units along Lori Creek. The cherty units at the heads of Betz Creek, BJ Gulch, and along the North Fork of Johnson Creek are probably at the top of the sections observed.

The stratigraphic position of the wormy and cherty tuffs and the magnetic basic lavas trenched and drilled on the spur between the West Fork of Johnson Creek and Flynn Creek is uncertain, as the laminated cherts noted along the North Fork of Johnson Creek are unlike any units trenched and drilled.

Previously we had correlated the lower layer of chert-granule limestone along Betz Creek with similar distinctive limestone outcropping on a northwesterly trending spur at the top of Tatamagouche Mountain just west of Kat Creek. However, with the discovery of another thin layer of chert-granule limestone higher up Betz Creek, both stratigraphically and topographically, it is likely that chert-granule limestone layers are not unique; care is required for their use in stratigraphic correlations in the Skolai Group. In any event all such layers were probably formed under similar sedimentary conditions within a relatively short period.

5.6 Granodiorite in Flynn Canyon

At the top of Flynn Canyon along Burwash Creek on claim JY 29 are outcrops of moderately magnetic granodiorite with grain size 2 to 3 mm consisting of 30 to 40 per cent black hornblende with 30 per cent glassy quartz and 30 to 35 per cent feldspar. A short distance downstream the hornblende content increases to 50 per cent.

Near the top of Flynn Canyon is a thin layer of unassimilated grey tuff with quartz clasts to 3 mm in size in a matrix with grain size less than 1 mm. It strikes 67° and dips 70° NW. Its weathered surface shows 10 to 20 per cent conspicuous whitish spots.

Farther downstream to beyond the mouth of Johnson Creek are increasing amounts of dark-grey rounded xenoliths to 12 cm in size in the granodiorite. At the mouth of Johnson Creek the xenoliths constitute 30 to 40 per cent of the granodiorite, and many are magnetic. In addition coarse-grained magnetic masses, local aggregates of magnetite to 2 cm in size, and odd rusty masses some with pyrite to 5 mm are present. Below the mouth of Johnson Creek some sections of granodiorite contain 20 to 40 per cent magnetite as large grains and in xenoliths, locally with 1 to 2 per cent disseminated pyrite.

The contact of the granodiorite with the intruded tuffs near the mouth of BJ Gulch is sharp but mostly obscured. It strikes approximately 90° and dips perhaps 45° N.

5.7 Outcrop above Flynn Canyon

Along Burwash Creek above Flynn Canyon near the southerly continuation of the location line between claims JY 35 and 36 is an outcrop which shows the contact between a fine-grained dark-grey basic igneous rock to the east and a green quartzite or perhaps hornfels to the west. In the absence of any other outcrops nearby, the stratigraphic position of the sedimentary unit in this outcrop is uncertain: it may belong to the Hasen Creek Formation.

SECTION 6.0

SHOWING ON BETZ CREEK

At an elevation of about 1440 m along Betz Creek almost opposite Betz heavy mineral sample 465, previously collected, conspicuous malachite-stained float was traced to a fault about 10 m to the east. This fault strikes generally parallel to Betz Creek and dips about vertically. The east side has moved up about 2 m. The stratigraphy in this part of Betz Creek consists of 30 to 50 m of rusty weathering

black argillite capped by 3 m of grey non-rusty argillite. Above the grey argillite are at least 5 m of limestone including two layers with chert granules 12 to 15 cm thick, at its base. Some layers of this limestone above that with chert-granules have a distinctive differential erosion pattern on weathered surfaces. The limestone is overlain by pale-green tuff. Bedding in the chert-granule limestone undulates considerably as shown by the following two measurements: $65^{\circ}/25^{\circ}\text{NE}$, $95^{\circ}/19^{\circ}\text{N}$.

The chert-granule limestone and limestone for 15 cm above contain conspicuous malachite and even disseminated chalcopyrite. Within 2 m or so higher stratigraphically disseminated galena and sphalerite are present. Chip samples were collected for analysis at intervals of 5 to 10 cm stratigraphically on a line about 1 m or so west of the fault from top to bottom as follows:

Sample	Length	Description
5111	1.20 m	limestone and chert interbedded in layers approx 30 cm thick
5110	1.00	limestone and chert
5109	1.10	limestone and chert
5108	0.70	mostly limestone
5107	0.70	limestone including two layers of chert-granule limestone 12-15 cm thick
5106	0.60	grey argillite

For convenience the analytical results (appendix 1) are repeated below.

Sample	Cu ppm	Mo ppm	Pb ppm	Zn ppm	Au ppb
5106	25	1	23	235	1
5107	380	11	1080	2050	<1
5108	43	10	2500	2700	<1
5109	142	7	193	435	<1
5110	148	4	24	118	<1
5111	54	2	100	215	<1

Most of the copper, molybdenum, lead, and zinc are in a layer 1.4 m thick at the base of the limestone including the layers with chert-granules. Surprisingly, the samples contain only background concentrations of gold. Further sampling appears necessary to learn whether the concentrations of copper, molybdenum, lead, and zinc vary with their distances from the fault or whether these metals are actually stratabound at and near the base of this limestone layer.

SECTION 7.0

HEAVY MINERAL SAMPLING

7.1 Sampling and Analyses

Some 32 samples of heavy minerals were collected from creeks within and adjacent to the Bur property. In previously unsampled creeks, an effort was made to collect the first sample in each creek far enough upstream from its mouth so that it would not be influenced by material in the stream into which the creek flows. Betz, San, and Lori Creeks were resampled in order to check on previously obtained concentrations of gold, lead, zinc, and copper higher or apparently higher than background, and to observe the type of stream sediment actually sampled. Sample numbers correspond to the number of metres upstream from the mouth or other selected point, such as a road crossing, on the creeks. Heavy minerals were collected from the following nine creeks.

<u>Creek</u>	<u>Sample Length</u>	<u>Number of Samples</u>
Indigo	2800 m	9
West Fork Sky	900	3
Ted	600	2
Chris	330	3
Flynn	1200	4
Betz	375	2
San	615	2
Lori	675	3
Joyce	1300	4
	<hr/>	<hr/>
	8795 m	32

Almost all the lowest 500 m of Betz Creek consists of angular talus from adjacent outcrops. Water can be found only at a few places, so heavy minerals were collected at these places to facilitate panning. Material in the lowest 600 to 700 m of San Creek is mostly talus from adjacent outcrops but locally a few rounded boulders of peridotite and granodiorite were observed. Many stretches in the lower part of Lori Creek contain subrounded boulders of granodiorite, magnetitic peridotite, conglomerate, volcanics, and limestone.

At each sample location, gravel from the bed of the creek was shovelled into a five-gallon (24-L) pail with the larger boulders omitted, so that at most locations, the boulders omitted from the samples will compensate for the swell of the disturbed gravel. The gravel in the pail was sieved wet with an 8-inch hand sieve and the -10 mesh material panned to $\frac{1}{4}$ to $\frac{1}{2}$ kg in the field. These concentrates were later dried and the heavy minerals separated at a specific gravity of 2.96. A

representative part of the non-magnetic heavy fraction was analyzed by standard atomic absorption techniques for copper, nickel, lead, and zinc and by neutron activation techniques for gold.

7.2 Results

The analytical results are in appendix 2, and shown in Fig. 7.1 and 7.2. The results from these 32 samples have not been analyzed statistically but inspection of them indicates the following:

Indigo Creek

Gold - slightly anomalous concentrations in the highest and two lowest samples, moderately anomalous in the highest sample from the East Fork

West Fork Sky Creek

Gold - anomalous concentration in the lowest sample and possibly slightly anomalous in the two higher samples

Ted Creek

no anomalous concentrations

Chris Creek

Gold - slightly anomalous concentrations in all three samples
Nickel - slightly anomalous concentration in the highest sample

Flynn Creek

Gold - slightly anomalous concentrations in all four samples
Copper - slightly anomalous concentrations in all four samples

Betz Creek

Gold - highly anomalous concentration in lower 1986 sample not far below the outcrop of chert-granule limestone
Copper, zinc, and lead - slightly anomalous concentration in lower 1986 sample

San Creek

Gold - slightly anomalous concentration in lower 1986 sample

Lori Creek

Gold - moderately anomalous concentration in lowest 1986 sample

Joyce Creek

Gold - concentrations decreasing from moderately anomalous in lowest sample to background in highest.

These results along with those obtained previously lead to the suggestions that anomalous gold concentrations in heavy mineral samples are downstream from the points at which present streams cross or erode high-level preglacial streams, or from auriferous fractures related to folding, faulting, and igneous intrusions. Anomalous gold concentrations in heavy minerals in the streams draining Tatamagouche Mountain, sampled in 1986, are probably related to the second source. Most have not yet been followed up.

SECTION 8.0 MAGNETOMETER TRAVERSE

8.1 Equipment and Methods

A proton magnetometer, model MP-2 manufactured by Scintrex Limited was used to run one magnetometer traverse along part of Johnson Creek across terrain with moderate outcrop, and parts of which had been trenched and drilled. The magnetometer used reads to one gamma, with most readings reproduceable to within 5 or 10 gammas under the conditions of the survey. The magnetometer was read at intervals of 10 m along the traverse with two or more readings taken at each station and averaged. Stations were re-occupied to determine diurnal variations, but they were so small that no corrections were made.

8.2 Results

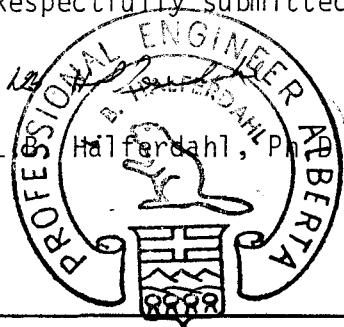
The results are shown as a profile in Fig. 7.2. The peaks exceeding 60 000 gammas at the upper end are caused by magnetic lava flows with the valleys between by tuffs. The peaks on both sides of the 1600-m contour may mark the contacts of the latite porphyry intrusion, with the intervening readings between 58 000 and 58 500 gammas being from latite porphyry. Farther down the part with readings about 58 000 gammas is underlain mostly by black pyritic tuffs. The higher readings at the bottom end are probably related to the contact of the granodiorite.

SECTION 9.0 ROAD MAINTENANCE

A D7 bulldozer was used to repair a short section of the lower road in Flynn Canyon. Part of this road had been washed out during high water earlier in the season.

Respectfully submitted

L. B. HALFERDAHL, P. Eng.



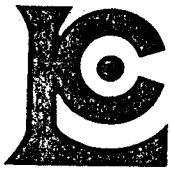
Edmonton, Alberta
1986 10 28

SECTION 10.0

REFERENCES

- Bell, R.A. and Hallof, P.G. (1967) Report on induced polarization survey of the Cork group, Whitehorse M.D., Yukon for Geophoto Services Limited; Can. Dept. Indian and Northern Affairs Assessment Rept. 019087, 17 p., 7 fig., 1 map.
- Bissonnette, R. and Halferdahl, L.B. (1979) 1978 and 1979 exploration (geological, geochemical, geophysical, overburden drilling) of the Bur property Yukon Territory; Can. Dept. Indian and Northern Affairs Assessment Rept. 090499, 29 p., 9 appendices, 33 fig.
- Cathro, R.J. (1970) Report on the 1970 drilling program, Cork property, Kluane district, Yukon; Imperial Oil Enterprises Ltd., 11 p., 3 appendices, 12 fig., company report.
- Christopher, P.A., White, W.H., and Harakal, J.E. (1972) K-Ar dating of the 'Cork' (Burwash Creek) Cu-Mo prospect, Burwash Landing area, Yukon Territory; Can. Jour. Earth Sci., v. 9., p. 918-921.
- Dodds, C.J. (1982) Geology S.W. Kluane Lake map area (115G and F(E $\frac{1}{2}$)); Geol. Surv. Can. Open file 829.
- Geological Survey of Canada (1967) Duke River, Yukon Territory; Map 4299G, Geophys. Paper 4299.
- Halferdahl, L.B. (1980) 1980 exploration (geological and overburden drilling) of the Bur property, Yukon Territory; Can. Dept. Indian and Northern Affairs Assessment Rept. 090655, 14 p., 21 fig., 5 appendices.
- _____ (1981a) 1980 geochemical and geological exploration of part of the Bur property, Yukon Territory; Can. Dept. Indian and Northern Affairs Assessment Rept. 090848, 8 p., 10 fig., 6 appendices.
- _____ (1981b) 1981 trenching, stripping, and drilling of the Bur property, Yukon Territory; Can. Dept. Indian and Northern Affairs Assessment Rept. 090875, 2 p., 6 fig., 2 appendices.
- _____ (1982) 1982 heavy mineral sampling of part of the Bur property, Yukon Territory; Can. Dept. Indian and Northern Affairs Assessment Rept. 091397, 5 p., 4 fig., 3 appendices.
- _____ (1983a) 1982 drilling and initial part of 1983 heavy mineral sampling of part of the Bur property, Yukon; Can. Dept. Indian and Northern Affairs Assessment Rept. 091175, 6 p., 5 appendices, 4 maps.
- _____ (1983b) 1983 magnetometer survey, soil sampling, and final part of heavy mineral sampling of the Bur property, Yukon; Can. Dept. Indian and Northern Affairs Assessment Rept. 091495, 24 p., 18 fig., 5 appendices.

- Halferdahl, L.B. (1984) 1984 exploration of the Bur property, Yukon (geological, geophysical, geochemical, overburden drilling, trenching); Can. Dept. Indian and Northern Affairs Assessment Rept. 091585, 21 p., 17 fig., 9 appendices.
- _____ (1986) 1985 trenching and drilling of the Bur property, Yukon; Can. Dept. Indian and Northern Affairs Assessment Rept. 01113, 2 p., 7 fig., 2 appendices.
- McGinn, G.J. (1967) Geological report. Cork group - Cork claims 1-12 inclusive; Can. Dept. Indian and Northern Affairs Assessment Rept. 019086, 5 p., 12 fig., 2 maps.
- Morrison, L.G. (1967) Report on the Glen mineral claim group of Alice Lake Mines Ltd. N.P.L. at Burwash Creek, Yukon Territory; Alice Lakes Mines Limited, Vancouver, 8 p., 2 fig., company report.
- Muller, J.E. (1967) Kluane Lake map-area, Yukon Territory (115G, 115F E $\frac{1}{2}$); Geol. Surv. Can. Mem. 340.
- Nelson, D.B. (1981) 1981 geological mapping and heavy mineral survey of part of the Bur property, Yukon Territory; Can. Dept. Indian and Northern Affairs Assessment Rept. 090891, 11 p., 3 appendices, 8 fig.
- Oddy, R.W. (1969) Geological report Cork claim group; Can. Dept. Indian and Northern Affairs Assessment Rept. 010988, 15 p., 2 appendices, 3 maps.
- Price, P. (1970) Hand specimens, Cork property, Yukon; Imperial Oil Enterprises Ltd., 5 p., company letter.
- Rampton, V.N. (1979) Surficial geology and geomorphology Burwash Creek, Yukon Territory; Geol. Surv. Can. Map 6-1978.
- Read, P.B. and Monger, J.W.H. (1976) Geology and mineral deposit maps of Kluane and Alsek Ranges, Yukon Territory (parts 115A, B, G), scale 1:50 000 and accompanying unedited report Pre-Cenozoic volcanic assemblages of the Kluane and Alsek Ranges, southwestern Yukon Territory; Geol. Surv. Can. Open file 381.
- Siega, L.J. (1973) Geological report on Mary mineral claims northwest of Whitehorse, Yukon Territory; Alice Lake Mines Limited, N.P.L., Vancouver, 6 p., 4 maps, company report.
- Smith, J.G. and MacKevett, E.M., Jr. (1970) Skolai Group in the McCarthy B-4, C-4, and C-5 Quadrangles, Wrangell Mountains, Alaska; U.S. Geol. Surv. Bull. 1274-Q
- Walcott, P.E. (1967) Preliminary report on a ground electromagnetic and magnetometer survey, Glen group, Burwash Creek, Yukon Territory; Alice Lake Mines Limited, Vancouver, 3 p., 2 maps, company report.
- Walker, A.J. (1955) Report of work on Teck claims, Duke River, Kluane Lake area, by Teck Exploration Co. Ltd. during 1954; Can. Dept. Indian and Northern Affairs Assessment Rept. 017462, 6 p., 2 maps.



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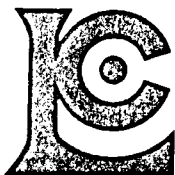
CERTIFICATE OF ANALYSIS

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 T6E 1X7

CERT. # : A8614492-001-A
 INVOICE # : I8614492
 DATE : 17-SEP-86
 P.O. # : NONE

Sample description	Prep code	Cu ppm	Mo ppm	Pb ppm	Zn ppm	Au NAA ppb	
5106	205	25	1	23	235	1	--
5107	205	380	11	1080	2050	<1	--
5108	205	43	10	2500	2700	<1	--
5109	205	142	7	193	435	<1	--
5110	205	148	4	24	118	<1	--
5111	205	54	2	100	215	<1	--

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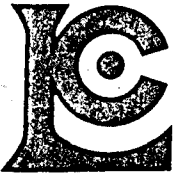
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CERT. # : A8614040-001-
INVOICE # : I8614040
DATE : 7-SEP-86
P.C. # : NCNE

Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Au NAA ppb	
INDIGC 080C	213	140	8	270	85	9	--
INDIGC 120CW	213	85	1	61	43	5	--
INDIGC 160CW	213	75	1	55	45	3	--
INDIGC 2000W	213	150	12	470	117	36	--
INDIGC EAST 1200	213	75	1	56	42	3	--
INDIGC EAST 1600	213	115	13	106	65	11	--
INDIGC EAST 1900	213	132	25	134	83	2980	--
JOYCE 100	213	88	5	81	108	245	--
JOYCE 500	213	52	1	74	85	80	--
JOYCE 900	213	73	1	72	80	2	--
JOYCE 1300	213	58	2	71	105	<2	--



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CERT. # : A8614623-001-
INVOICE # : I8614623
DATE : 27-SEP-86
P.C. # : NONE

Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Au ppb	NAA
INCIGO 0M	213	96	4	115	65	21	--
INDIGO 400M	213	100	2	138	63	35	--
SKY w. FCRK 100M	213	75	8	157	73	430	--
SKY w. FCRK 500M	213	82	5	181	98	18	--
SKY w. FCRK 900M	213	125	4	255	112	15	--
TED 200M	213	60	1	88	96	<1	--
TED 600M	213	68	2	90	82	<1	--
CHRIS 60M	213	26	1	83	126	29	--
CHRIS 195M	213	23	1	98	113	130	--
CHRIS 330M	213	48	1	134	380	31	--
FLYNN 80CS	213	183	3	90	78	16	--
FLYNN 400S	213	170	4	94	88	25	--
FLYNN C	213	330	10	114	70	49	--
FLYNN 40CN	213	175	2	98	61	39	--



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CERT. # : A8615249-001-A
INVOICE # : I8615249
DATE : 13-OCT-86
P.O. # : NONE

ATTN: L.B. HALFERDAHL

Sample description	Prep code	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Au NAA ppb	
BETZ 167	213	330	84	390	110	9750	--
BETZ 335	213	208	20	170	98	13	--
LORI 280	213	146	12	200	124	398	--
LORI 465	213	136	10	166	106	11	--
LORI 675	213	144	8	200	132	8	--
SAN 218	213	110	10	162	106	42	--
SAN 430	213	130	10	210	108	8	--

Certified by *Hart Biebler*

APPENDIX 3: FIELD AND OFFICE PERSONNEL

Field

G.M. Halferdahl, Sampler
 11539 - 73 Avenue
 Edmonton, Alberta
 T6G 0E2

11 days between
 August 12 and 26, 1986

L.B. Halferdahl, Geological Engineer
 11539 - 73 Avenue
 Edmonton, Alberta
 T6G 0E2

5 days between
 August 12 and 26, 1986

Office

L.B. Halferdahl, Geological Engineer
 11539 - 73 Avenue
 Edmonton, Alberta
 T6G 0E2

2 days in October, 1986

W. McGuire, Draftsman
 5307 - 145 Avenue
 Edmonton, Alberta
 T5A 4E9

12 hours in October, 1986

APPENDIX 4: QUALIFICATIONS

L.B. Halferdahl obtained degrees in geological engineering and geology from Queen's University and The Johns Hopkins University. He has had more than 30 years experience as a practising engineer and geologist in research and mining exploration, including consulting since 1969. He is a member of the Canadian Institute of Mining and Metallurgy, and is registered as P. Eng. and P. Geol. in the Association of Professional Engineers, Geologists, and Geophysicists of Alberta, and registered as P. Eng. in the Association of Professional Engineers of British Columbia.

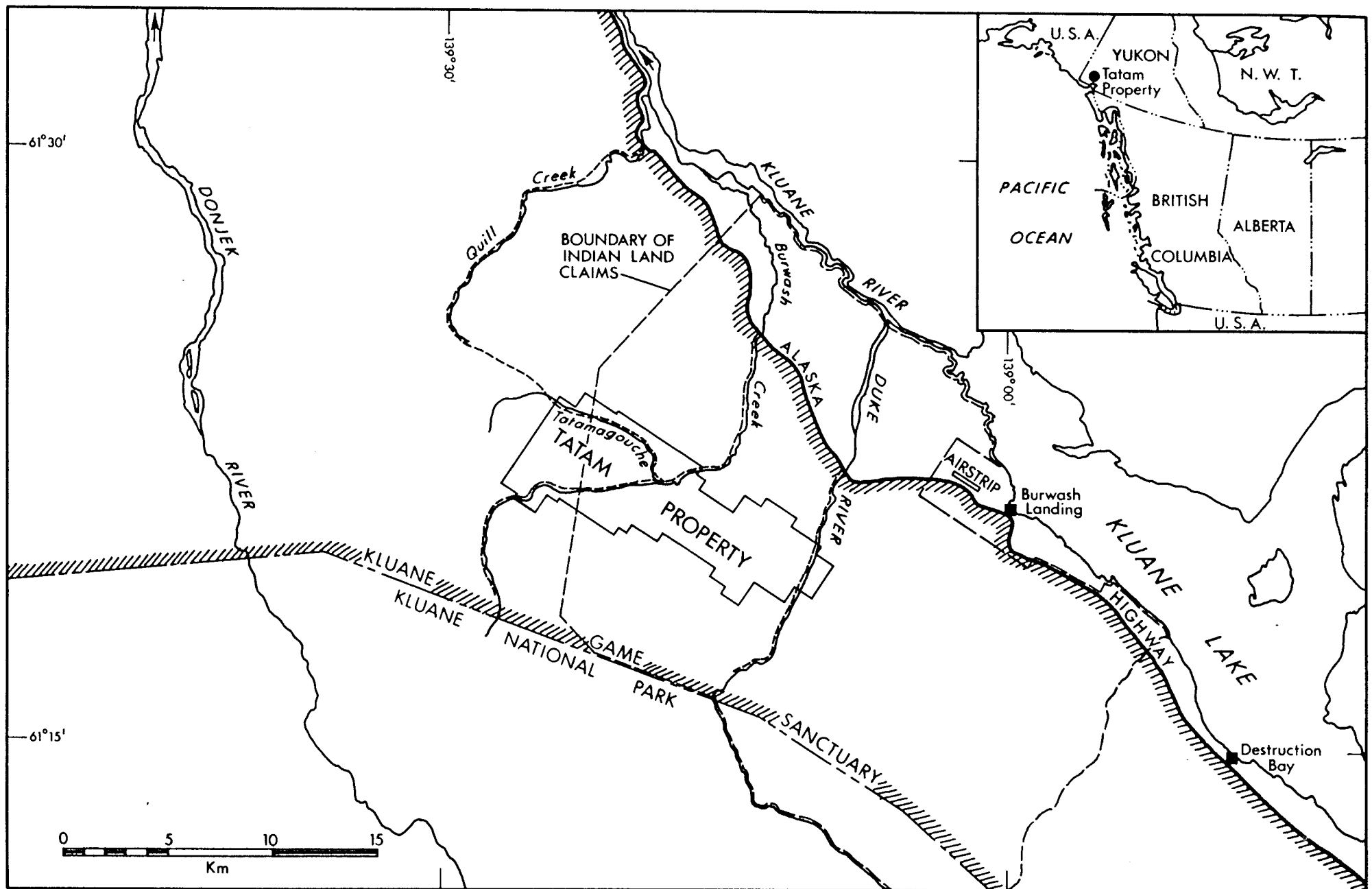
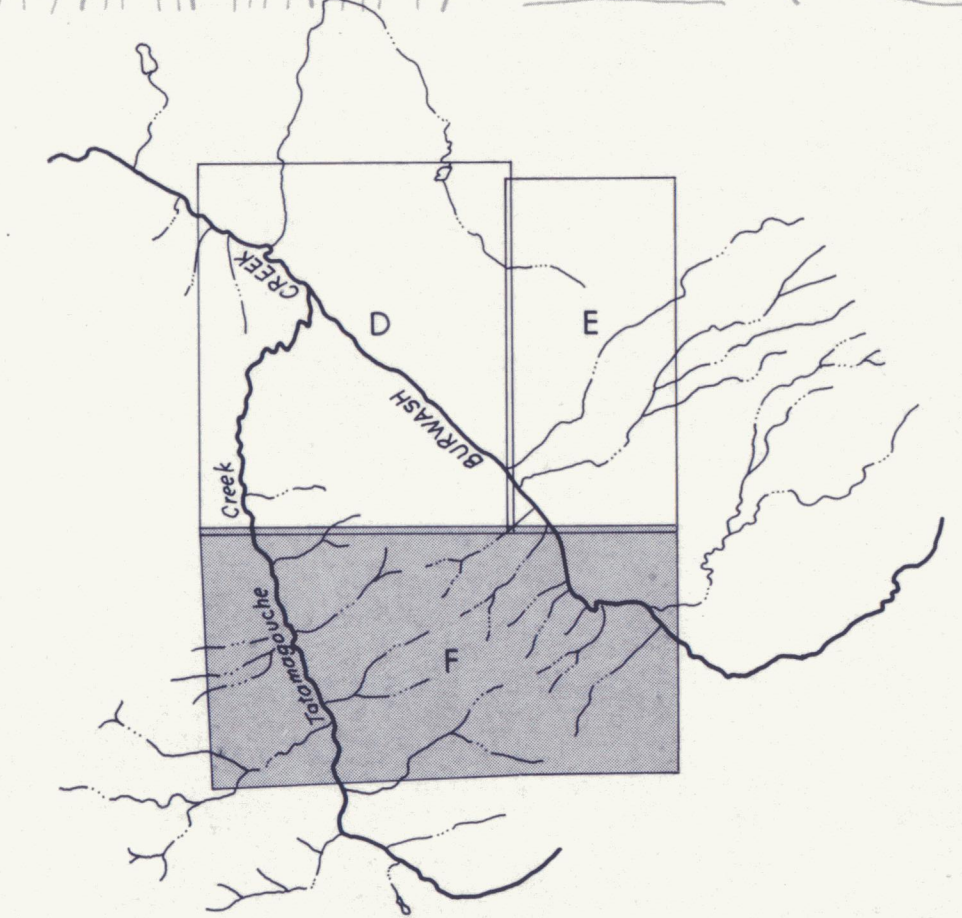


Fig. 1.1 Location and Index Map



- LEGEND**
- TERTIARY**
 Paleocene
 [Tpl] Laithe porphyry
- CRETACEOUS**
 [Kgd] Granodiorite
- UPPER TRIASSIC**
 [Rn] Nikolai Formation: basalt, conglomerate - cgl
- PERMIAN-TRIASSIC**
 [Pp] Peridotite [Pg] Gabbro
- LOWER PERMIAN**
 Skolai Group
 [Ph] Hasen Creek Formation: argillite - a, rusty weathering argillite - r, basic volcanics - bv, agglomerate - ag, tuff - t, dark tuff - td, chert - ch, limestone - ls, light tuff - lt, chert granule limestone - chls, black pyritic tuff - pbr, black tuff - bt, cherty tuff - tc, basic intrusion - bi
- Station Creek Formation:
 [Psc] Volcanic Member
 [Psf] Volcanic Flow Member
 [Psr] Rust Member
- SYMBOLS**
- Geological boundary, defined
 approximate
- Area of outcrop
 Isolated outcrop
- Strike and dip of bedding
 Fault (defined, approximate)
 Diamond drillhole with number
 Claim post
 Anticlinal axis
 Synclinal axis



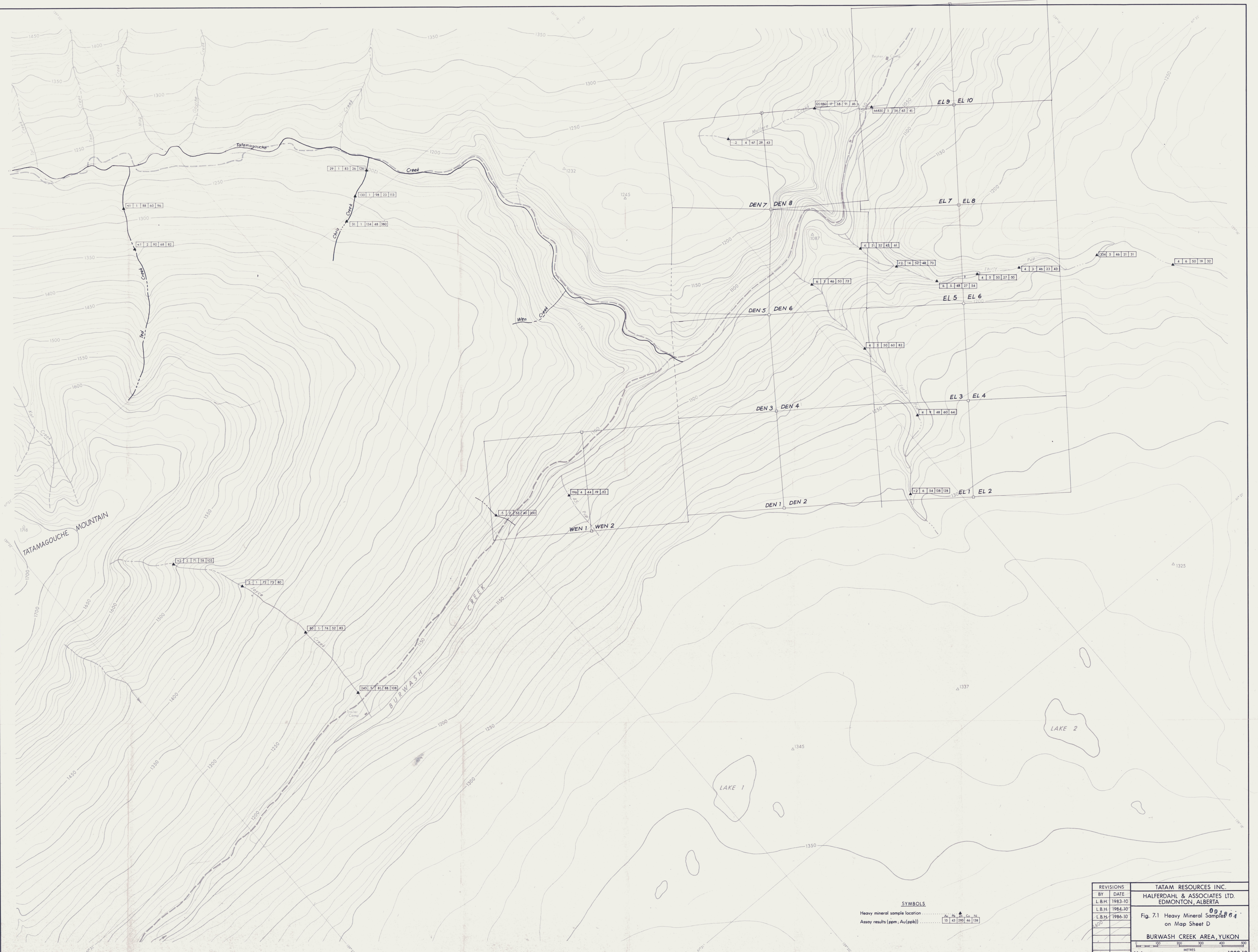
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091864
 Fig. 5-1 Geology of Map Sheet F

REVISIONS	BY	DATE
LBH		1984.10
LBH		1985.10
LBH		1986.10

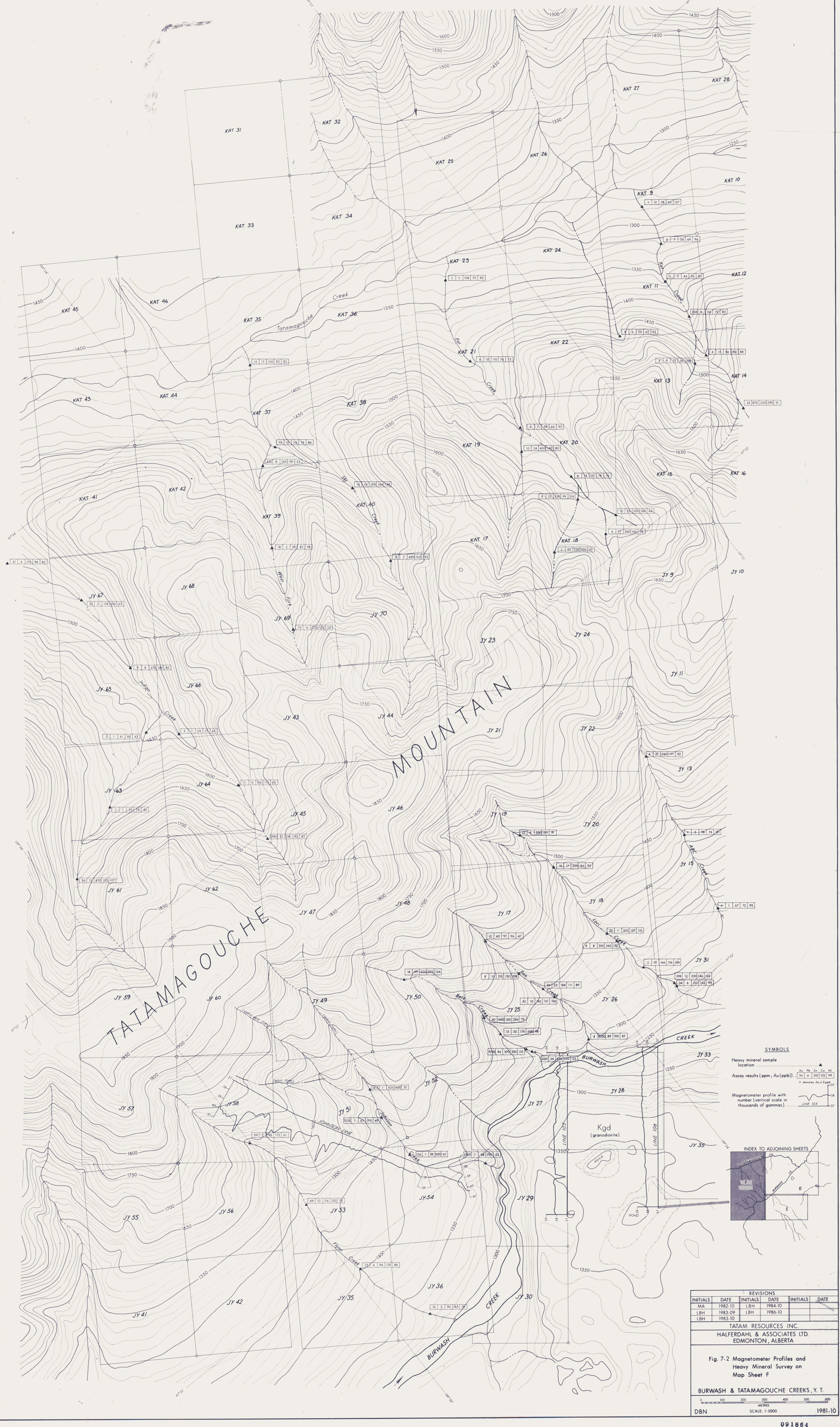
BURWASH CREEK AREA, YUKON
 Scale: 1:104000

0 200 400 600 800 METRES
 LBH SCALE: 1:5000 1984.04



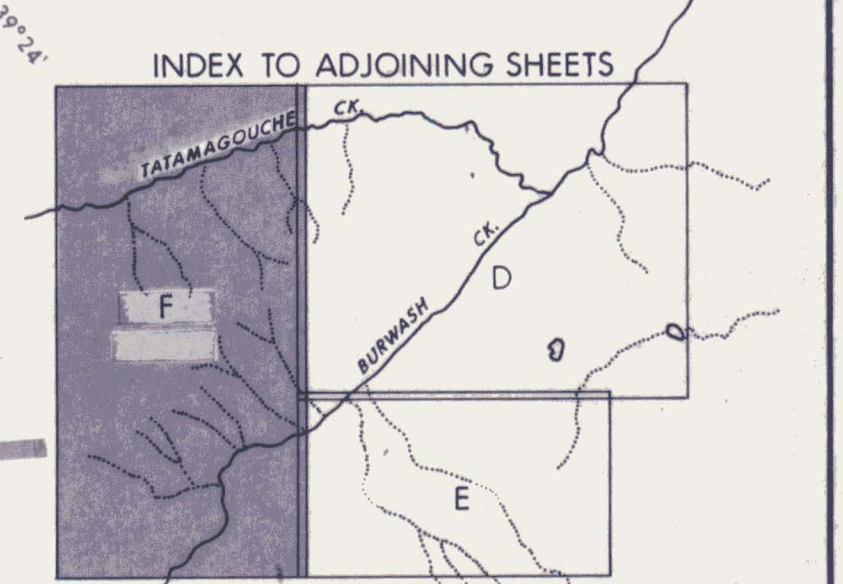
SYMBOLS
 Heavy mineral sample location
 Assay results (ppm; Au(ppb))
 15 43 295 46 138

REVISIONS	TATAM RESOURCES INC.
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L.B.H. 1984-10	091
L.B.H. 1986-10	Fig. 7.1 Heavy Mineral Samples 64
	on Map Sheet D
	BURWASH CREEK AREA, YUKON
	SCALE: 1:5000
MA	1982.10



SYMBOLS

- Heavy mineral sample location
- Assay results (ppm; Au (ppb))
- Magnetometer profile with number (vertical scale in thousands of gammas)



REVISIONS					
INITIALS	DATE	INITIALS	DATE	INITIALS	DATE
MA	1982.10	LBH	1984.10		
LBH	1983.09	LBH	1986.10		
LBH	1983.10				

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Fig. 7-2 Magnetometer Profiles and Heavy Mineral Survey on Map Sheet F

BURWASH & TATAMAGOUCHE CREEKS, Y. T.

0 100 200 300 400 500 600
METRES
SCALE: 1:5000

DBN 1981.10

COST STATEMENT FOR 1986 TECHNICAL EXPLORATION
OF THE BUR PROPERTY



FIELD EXPENSES

Personnel

G.M. Halferdahl	11 days @ \$135.00	\$1485.00	
L.B. Halferdahl	5 days @ \$350.00	<u>1750.00</u>	\$3235.00

Food and Accommodation

16 man-days @ \$17.78			284.48
-----------------------	--	--	--------

Transportation

4X4 truck rental and gas	720.71		
Freight on samples	<u>26.55</u>		
			747.26

Equipment Rental

MP-2 magnetometer			100.00
-------------------	--	--	--------

Analyses

32 panned samples separated and analyzed for Cu, Pb, Zn, Ni, and Au @ \$25.30			809.60
--	--	--	--------

Long distance telephone

35.84

REPORT PREPARATION EXPENSES

L.B. Halferdahl, engineer	2 days @ \$350.00		700.00
W. McGuire, draftsman	12 h @ \$27.00		324.00
Typing, reproduction, assembly			<u>195.00</u>
			\$6431.18