



REPORT ON
GEOLOGICAL MAPPING
AND SOIL TESTING SURVEY
AUGUST 24 TO SEPTEMBER 3, 1981
AND
JUNE 1 TO AUGUST 24, 1982

TURK 1 - 96 CLAIMS
TESLIN JOINT VENTURE
DAWSON MINING DISTRICT, Y.T.
CLAIM SHEET 116 C/7



LATITUDE 64 29'N

LONGITUDE 140 48'W

This report has been examined by
the Geological Survey of Canada
under Section 53 of the Geological
Act and the following amounts
represent the value of the account
of \$ 33,600 -

R. Watson

for the Geological Survey of Canada and
Geological Survey of Canada
of Yukon Territory.



FROM: Mining Recorder at DAWSON

TO: Supervising Mining Recorder at Whitehorse, Y.T.



FOR ACTION ARE:

NEW APPL'N for PLACER LEASE to PROSPECT: Name: _____

RENEWAL APPL'N PLACER LEASE to PROSPECT: Name: _____ Lease No. _____

AFFIDAVIT of EXPENDITURE on PLACER LEASE. Name: _____ Lease No. _____

ASSIGNMENT of PLACER LEASE No. _____
From: _____ To: _____

POWER OF ATTORNEY FOR PLACER LEASE NO. _____ FROM: _____ TO: _____

GROUPING APPL'N UNDER SEC. 52(2) PLACER MINING ACT.
Owner: _____

DIAMOND DRILL LOGS:
Claims: _____ Claim sheet no: _____

QUARTZ ASSESSMENT REPORT:
Claims: _____ Claim sheet no: _____

Type of report: linecutting, sampling analysis and mapping Submitted by: Archer Catbro

Cls. work performed on: TURK Claims \$ Req. for ren. application 33600⁰⁰

Signature _____
Date Ret. _____

REPLY ACTION:

090959

Signature _____

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INTRODUCTION

The Turk 1 - 96 claims were staked for Teslin Joint Venture (Brinco Mining Ltd., Cominco Limited and Exploram Minerals Ltd.) during August 1981. They cover several poorly exposed serpentinite bodies which are situated northwest of the Clinton airstrip, about 5 km northwest of the Clinton Mine.

The ultramafites are marked by loose, serpentinite talus but are surrounded by thick, clay-rich alluvium except along the banks of Easter Creek. An intense aeromagnetic anomaly is shown on government maps and extends across the north end of the Clinton airstrip for at least 2 km to the west. In spite of the close proximity of the Clinton Mine, the asbestos potential of this area has never been thoroughly explored although some trenching was done at the north end of the airstrip about 1967, and a ground magnetic survey was performed over the Turk ultramafite about 1970. The majority of the ultramafites are less exposed than either of these areas and have no history of physical work.

The TJV program consisted mainly of grid soil sampling, linecutting and geological mapping, although some trenching was done late in 1982. Work was conducted from the Clinton Creek townsite and daily transportation to the property was by helicopter and by Ford Econoline van.

The Archer, Cathro crew in 1981 consisted of party chief J. S. Murray, geologist J. Ryan, linecutters S. Beckmann and G. Stewart and soil samplers M. Luxmoore and D. Lister. In 1982 the crew consisted of party chief J. S. Murray, geologist C. Main and linecutter/samplers S. Beckmann and T. Carlson.

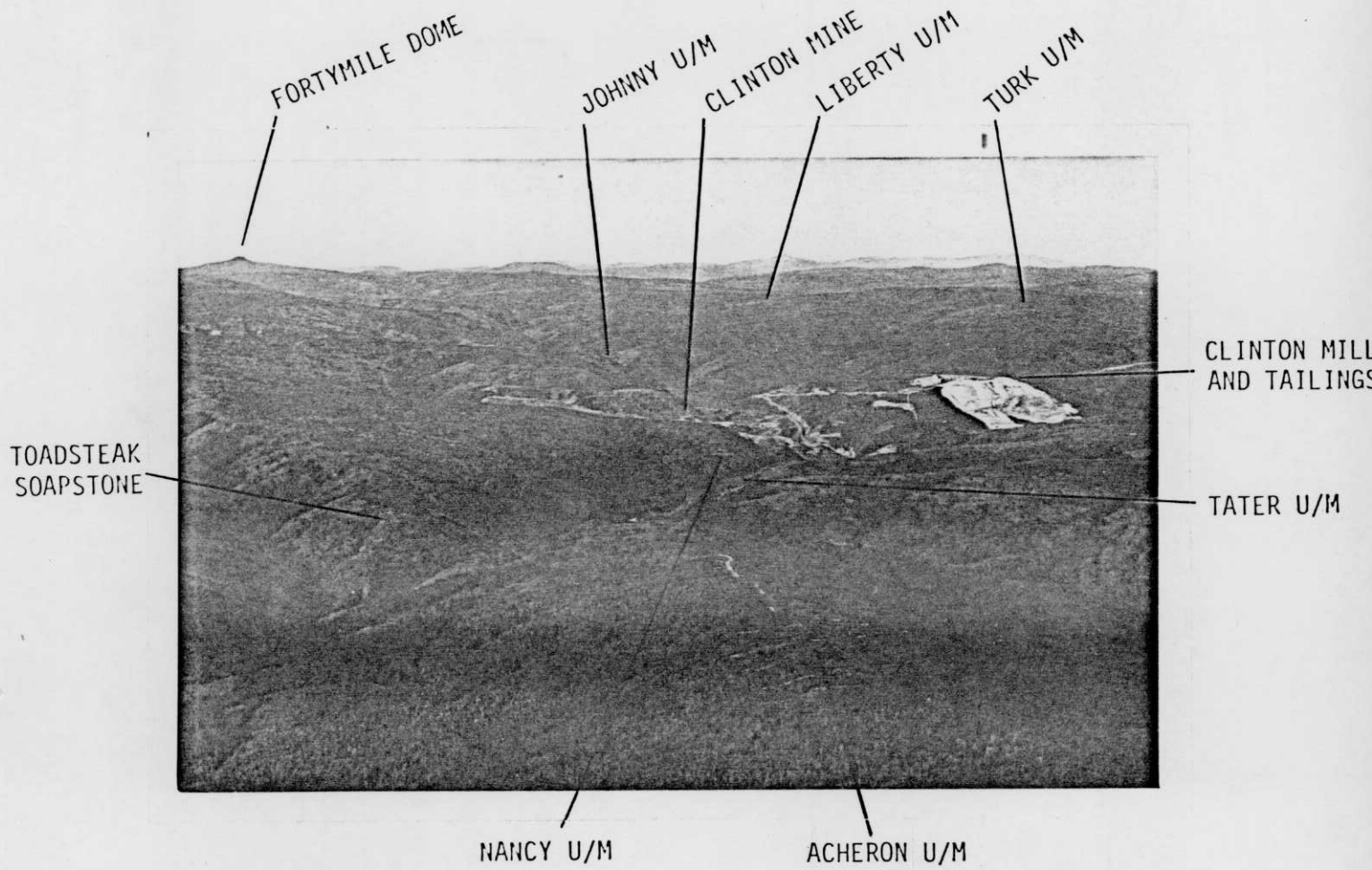
PROPERTY, LOCATION AND ACCESS

This property is situated on the north side of Clinton Creek approximately 5 km northeast of the Clinton minesite, at 64 29'N and 140 48'W. It consists of 96 contiguous mineral claims that were recorded in the name of Archer, Cathro & Associates (1981) Limited in the Dawson Mining District as follows:

<u>Claim Name</u>	<u>No. of Claims</u>	<u>Record Numbers</u>	<u>Expiry Date</u>
Turk 1-16	16	YA64503-18	24 Feb 86
17-64	48	YA64451-98	24 Feb 86
65-96	<u>32</u>	YA64531-62	24 Feb 86
	96		
	==		

In 1981, a Bell 47 G3/B2 helicopter, on charter from Trans North Turbo Air of Whitehorse, was used for crew transport to the most remote parts of the claims and a Ford Econoline Van was used when working near the mine haulage road. Helicopter landing sites were cleared at many locations for access.

In 1982, a Ford 4x4 pickup was used for transportation and a Kamatsu bulldozer, contracted from L. Beck of Clinton Creek, was used for trenching.



CLINTON CREEK, LOOKING NORTHEAST

HISTORY AND PREVIOUS WORK

The presence of asbestos in the Clinton Creek area had been known since before 1887, when the rumours were reported by the G.S.C.; however, the first asbestos property recorded was located on the west bank of the Yukon River, about 3 km south of Fortymile. This showing was staked initially in 1895, restaked as the Aurora claims in 1912 and subsequently restaked as the Verlene claims in 1928. The 1912 claim application stated that this was an asbestos occurrence. Chrysotile fibre up to 5 mm long occurs at this locality. It is associated with fibrous tremolite in two small, highly sheared, ultramafite bodies, one of which is capped by Tertiary columnar basalt. Much of the chrysotile is slip fibre and total fibre content is less than 1%. The showing has no current economic potential.

Exploration and development of the Clinton Mine was conducted independently of other exploration in the Clinton Creek basin and began with the optioning of the Caley and Clinton asbestos discoveries by Conwest. The discovery outcrops on Snowshoe Hill were first staked in April, 1957 by prospectors G. Walters and A. Anderson, who were grubstaked by Fred Caley, a Dawson merchant. Caley had optioned claims covering the Caley asbestos deposit on Cassiar Creek to Conwest the previous year and was successful in stimulating interest in asbestos exploration among residents of the Dawson area.

Caley's Clinton Creek claims were optioned by Conwest soon after they were recorded and were transferred to an affiliate, Cassiar Asbestos Corp. Ltd., late in 1957 following prospecting and hand trenching. Cassiar explored with trenching, diamond

drilling and two adits (250 m) in the main (west) zone on Porcupine Creek and a 365 m adit on a smaller zone 300 m to the east on Snowshoe Hill in 1957-58. Initial tunnelling however, failed to locate the main orebody on Porcupine Hill and it was not until a fluxgate magnetometer survey was performed in 1961, that the major portion of the Porcupine ultramafite was outlined.

The property remained idle until 1963 when about 45 surface diamond drill holes and 29 underground holes tested the magnetic anomaly and led to the discovery of the orebody. A feasibility study was completed about 1965 and mining commenced in April, 1967. The mine recovered more than 15.5 million tonnes of ore grading about 5.9% fibre from the Porcupine and Snowshoe open pits which produced more than 910 thousand tonnes of asbestos by mine closure on August 19, 1978.

Outside the mine property, some of the most aggressive early grass-roots exploration was conducted by a joint venture between Asbestos Corp. Ltd. and Yukon Consolidated Gold Corp. Ltd. (Y.C.G.C.), which carried out an aeromagnetic survey of the Clinton Creek valley in early 1957 and staked many magnetic anomalies and exposed ultramafites near the Clinton Mine. By 1964, the joint venture had performed grid magnetometer surveys and mapping on several ultramafites, including some of those now covered by the Turk claims; trenching on the Acheron target, located about 7 km to the southeast; and diamond drilling on the Foxy target, located about 1 km east of the Clinton airstrip.

Drilling on the Foxy claims consisted of two holes, each about 125 m deep and roughly centering on an aeromagnetic target. Serpentinite was intersected in both holes beneath about 15 m and 60 m of graphitic argillite, respectively. No ultramafites are known to outcrop in this area and further drilling was not performed because of low fibre contents in the cores recovered.

Later exploration near the Turk claims included an aeromagnetic survey and follow-up ground magnetic surveys in 1966 and 1967 by Sphere Development Corp. Ltd. and bulldozer trenching on an ultramafite located at the north end of the Clinton airstrip by Voels International Development Ltd. in 1967. A magnetometer survey of these ultramafites was also performed by Cassiar Asbestos Corporation Ltd. about 1970 although no physical work was performed.

GEO MORPHOLOGY

The Turk claims are situated within the unglaciated portion of the Yukon Plateau which is marked by poor bedrock exposures. Regional uplift in the late Tertiary, together with disrupted drainage patterns to the east caused by glacial advance in the Pleistocene from the Ogilvie Mountains, has resulted in substantial rejuvenation and some disruption of the drainage system. Major tributaries, such as Clinton Creek, are incised into steep, V-shaped valleys with low gradients and steep headwalls.

The Turk claims cover all three elements of terrain in this district - plateau, incised valleys, and alluvial terraces. Gravels resembling the Klondike White Channel Gravel are present at about 700 m elevation on the Clinton Mine lease and are present on the Turk claims near the Clinton airstrip at similar elevations. Clay is common in overburden below the 700 m elevation and may be alluvial in origin. Vegetation consists of thick black spruce, alder, aspen and poplar. Permafrost occurs on some moss-covered, north-facing slopes.

Locating and mapping ultramafites on the property has been difficult even though some targets like the Turk ultramafite are marked by a conspicuous lack of vegetation. At least five areas on the claims up to 100 m across are covered only by grass and a few stunted trees because plants do not grow well in ultramafite soils. Before TJV, all of the ultramafites in the Clinton Creek basin, except the Foxy, were initially mapped according to the size of the vegetation anomalies covering them. However, so much of the area is covered by fertile, clay-rich alluvium that using vegetation patterns as a mapping tool has been found unreliable.

Outcrops are rare and most ultramafite exposures consist of some highly weathered serpentinite fragments scattered across vegetation anomalies; sometimes with a few boulders showing through the soil cover. The best exposures are some widely spaced outcrops measuring only a few meters across at the Turk ultramafite and a few small outcrops along Easter Creek, particularly where some old trenches have removed the overburden.

REGIONAL GEOLOGY

The Clinton Creek camp is situated within the Yukon Plateau and is sharply bounded to the northeast by the late Cretaceous Tintina Fault. The district has a complex geological history resulting from tectonic activity that has thoroughly deformed and intermixed several major rock assemblages. Ages are difficult to estimate since the fossil record has mainly been obliterated by deformation and regional metamorphism and contacts are obscured by overburden cover.

Rocks in this region have been subdivided by government geologists into three major packages: Nasina Suite (OSD); Anvil Allochthon (CPv); and, Klondike Schist (LPK). In the continental collision model proposed by Tempelman-Kluit (1979), the Nasina Suite represents the North American plate margin material. The Anvil Allochthon and Klondike Schist represent seafloor material and continental "Stikinia" plate rocks obducted onto the North American plate during a collision in Jurassic(?) time. The thrust faulting associated with the collision resulted in complex interfingering of the three units, destruction of sedimentary features and development of new cataclastic textures.

Anvil Allochthon

The allochthonous overthrust block consists of an ophiolite suite composed of alpine-type ultramafite, gabbro, basalt, chert and limestone. In the Clinton Creek camp, these rock types are usually present as their metamorphosed equivalents: serpentinite with associated hornblende diorite,

amphibolite, and chlorite schist. The ophiolite assemblage has become highly dismembered by thrusting and most serpentinite bodies are enveloped in graphitic schists of the Nasina Suite.

The ultramafites (CPub) are typically fairly small bodies composed of massive, dark green, fine to medium grained magnetic serpentinite derived from both peridotite and dunite. Most of them are highly sheared, reflecting a stressful emplacement, and are enclosed in metamorphosed host rocks. No relationship has been established yet to link the metamorphic grade of surrounding rocks to fibre development within serpentinite. However, it seems probable that strong shearing in the wall rocks is important in creating islands of unsheared serpentinite within which tensional fracturing and fibre veins can develop.

Cross fibre veins in commercial-grade mineralization seldom show straining or strong disruption except within localized shear zones, indicating they formed at a late stage in the emplacement and alteration of the ultramafite. In the Clinton Creek and Caley orebodies, blocky fracturing with commercial fibre lengths and quantities constitute less than 10 per cent of the serpentinite. These zones are surrounded by sheared varieties of serpentinite such as fish-scale that are typical of other bodies in the camp.

Some serpentinite bodies contain augen-like bodies of relic, massive serpentinite or lens-shaped bodies of diorite. A few of the massive lenses, such as those at the Tjop property, contain cross fibre veins that may have formed during or shortly after emplacement. Some of the fibre veins near the edges of these bodies are highly deformed and drawn out.

Similarly, fibre veins that formed in the blackwall alteration zones surrounding diorite lenses (black pods), such as those at the Toc property, often exhibit curved veins and chrysotile fibres that are bent in the direction of movement. Both types of bodies are usually too widely dispersed through a sheared serpentinite to have economic importance.

The margins of many serpentinite bodies are altered to soapstone; for example at the Tjop and Tiza properties. This suggests that temperatures exceeded 400 deg C for a short period after emplacement, probably during regional metamorphism. Quartz-carbonate alteration, which consists of magnesite, talc and opaline silicates, is common and is probably also a post-mineralization event since the alteration is sometimes pseudomorphic after chrysotile fibre. Transformations from serpentinite to quartz-carbonate are displayed best in the Clinton Creek Mine, where long fibre veins can occasionally be traced from serpentinite into highly altered rock. This is a gradual change from silky chrysotile to harsh opal along the veins and is not accompanied by physical disruption.

Fine to medium grained, light grey to dark green, biotite or hornblende-rich diorites occur along with the ultramafites at several locations and are usually considered to be part of the Anvil Allochthonous suite. The diorites occur as small lens-shaped bodies or "dykes" that are enclosed by serpentinite and often are associated with black-pod mineralization, as at the Toc property. Alternatively, diorite forms large, stock-like bodies up to several metres across adjacent to the ultramafites, as at the Tjop property. Contacts between the larger bodies of diorite and serpentinite are usually altered

to quartz-carbonate, whereas the smaller dykes usually exhibit "blackwall" alteration. This suggest that the diorites are slightly younger than the ultramafites. The smallest dykes are usually enveloped by highly sheared serpentinite and appear to have been squeezed and dismembered into their present lensy form by strong tectonic forces.

Nasina Suite

The Nasina suite has been defined by Tempelman-Kluit (1976) as a distal sequence of carbonaceous and quartz-rich sedimentary rocks. They have been mostly metamorphosed to greenschist facies and now consist of palegreen quartz-mica-chlorite schist, grey to silvery colored quartz-muscovite schist, graphitic schist, chloritic quartzite and minor quartz-biotite gneiss. Although the sequence is not well understood and correlations are difficult to establish, a tentative age of Ordovician to Devonian has been assigned to the Nasina. Rubidium/strontium and potassium/argon age determinations by Htoon (1979) near the Clinton Mine suggest a Permian age, although one sample of biotite schist returned a rubidium/strontium age of 470 ma, which is Ordovician. The younger dates may reflect the date of latest metamorphism or of regressive (biotite to chlorite zone) metamorphism, while the Ordovician date may reflect the age of deposition or of earlier metamorphism.

Preliminary mapping by J.G. Abbott of DIAND in the vicinity of Clinton Mine during 1981 revealed the presence of slightly metamorphosed carbonaceous mudstone, limy sandstone and tuffaceous phyllite that he tentatively assigned to the Nasina suite. These rocks probably represent the unmeta-

morphosed equivalents of the common Nasina suite rocks. They resemble rocks mapped elsewhere in Yukon that are Triassic in age and fossil conodonts tentatively identified from Clinton Mine rocks in 1982 support this assumption. Abbott demonstrated fairly conclusively that the Nasina suite underlies the allochthonous assemblage and concluded that the graphite schist adjoining the orebody was derived from Nasina rocks.

Klondike Schist

The Klondike schist is a cataclastic rock that is thought to be derived from felsic intrusive rocks. In the Clinton Creek camp, quartz-rich cataclastics, gneisses and quartz-muscovite cataclastic schist are common. Age relationships are difficult to determine as the Klondike schists cannot be related to other rock units. Radiometric ages of 138 and 145 ma were obtained from samples of cataclastic material by Tempelman-Kluit (1976). These dates are late Jurassic and probably reflect the time of cataclasis.

Igneous Rocks

Igneous rocks in the belt consist of lower Cretaceous biotite granodiorite and quartz monzonite and Tertiary feldspar porphyries. These have been combined for simplicity on Figure 3 as unit Tqfp but are differentiated on GSC Map 1284a. One of the largest quartz monzonite stocks in the district is located about 2 km west of the Tjop claims. It consists of plagioclase, biotite and altered grains of hornblende with minor amounts of potash feldspar, quartz and magnetite. Granitic gneiss and amphibolite have developed along contact zones. The eastern

contact of this body was explored for tungsten mineralization by Noranda during 1981.

Small bodies of feldspar porphyry occur throughout the region. These rocks are characterized by phenocrysts of feldspar and quartz up to several mm in length in a light grey to grey-green, fine grained groundmass. One of the largest of these porphyry bodies, on Cassiar Dome, was staked by Cominco for molybdenum-tungsten potential as the Pluto claims and was drilled in 1981. A porphyry dyke at the southeast corner of the Tjop claims was staked in 1927 for sulphide mineralization as the Roal occurrence. Also, basalt associated with a small porphyry dyke on the Thane grid area was found to contain traces of uranium mineralization. The porphyry bodies are probably more numerous than was previously known and some may host important base metal mineralization.

Olivine basalt (Tv) occurs locally in the region and is probably the youngest rock type as it overlies all other units.

References

- Htoon, M.
1979: Geology of the Clinton Creek asbestos deposit, Yukon Territory; unpublished M.Sc. Thesis, University of British Columbia.
- Tempelman-Kluit, D.J.
1976: The Yukon crystalline terrane: Enigma in the Canadian Cordillera; Geological Society of America Bulletin, v. 87, pp. 1343-1357.
1979: Transported cataclasite, ophiolite and granodiorite in Yukon: Evidence of arc-continent collision; G.S.C. Paper 79-14.

GEOLOGY AND MINERALIZATION

The Turk claims are mainly underlain by low grade metamorphic rocks and cataclastic rocks of the Nasina Suite and Anvil Allochthon, respectively. The ultramafites consist of partially to highly sheared serpentinite bodies with abundant fish scale surrounding competent portions. Quartz carbonate alteration of the serpentinites is common throughout the area. Many of the serpentinites are light green, contain abundant bastites and generally resemble the ultramafites that make up the footwall of the Porcupine orebody at the Clinton Mine. Some boulders on the Turk ultramafite however, exhibit large, glassy pyroxene crystals indicating that not all ultramafites on the property are completely serpentinitized.

Rocks that surround the ultramafites mainly consist of graphitic schist, quartz-muscovite schist and chlorite schist. Small outcrops of schist occur along Easter Creek and fragments of schist have been seen paving shallow creek channels and in soil pits throughout the area. Like the ultramafites, these rocks weather recessively and are generally covered by alluvium throughout most of the region.

The Turk claims were staked to cover the vegetation anomalies as well as several large areas that contain high concentrations of asbestos fibres in the soil. Soil studies have shown that fibres up to 5mm long are dispersed in soils throughout the area although very few fibre veins have been seen while prospecting because of the highly weathered nature of the ultramafite scree. Fibre veins tend to break up readily when exposed to the harsh climate of the Yukon and only the

enclosing serpentinites persist on the surface of the ground for many seasons. This phenomenon is best seen at the Clinton Mine where a thick fibre mat has developed on the pit floor and specimens of ore with intact fibre veins are difficult to find only four years after mine closure.

Two old asbestos showings are present on the east bank of Easter Creek less than 200 m inside the boundary of the Turk claims. Both showings are exposed by some bulldozer trenches that were made about 1967 in an ultramafite body that is at least 100 m thick and dips about 30 degrees to the east beneath graphitic schists.

The uppermost showing is called the Airport showing and is located about 300 m from the north end of the Clinton airstrip by road. At the Airport showing, the mineralization consists of a few fibre veins up to 10 mm wide next to a 1 m wide blackwall alteration envelope surrounding a diorite body about 5 m long and 2 m wide. This zone grades about 1% along strike and has no economic potential.

The second showing occurs close to the valley floor about 100 m west and 50 m lower in elevation than the first. The fibre occurs in a light green, moderately sheared serpentinite and no diorites were seen at this location. Compound fibre veins up to 10 mm wide containing fibres up to 6 mm long occur in a few widely spaced gash veins up to 30 mm long. The fibre content of the rock is about 1% where exposed and the quality of the fibre present is good. There is some potential for better mineralization at depth.

SAMPLING AND TRENCHING

Soil sampling grids were established throughout the Turk claims area in 1981 and 1982 to investigate anomalous silt and

soil responses from reconnaissance traverses performed earlier. On the claims, about 2400 soil and silt samples were collected at 50 m spacing on compass lines 200 m apart. About 28 km of baselines were cut for survey control. Four large anomalies were outlined by the sampling and one of these was investigated with two bulldozer trenches, as shown on figure 3 in pocket.

SAMPLING AND TRENCHING RESULTS

Anomalies I and J are two irregular patches of anomalous soil values consisting of 25 samples each in the south-central part of the grid. Anomaly I is situated on the steep, south-facing bank of Beaver Creek, while Anomaly J occurs on a gentle slope about 200 m north. No bedrock information was obtained within either anomaly.

Both anomalies consist of low to moderate quantities of fibre with point scores up to 86b. Scores are highly variable, however, resulting in patterns much like those on the Toadsteak claims that have been interpreted as caused by air contamination as the millsite is located only 3 km to the east. Surrounding samples, particularly on the opposite side of Beaver Creek, contain even less fibre, however, suggesting that the fibre could be derived from an ultramafite buried under thicker soils. Careful resampling of the best soils at depth is necessary for confirmation of the values.

Anomaly K is centered just to the east of a prominent vegetation anomaly at the head of Beaver Creek. The vegetation feature surrounds two gentle ridges composed of serpentinite. Outcrops are rare and the largest, on the easterly ridge, is

about 30 by 5 m in size. Boulders up to 1 m across occur sporadically on the ridges. The serpentinite is generally massive to partly sheared and contains minor veins of picrolite up to 5 mm wide. Some of the serpentinite also contains glassy crystals of pyroxene up to 10 mm across, similar to rocks seen at the Eagle property in Alaska, and some large magnetite grains up to 3 mm wide. No fibre veins were seen in any of the rocks examined.

The anomaly is divided into three sections by intervening soils containing lesser point scores. The northern section is a cluster of about 20 samples and covers the bulk of the eastern ridge. Point scores of up to 62a are present but most scores are about 30a. The average fibre length of all samples is 3 mm. High quantities of fibres in most samples confirm the observation that thin soils cover this part of the ultramafite. The northern section of Anomaly K is a good target and warrants serious investigation.

The southern portion is an oblong patch of about 15 samples with extremely erratic point scores. The best score of 189b occurs near the center of the cluster but scores of 71a and 460d (7.4 mm) are present at the west and east ends, respectively. This part of Anomaly K occurs downslope from the ultramafite on the east ridge and could be caused either by solifluction or by an ultramafite underlying the thicker soils.

The small eastern section consists of seven, low quantity samples that have scores up to 99 points with mostly "d" quantities. Thick, clay-rich soils occur in this area and the low quantity values could be a weak expression of good mineralization deeply buried nearby.

Anomaly L is a very large pattern of anomalous soils that follow Easter Creek for more than 2 km and a western tributary for nearly 1 km. The anomaly is open to the northeast. The south end lies just north of the airstrip and the Easter Showing. The area is deeply incised by the creek and several small vegetation anomalies occur along its banks. Most are underlain by partly to highly sheared serpentinites and are associated with high quantities of fibre.

The best part of the anomaly occurs toward the north end, where soils contain fibre mat quantities and lengths up to 11.5 mm. One sample scored 169a points. Scores this high are extremely anomalous. The sample was collected from a faint vegetation anomaly about 100 by 50 m across that had not been previously prospected.

Trenching by TJV in this area during 1982 did not uncover any significant asbestos mineralization. A blackwall alteration zone less than 1 m wide surrounding a 2 m long diorite body contained a few asbestos veins and weathered out fibres up to 10 mm long had formed a mat about 3 cm thick covering the zone. The serpentinites in the trenches are mainly sheared and fish scaled with a thick envelope of reddish-brown quartz carbonate along the south margin. This rock contacts graphitic schists on the south side where trenched.

Other soils scored as high as 50a along the west tributary and those from the south scored up to 137b. The broadening of the anomaly to the south is probably caused by the widening of Easter Creek in this region. Soils with lower quantities on the ridges could be caused by airborne contamination.

SUMMARY AND RECOMMENDATIONS

The Turk claims were staked to cover several poorly exposed ultramafite bodies as well as some broad overburden covered areas that contain anomalous concentrations of asbestos fibres in the soil. The claims are mainly situated on the west side of Easter Creek, about 5 km northwest of the Clinton Mine.

Soil studies were performed during 1981 and 1982 using a sampling technique pioneered by TJV. Although the area is located close to the Clinton mine and has been staked several times since 1957, very little physical work has been done to evaluate the asbestos potential of this area; mainly because the ultramafites are poorly exposed and rock fragments on the surface of the ground contain no fibre. Soils tested by TJV however, contain fibres up to 11.5 mm long and the best fibre anomalies occur within four areas that are covered by overburden and were difficult to prospect earlier.

During 1982, two bulldozer trenches were made at Anomaly L which uncovered a weakly mineralized zone within sheared serpentinites. Only small portion of this anomaly was exposed however, and Anomalies I, J and K were not trenched at all.

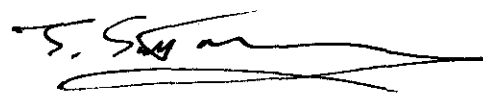
A two week program of bulldozer trenching or rotary drilling is recommended to test the bedrock beneath the best soil anomalies.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LIMITED



R.J. Cathro, B.A.Sc., P. Eng.



J. Scott Murray

APPENDIX 1

APPENDIX 1
FIBRE DISPERSION SURVEYS

THEORY

Fibre dispersion surveys take advantage of the fact that chrysotile is chemically resistant to weathering and maintains its fibrous integrity during weathering and erosion. Thus, fibre can be detected in soils whether it is being dispersed by normal residual erosion in unglaciated areas, such as the Clinton Creek camp, or by glacial scouring. Experience has shown that chrysotile fibre is so much more resistant to weathering than its host serpentinite that it can be found in soil in areas that are devoid of obvious serpentinite outcrops or talus.

In theory, the amount of fibre in the soil should be directly proportional to the amount of underlying mineralization, since the bulk of the fibre occurs in simple veins that break apart readily when subjected to weathering. Like conventional geochemical surveys, however, simple dispersion patterns and strongly anomalous contrasts only occur around buried fibre occurrences that are covered by simple soil profiles. TJV sampling has shown that all serpentinite bodies contain fibre and that even those that are apparently unmineralized have a low background level that is detectable in soil.

Fibre veins pinch and swell, and are usually divided along their length by a central parting. Weathering of chrysotile mineralization frees fibre veins from the walls and breaks their partings, causing the veins to disintegrate into rod-shaped fragments called fibre bundles (or spicks). Further weathering will cause these bundles to split lengthwise into thinner strands called fibrils. Experience has shown that individual fibrils are unusually strong and that they will seldom break transversely, although they can split longitudinally into thinner fibrils.

In soils, the longest fibrils reflect the maximum width of veins between partings, but seldom the distance between the vein walls.

Much of what is known about the relationship between length and quantity in a fibre deposit has come from milling practise. TJV has assumed that the weathering of fibre is analagous to the milling of fibre to produce a commercial blend of lengths. Milling experience has shown that fibre lengths in a deposit are inversely proportional to the quantity of short fibres, and that the total quantity of fibre in the rock is roughly proportional to fibre length. This suggests that, under most conditions, the number of fibre veins that develop in a block of serpentinite is fairly constant and that the main variable is fibre length (vein thickness). Thus, if conditions are favourable, longer fibres will form in many of the fractures, thereby increasing both the average length (and value) as well as the proportion of the rock that is fibre (ore). When conditions are unfavourable, only short fibre will form and the total fibre content of the rock will remain low. The validity of this concept is confirmed by the fact that long fibres are seldom found in lower grade ores.

The laboratory technique and interpretation methods used by TJV have been designed to identify samples that contain longer fibres and, by definition, have a better probability of having been derived from commercial mineralization. Most commercial deposits contain abundant 6.5 mm fibre. For example, Group 5 specifications stipulate that about 20% must exceed that length. Since 6.5 mm fibres are rare in TJV samples and have only been found in samples collected near important occurrences, that length has been chosen as an important threshold in fibre dispersion surveys.

POINT VALUES

In the TJV sampling, it has been found that most samples contain less than 100 fibres and that quantities exceeding 10,000 fibres are only obtained when sampling has encountered a fibre mat. A fibre mat is fairly uncommon in TJV sampling, either because the sample cannot be collected deep enough or because there is insufficient fibre in bedrock. Alternatively, some soils are too mixed by solifluction to permit the development of a mature profile. As a result, most samples do not contain enough fibres to be sure that the longest fibre present in the bedrock source are represented.

For example, the probability of collecting a fibre 6.5 mm long in soil over asbestos veins containing some fibres 6.5 mm long is high if the sample contains over 10,000 fibres (a fibre mat) but is poor if the sample contains only 10 fibres.

To overcome this difficulty, a "point" value is calculated by the laboratory at Kamloops which utilizes standard relationships between fibre lengths and quantities and greatly simplified the interpretation of soil results.

By permitting the comparison of samples containing different quantities of fibre, the points help to overcome the field difficulty of collecting samples of uniform quality.

Using the example quoted above, the sample containing 10 fibres and a longest fibre of 3.2 mm would have the same point score (50 points) as the fibre mat sample with 10,000 fibres and a maximum length of 6.5 mm. A point score of 50 seems to be a good threshold value since nearly all soils tested from commercial-grade asbestos showings have scores of 50 or more.

Field testing of this method in 1981 showed that it loses its statistical validity once the number of fibres in the soil falls to a low level. For example, a soil sample containing only three fibres will give a point score of 34 if the longest fibre is 2 mm long, but a much higher score of 75 if the longest fibre measures 3 mm.

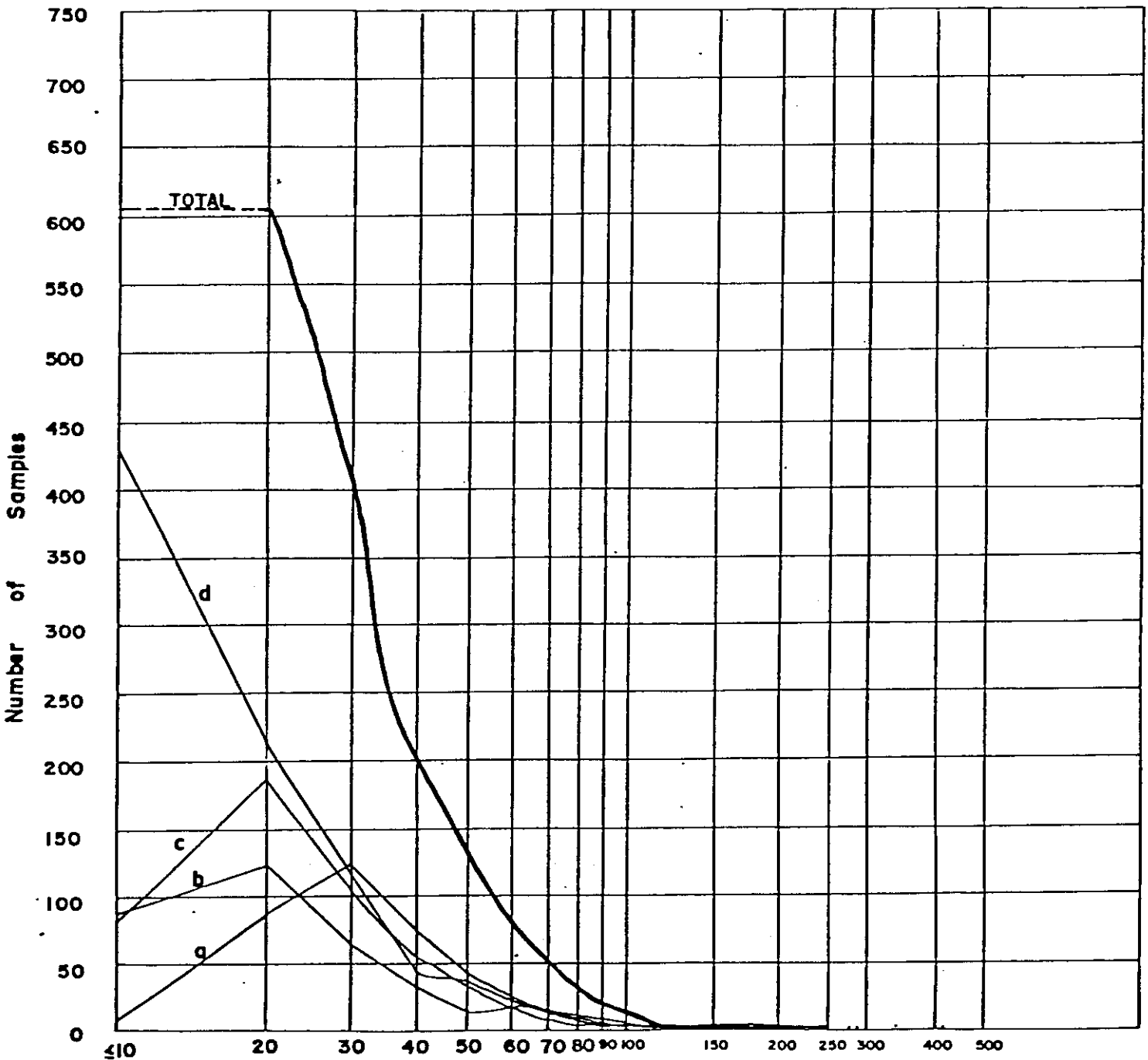
To overcome this weakness, it was necessary to rate samples according to the number of fibres present by adding a suffix to the point number. Points with an "a" suffix have the highest reliability and those marked "d" the lowest, as shown below:

<u>Suffix</u>	<u>Fibre quantity/sample</u>
a	more than 100 fibres
b	10 to 99 fibres
c	4 to 9 fibres
d	1 to 3 fibres

Samples with quantity "a" are usually collected where soils are thinnest over ultramafites. Soils with "d" ratings generally fringe ultramafite bodies, contain spurious fibre because of contamination, or reflect deeper and more complex overburden profiles. For a given ultramafite, scores derived from "a" soils and from "d" soils will be roughly similar but the "d" scores will be more erratic. Statistics show that over 90% of all "d" scores were less than 50 points and fibres 3 mm or more in length seldom occur in "d" soils. A graph of point value frequencies for each quantity suffix is shown on Figure 2 on the following page.

POINT VALUE FREQUENCIES

Quantity suffixes	No. of samples
a	394
b	512
c	378
d	<u>916</u>
TOTAL	2200



APPENDIX 2

TURK_TRENCH # _A_

Date: Aug. 23,1982

Location: 100+00 N, 136+00 E

Volume: 90 cu.m Size: 1.0 m deep,30.0 m long, 3.0 m wide

Rock Types: a) Soil fragments: White Channel gravels

b) Bedrock: Did not reach

Profile: 0.0 - 0.1 m ...Organic

0.1 - 1.0 m ...Fine sand with patchy zones of red-
stained, pebbly, quartz-rich gravel;
probably White Channel gravel

TURK_TRENCH # _B_

Date: Aug. 23,1982

Location: 105+50 N, 130+00 E

Volume: 225 cu.m Size: 1.5 m deep,50.0 m long, 3.0 m wide

Rock Types: a) Soil fragments: Serpentinite and graphitic schist

b) Bedrock: Serpentinite and graphitic schist

Profile: 0.0 - 0.1 m ...Organic

0.1 - 1.5 m ...Highly sheared serpentinite,abundant
fish scale; a diorite body about 1 m
wide crosses the trench about 20 m from
the east end and fibre up to 10mm occurs
in a few gash veins about 20 cm long
next to the diorite; the eastern 10 m
of the trench was made in highly
weathered graphitic schist

TURK TRENCH # C

Date: Aug. 23, 1982

Location: 106+00 N, 128+50 E

Volume: 550 cu.m Size: 1.5 m deep, 125 m long, 3.0 m wide

Rock Types: a) Soil fragments: Serpentinite, quartz-carbonate

b) Bedrock: Serpentinite, quartz-carbonate

Profile: 0.0 - 0.1 m ...Organic

0.1 - 1.5 m ...Southern 60 m of trench:red-stained

highly weathered quartz-carbonate

Northern 65 m of trench:highly sheared

serpentinite with abundant fish scale;

narrow diorite bodies (less than 2 m

wide) were exposed at 3 locations;

Comments: No fibre was seen

ARCHER, CATHRO

AND ASSOCIATES LTD.

CONSULTING GEOLOGICAL ENGINEERS

Box 4127, WHITEHORSE, Y.T. Y1A 3S9 667-4415

STANDARD BUILDING, VANCOUVER, B.C. 688-2568

1018 STANDARD BUILDING
510 WEST HASTINGS STREET
VANCOUVER, B. C.
V6B 1L8

CERTIFICATE

I, Robert J. Cathro, with business addresses in Whitehorse, Yukon Territory and Vancouver, British Columbia, and residential address in West Vancouver, British Columbia, do hereby declare

1. I am a consulting engineer.
2. I am a 1959 graduate of the University of British Columbia in geological engineering.
3. From 1959 to 1965 I was engaged in mining and exploration geology with United Keno Hill Mines Ltd., Giant Yellowknife Mines Ltd., and Eldorado Mining and Refining Ltd. I entered private practice in January, 1966.
4. I am a registered professional engineer in British Columbia and Yukon Territory.
5. I have supervised the work described in this report.

Respectfully submitted,



R.J. Cathro, B.A.Sc., P.Eng.

/mc

STATEMENT OF QUALIFICATIONS

J. Scott Murray

Scott Murray was raised at Abbotsford, B.C. and attended U.B.C., B.C.I.T. and Selkirk College. He was employed by Cassiar Asbestos Corp. from 1973 to 1978 as a geological technician at both the Cassiar and Clinton Mines. During this period he was engaged in all phases of mapping, surveying, grade control and exploration for asbestos fibre. From 1979 to present Mr. Murray has supervised asbestos exploration for Archer, Cathro & Associates (1981) Limited.

A handwritten signature in black ink, appearing to read 'J. S. M.', is written over a horizontal line.

J. Scott Murray

ARCHER, CATHRO

& ASSOCIATES LIMITED

CONSULTING GEOLOGICAL ENGINEERS

VANCOUVER, B.C. (604) 688-2568



BOX 4127, WHITEHORSE, Y.T. Y1A 3S9 (403) 677-4415

1016 - 510 WEST HASTINGS STREET
VANCOUVER, B.C. V6B 1L8

AFFIDAVIT

I, Joan Mariacher, of Whitehorse, Y.T. make oath and say:


That to the best of my knowledge the attached Statement of Expenditures for exploration work on the Turk 1-96 mineral claims on Claim Sheet 116C/7 is accurate.


Joan Mariacher

Sworn before me at Whitehorse, Y.T.

this 6 day of

September, 1982


Notary, Yukon Territory

090959

Statement of Expenditures
 Turk 1 - 96 claims
August 24 - September 3, 1981; June 1 - August 24, 1982

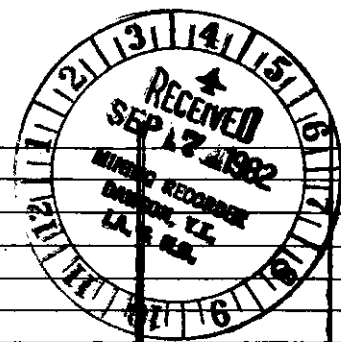


Labour

1981 - J. Murray (geologist) - 10 days at \$220/day	\$2,200.00	
J. Ryan (geologist) - 10 days at \$205/day	2,050.00	
S. Beckmann (linecutter) - 10 days at \$109/day	1,090.00	
G. Stewart (linecutter) - 10 days at \$94/day	940.00	
M. Luxmoore (sampler) - 6 days at \$91/day	546.00	
D. Lister (sampler) - 7 days at \$91/day	637.00	\$ 7,463.00
1982 - J. Murray (geologist) - 5 days at \$250/day	1,250.00	
C. Main (geologist) - 2 days at \$275/day	550.00	
S. Beckmann (sampler) - 20 days at \$124/day	2,480.00	
T. Carlson (sampler) - 20 days at \$94/day	1,880.00	6,160.00
<u>Helicopter (1981) - TNA Bell 47G3/B2 contract machine -</u> 16.3 hours at \$322/hr including fuel		5,236.00
<u>Travel, Freight and Field Equipment - 1981 -</u> \$7,000.00		
1982 -	4,400.00	11,400.00
<u>Analytical Costs - 1981 -</u>		11,600.00
<u>Office Costs - 1981 -</u> \$2,350.00		
1982 -	750.00	3,100.00
<u>Management - 1981 -</u> \$2,600.00		
1982 -	1,700.00	4,300.00
Total		\$49,259.00

In Account With

Project - TESLIN JOINT VENTURE
Date -- MAY 31, 1981



MANAGEMENT

MAY

Total
7,500.

LABOUR

Supervisory

M. P. Phillips - May 14, 15 - 5 hrs Site assessment
TOCC @ 31.25

156.25

Field

S. MURRAY - MAY 1-31 AT 2800/mo
J. RYAN - MAY 1-31 AT 2600/mo
I. TALBOT - MAY 7-31 AT 1700/mo
B. JOHNSTON - MAY 7-31 AT 1700/mo
M. LUXMOORE - MAY 13-31 AT 1350/mo
S. BECKMANN - MAY 13-31 AT 1600/mo
M. PENNER - MAY 13-31 AT 1350/mo
G. STEWART - MAY 25-31 AT 1400/mo

2800.00
2600.00
1371.00
1371.00
878.00
981.00
878.00
317.00
11096.00

plus 5% %

558.00

Casual

C. CHALMERS - JUNE 15, 1 day @ \$140

140.00

EXPENSES

Accounting

MAY

400.00 C3

Expediting

MAY 11-31 @ 900/mo

610.00 D2

Room & Board in Whse MURRAY-3, RYAN-3, TALBOT-3, JOHNSTON-3, LUXMOORE-2, PENNER-3
BECKMANN-3, CHALMERS-1

total 22 days at \$35 / day

770.00 DV

Field equipment from AC stock

1911.73 D1

Xerox copies, 475 copies at .25/copy

118.75 C1

Radio rental 5BX11 - May 13-31 @ \$250/mo + 2nd 5BX 11
May 13-31 @ \$150/mo

245.16 D1

Rental AC BLUE truck May 13-31 at \$900 /mo.
plus (12,850 to 13,700) 840 kms at 20¢ /km

719.16 DV

Petty cash 3.37 D1, 8.48 C2, 35.20 DV, 6.80 CV, 27.95 DV, 1.00 CV, 19.34 D1, 2.46 DV

124.50

Telephone 3.80

3.80

Blueprinting, sq. ft. Ozalid at c/ft plus sq. ft. Dilar at \$

Drafting, 1 hrs at \$ 18 /hr

18.00 C1

RECEIVED GENERAL - TOC ASSESSMENT

100.00 EF

WHITEHOLE STATIONERY

3.84 CV

M. P. PHILLIPS - XI AIC 4.02 XI.38

5.40 CV

S. MURRAY - EX AIC DV

42.50 DV

YUKON TIRE

5.00 DV

LOTA

6.00 DV

NORTECH

12.11 CV

TAYLOR CHEVROLET

24.00 DV

WILLIAMS & MACKIE

16.84 CV

WILSON OFFICE

4.31 CV

23,581.88

CREDITS

Advance to AC

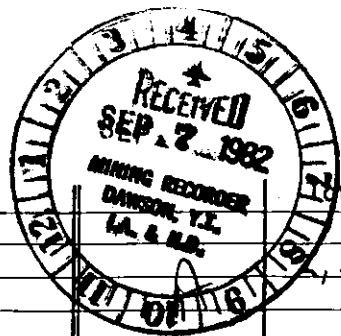
1500.00

Total

8531.88

In Account With

Project - TESLIN JOINT VENTURE
Date -- AUGUST 31, 1981



MANAGEMENT

Aug

LABOUR

Supervisory

Field	S. MURRAY - AUG. 1-31 AT 2800/mo	2800.00	
	J RYAN - AUG. 1-31 AT 2600/mo	2600.00	
	I TALBOT - AUG. 1-31 AT 1750/mo	1750.00	
	S BECKMAN - AUG. 1-31 AT 1650/mo	1650.00	
	M PENNER - AUG. 1-31 AT 1350/mo	1350.00	
	E STEWART - AUG. 1-31 AT 1200/mo	1200.00	
	M LUXMIDALE - AUG. 1-31 AT 1350/mo	1350.00	
	P JENKINSON - 6 DAYS AT 1750/mo	337.50	
	M. LEGASSICKE - AUG. 1-31 AT 1150/mo	775.00	
	D. LISTER - AUG. 22-31 AT 1350/mo	435.00	M
	M. TRUDZIK - AUG. 3-25 AT 1350/mo	1002.00	1545.00
		plus 50%	772.50
Casual	C. CHALMERS - 8 DAYS AT 140/day	1120.00	1120.00

EXPENSES

Accounting	Aug	400.00	C3
Expediting	Aug 1-31	900.00	DV
Room & Board in Whse	C. CHALMERS - 7, TRUDZIK - 1, LISTER - 1;		
	total 4 days at \$ 35 / day	140.00	DV
Field equipment from AC stock		140.12	D1
Xerox copies, 359 copies at 25 /copy		89.75	C1
Radio rental	3 Bx 11 - Aug @ \$250 / mo	250.00	D1
Rental AC BLUE truck	Aug 1-31 at \$30 / day / mo. = 930		
	plus (20,855 to 22,774) kms at 204 / km	1313.80	DV
Petty cash	C2. 30.00, D2 141.21	171.21	CV 30.00 + 141.21
Telephone	0.60	.60	CV
Blueprinting, 340 sq. ft. Ozalid at 30 c/ft plus 95 sq. ft. Dilar at \$ 2.50 / ft.		339.50	C1
Drafting, 67 hrs. at \$ 18 / hr.		1206.00	C1
Rental AC magnetometer	Aug 11-31 @ \$6/d	126.00	D1
Edla Ross, supervisor in Dawson.		150.00	DV
Her words office		3.02	CV
Whitburn Motors		19.68	DV
Mac's Newstead		20.65	D1
R.P. Air, fuel - 23.00 + 13.80		36.80	DV
Edmonton Hotel		15.00	DV
Urban Office		15.60	CV
Provision General, meals		2.50	CV
postage		100.00	CV

5440.23

Credit

White Pass, drum return

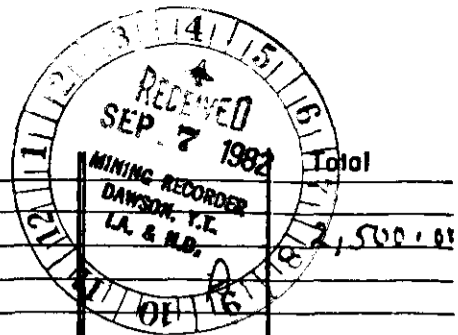
(1374.40) (1374.40)

Total

30,868.33

In Account With

Project - TFSLIN JOINT VENTURE
Date -- SEPT. 30, 1981



MANAGEMENT

Sypt

LABOUR

Supervisory

Field	S. MURRAY - SEPT 1-30 AT 1800/mo	1800.00	
	J. RYAN - SEPT 1-30 AT 1800/mo	1800.00	
	I. TALBOT - SEPT. 1-7 AT 1750/mo	409.00	
	S. BELLMAN - SEPT 1-22 AT 1650/mo	1410.00	
	M. PENNER - SEPT. 1-5 AT 1350/mo	225.00	
	M. LUXMOORE - SEPT. 1-17 AT	765.00	
	E. JOHNSON - SEPT. 1-5 AT 1750/mo	292.00	
	G. STEWART - SEPT. 1-19 AT 1400/mo	277.00	
	D. LISTER - SEPT. 1-7 AT 1350/mo	315.00	
	K. OISETHOEN - SEPT 6-11, 17-18 - 2 DAYS AT 1750/mo	334.00	10027.00

plus %

Casual	C. CHAMBERS - SEPT 3-6, 15-18, 24 - 9 DAYS AT 170/DAY	1530.00	5018.50
	K. HACKMAN - SEPT 1, 2 - 2 DAYS AT 120/DAY	240.00	
	I. GORTER - SEPT 1, 2, 10-14 - 5 DAYS AT 120/DAY	600.00	1100.00

EXPENSES

Accounting	Sypt	400.00	C 3
Expediting			
Room & Board in Whse	OISETHOEN-5; MURRAY-3; RYAN-3; CHAMBERS-3; HACKMAN-2		

total 16 days at \$ 35 / day

Field equipment from AC stock		560.00	DV
Xerox copies, 1271 copies at 27/copy		317.75	C 1
Radio rental SBR 11 - Sept 1-5 @ \$ 250 / mo		416.67	D 1

Rental AC blue truck Sept 1-6	at \$ 30 / mo day		
plus (22774 to 23965) 1191 kms	at 20¢ / km	418.20	DV

Petty cash	70.85 D2, 38.15 D2, 35.00 F + 14.80 C2 + 7.29 C2	166.09	CV
------------	--	--------	----

Telephone	2150 + 6.43	8.53	CV
-----------	-------------	------	----

Blueprinting,	sq. ft. Ozalid at c/ft plus sq. ft. Dilar at \$ /ft.		
---------------	--	--	--

Drafting, 30 1/2 hrs. at \$ 18 / hr.		549.00	C 1
--------------------------------------	--	--------	-----

Urban Salvage, seat installation in trucks		92.00	DV
--	--	-------	----

Urban Gallery		2.50	CV
---------------	--	------	----

Wilson's Office		21.99	CV
-----------------	--	-------	----

TNTA D2		1372.72	DV
---------	--	---------	----

Higgins		1.70	D 1
---------	--	------	-----

Nelsons Ltd		19.50	D 1
-------------	--	-------	-----

Edwards Hydro		19.00	DV
---------------	--	-------	----

Ford Fax		8.92	D 1
----------	--	------	-----

Shoppers Drug		18.10	D 1
---------------	--	-------	-----

Carmacks Hotel		2.85	DV
----------------	--	------	----

Kits Camera		6.10	D 1
-------------	--	------	-----

Cash Receipts		62.05	DV
---------------	--	-------	----

Rental AC Injun van Sept 7-14 @ \$ 30/day plus 1994 km @ 20¢/km		638.80	DV 4727.97
---	--	--------	------------

2422.87

Credits

Rec. General - refund TUC amens.		100.00	F 1000
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Total

2422.87

Project - TRSLIN JOINT VENTURE
 Date -- Oct. 31, 1981



MANAGEMENT

Oct. -

100.00

LABOUR

Supervisory

M.P. Phillips - total 1 day program and field assessed

250.00

Field

S. Murray, Oct 1-31 @ 2800/mo
 J. Ryan, " " " " " "

2,800.
 2,800.

5,600.00

Casual

plus 50%

2800.00

EXPENSES

Accounting

Oct.

400.00 C3

Drafting, 19 1/2 hrs. at 18 /hr.

351.00 C1

Xerox copies, 302 copies at 25¢/copy

75.50 C1

Petty cash 28.25 C2, 26.66 C2, 2.65 C2, 19.82 C2
 5.30 C2

132.68 C2

Telephone

Beaver Lumber

9.25 D1

Beaver General, file claim transfer

292.00 F

Northern Notary

4.12 D1

Communication Supply

15.46 C2

Whitlock Stationery

5.50 C2

General Ent.

22.97 D1

Mac's

16.00 D1

1324.48

12,474.48

Casual

sublet Whittaker to Chevron MS15 project on Sept 12, 601 hr @ \$230/hr contract price

G1

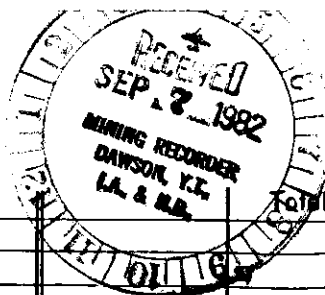
1403.00 (1403.00)

Total

11,071.48

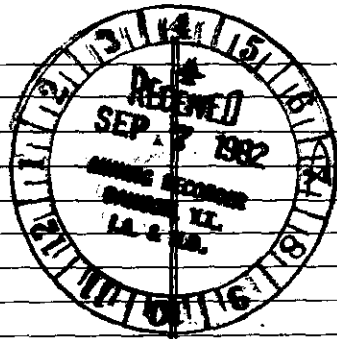
In Account With

Project - CLINTON PROJECT
Date -- JUNE 30, 1982



Description	Amount	Code
MANAGEMENT		
500/mo JAN - JUNE 30 = 3000 LESS #800 CHARGED IN MAY		
LABOUR		
Supervisory		
Field		
✓ S. MURRAY - 5/30 June 1-30 @ #3200	533.00	
✓ S. BECKMANN - JUNE 1-30 @ #1900	1900.00	
✓ T. CARLSON - " " " @ #1400	1400.00	
		5
		3833.00
		2
		1916.50
Casualty		
E. HACKMANN - 5 DAYS STAKING @ 140	700.00	
M. Casho - 2 hrs type assess. report	44.00	
C. MAIN - 5 days property supervision @ 265	1325.00	
A. GRILLER - 4 DAYS STAKING @ 180	720.00	
		9
		2789.00
EXPENSES		
Accounting - 100/month MAR. TO JUNE 30 = 400 LESS 100 IN MAY	300.00	C3
Expediting JUNE 14-30 @ #700/mo	396.67	D3
Room & Board in Whse 12 mon days @ #45	540.00	DV
		total days at \$ /day
Field equipment from AC stock	2415.94	D1
Xerox copies, 557 copies at 25¢/copy	137.75	C1
Radio rental		
Rental AC 1700 truck JUNE 14-30 at \$40 /mo. day plus (- to -) kms at - /km	680.00	D4
Petty cash 10,30,22; 2,20,22		
Telephone 5.25 +		
Blueprinting, 14 sq. ft. Ozalid at 30 c/ft plus - sq. ft. Dilar at \$ - /ft.	33.30	C1
Drafting, 21 hrs. at \$ 22 /hr.	462.00	C1
Creator Labs	275.00	F
Receives General - Tote 44-52, Turb 97-104 + 4 cl maps	404.00	F
Receives General - Tote 52-64	80.00	F
Receives General - Tote 75-82	80.00	F
Receives General - Tote 53-56, 71-74	80.00	F
Receives General - claims Mendon	80.00	F
" " " " " "	80.00	F
" " " " " "	80.00	F
cash for stakers names	150.00	F
Neville Cook	158.14	D1
Supplies Reproductions	28.75	C1
Receives General, claim Mendon	80.00	F
Receives General, " " "	80.00	F
Receives General, " " "	80.00	F
C.P. Air Int	54.74	D3
Senior Service	50.32	D4
Essex Sports	32.25	D1
Prince Mining Ltd	1050.00	DV
Whitehorn Motors	34.09	D4
Whitehorn Sales	22.75	DV
Eldorado Hotel	89.20	DV
Norcan Laundry	599.88	D4
McNally	53.20	D1
Credit		
Sub-let to WDU BECKMANN JUNE 1-14 @ 124/d	(1736.00)	19,426.98
CARLSON " " " @ 94/d.	(1316.00)	
payment from Reubin, June 11	5000.00	
payment from BRINCO, June 15	10,000.00	
		(18,052.00)
Total		1291.70
OWING MAY 31/82 AC BILL		2666.68

Project - CLINTON PROJECT
Date -- AUG 31, 1962



MANAGEMENT

August

Total

LABOUR

Supervisory

Field

- 1 - S. BECKMANN - AUG 1-31 @ 1900
- 1 - T. CARLSON - AUG 1-31 @ 1400
- 1 - J. DUKE - AUG 16-31 @ 1750

1900.
1400.
903

503.00

4203.00

plus 50 %

Casual M. L. GASSICK - 12 DAYS @ 140

2101.50
1680.00

EXPENSES

- Accounting *Aug* 100.00
- Expediting *Aug* 200.00
- Room & Board in Whse 3 MAN DAYS @ 45 135.00

100.00
200.00
135.00

C3
D3
D2

total days at \$ /day

- Field equipment from AC stock - 383.60
- Xerox copies, 268 copies at 25¢/copy 67.00
- Radio rental

383.60
67.00

D1
C1

Rental AC ~~Wagon~~ truck Aug 1-31 at \$ 1200 /mo. 1200.00

plus (to) kms at /km 138.50

Petty cash 11 D4 115 D3 12.50 D2 146.32

Telephone 146.32 +

Blueprinting, sq. ft. Ozalid at c/ft plus sq. ft. Dilar at \$ /ft. 88.00

Drafting, 4 hrs. at \$ 22 /hr.

52.80
613.05
3755.00
122.00
32.00
91.76
167.00
1550.00
45.00
1600.00
381.50

D1
D4
K
D3
D3
D3
D3
D2
D2
E
D2

11,025.50

Credit

increased w. Pass charge in July (358.69 vs 385.69)

(27.00)

(27.00)

19,483.10

Total

less credit AC July bill
remaining credit

(33,404.80)

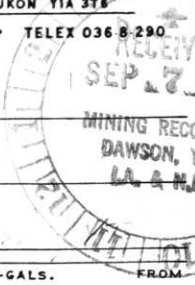
(13,921.80)



TRANS NORTH TURBO AIR LTD.
BOX 4338, WHITEHORSE, YUKON T1A 3T6

TELEPHONE (403)668-2177 • TELEX 036 8 290

ACCOUNT NUMBER	116
INVOICE DATE	51174
AREA	B.C. <input type="checkbox"/> YUKON <input type="checkbox"/> WWT. <input type="checkbox"/> ALTA. <input type="checkbox"/>
A/C TYPE	BEL 47
FLIGHT DATE	24 08 81
PURCHASE ORDER NO.	Contract



ARCHER CATIRO
CHARTERER

TJV
BILLING ADDRESS
Box 4127, Whitehorse

FUEL & OIL-X	TNTA FUEL USED	HRS.-GALS.	FROM
TNTA CUST. <input checked="" type="checkbox"/>		3.1	

FROM	MILES	HOURS	ZONE	REMARKS - NO. OF PASS. - FREIGHT LBS.
CLINTON CRK.				
TO LOCAL		3.1		TURK 1.6
				TRADSTEAK .5
				TJOP 1.0

SUB	G.L.	AMOUNT
8415	01020	713.00

TERMS NET 30 DAYS
1.75% INTEREST PER MONTH (21% PER ANNUM)
WILL BE CHARGED ON ALL OUTSTANDING AMOUNTS OVER 30 DAYS.

CHARTERER'S SIGNATURE: *[Signature]*

AXM *Adam MORRISON*
INITIALS PILOT'S SIGNATURE

AXM MORRISON
ENGINEER'S NAME

FLIGHT ATTENDANT

WAITING TIME	@	/HR.	
FUEL:	@	/GAL.	
FUEL:	@	/GAL.	
MEALS & LODGING			
OTHER			
OTHER			

TOTAL \$ 713.00

FLIGHT REPORT INVOICE

N
T



TRANS NORTH TURBO AIR LTD.
BOX 4338, WHITEHORSE, YUKON Y1A 3T6

TELEPHONE (403) 668-2177 • TELEX 0388 290

ACCOUNT NUMBER	42501
INVOICE DATE	SEP 5 1982
A/C TYPE	FCR H
AIRCRAFT REGISTRATION	FCR H
DAY	25
MONTH	08
YEAR	81
PURCHASE ORDER NO.	



ARCHER CATARS
CHARTERER

TJV

BILLING ADDRESS

FUEL & OIL-X	TNTA FUEL USED	HRG.-GALS.	FROM
TNTA	CUST.	3.5	

FROM	MILES	HOURS	ZONE	REMARKS - NO. OF PASS - FREIGHT LBS.
CLINTON CRK.				
TO LOCAL		3.5		TURK 2-3
				FOADSTEAK .6
				JARTZART .6

SUB	G.L.	AMOUNT
845	stolo	custo

TERMS: EIGHTEEN PERCENT INTEREST PER ANNUM WILL BE CHARGED ON ALL INVOICES NOT PAID WITHIN 30 DAYS OF DATE ISSUED.

WAITING TIME	@	/HR.	
FUEL:	@	/GAL.	
FUEL:	@	/GAL.	
MEALS & LODGING			
OTHER			
OTHER			

S. S. E. M.
CHARTERER'S SIGNATURE

AXM. Adam Mackison
PILOT'S SIGNATURE

AXM Mackison
ENGINEER'S NAME

TOTAL \$ 85.00

FLIGHT REPORT
INVOICE

**N
T**



TRANS NORTH TURBO AIR LTD.
 BOX 4338, WHITEHORSE, YUKON Y1A 4B6
 TELEPHONE (403)668-2177 • TELEEX 0368-290



ACCOUNT NUMBER	116
INVOICE NUMBER	42504
INVOICE DATE	11/19/81
AREA	<input type="checkbox"/> B.C. <input type="checkbox"/> YUKON <input type="checkbox"/> N.W.T. <input type="checkbox"/> ALTA.
AIR TYPE	47 FKR H
AIRCRAFT REGISTRATION	
FLIGHT DATE	26 08 81
PURCHASE ORDER NO.	CONTRACT

ARCHER CATH...
 CHARTERER

TUV

BILLING ADDRESS

FUEL & OIL-X	TNTA FUEL USED	HRS.-GALS.
TNTA CUST.		2.3

FROM	MILES	HOURS	ZONE	REMARKS - NO. OF PASS - FREIGHT LBS.
CLINTON CRK.				
TO LOCAL		2.3		TOMOSTEAK .6
				TURK 1.7

SUB	G.L.	AMOUNT
645000		509.00

2.3 @	230.00	509.00
@		
@		
@		

TERMS: EIGHTEEN PERCENT INTEREST PER ANNUM WILL BE CHARGED ON ALL INVOICES NOT PAID WITHIN 30 DAYS OF DATE ISSUED.

WAITING TIME	@	/HR.	
FUEL:	@	/GAL.	-
FUEL:	@	/GAL.	
MEALS & LODGING			
OTHER			
OTHER			

S.S. Morrison
 CHARTERER'S SIGNATURE

AXM Adam Morrison
 PILOT'S SIGNATURE

AXM MORRISON
 ENGINEER'S NAME

TOTAL \$ 509.00

**FLIGHT REPORT
 INVOICE**

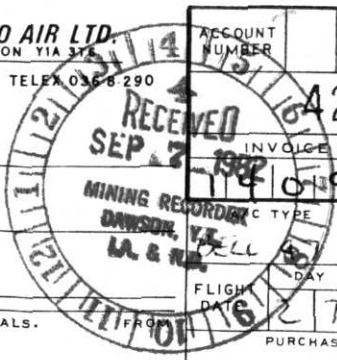
N
T



TRANS NORTH TURBO AIR LTD.
BOX 4338, WHITEHORSE, YUKON Y1A 3T6

TELEPHONE (403)668-2177 • TELETYPE 0368-290

ACCOUNT NUMBER	116
INVOICE NUMBER	42505
INVOICE DATE	SEP 27 1981
AREA	<input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> F <input type="checkbox"/> G <input type="checkbox"/> H <input type="checkbox"/> I <input type="checkbox"/> J <input type="checkbox"/> K <input type="checkbox"/> L <input type="checkbox"/> M <input type="checkbox"/> N <input type="checkbox"/> O <input type="checkbox"/> P <input type="checkbox"/> Q <input type="checkbox"/> R <input type="checkbox"/> S <input type="checkbox"/> T <input type="checkbox"/> U <input type="checkbox"/> V <input type="checkbox"/> W <input type="checkbox"/> X <input type="checkbox"/> Y <input type="checkbox"/> Z
AIRCRAFT REGISTRATION C	FCR14
FLIGHT DATE	27 09 81
PURCHASE ORDER NO.	



CHARTERER
ARCHER CATARO

BILLING ADDRESS
TJV

FUEL & OIL-X	TNTA FUEL USED	HRS.-GALS.
TNTA	<input checked="" type="checkbox"/> CUST.	.8

FROM	MILES	HOURS	ZONE	REMARKS - NO. OF PASS.	FWEIGHT LBS.
CLINTON CRK.		.8		TURK	.8
TO LOCAL					

SUB	G.L.	AMOUNT
8455000		184.00

.8 @	230.00	184.00
@		
@		
@		

TERMS: EIGHTEEN PERCENT INTEREST PER ANNUM WILL BE CHARGED ON ALL INVOICES NOT PAID WITHIN 30 DAYS OF DATE ISSUED.

WAITING TIME	@	/HR.
FUEL:	@	/GAL.
FUEL:	@	/GAL.
MEALS & LODGING		
OTHER		
OTHER		

J. S. ...
CHARTERER'S SIGNATURE

AXM Adam Morrison
PILOT'S SIGNATURE

AXM MORRISON
ENGINEER'S NAME

TOTAL \$ 184.00

**FLIGHT REPORT
INVOICE**



TRANS NORTH TURBO AIR LTD.
 BOX 4338, WHITEHORSE, YUKON Y1A 3T6

TELEPHONE (403)668-2177 • TELEX 026 8 2904

ACCOUNT NUMBER

116

42508

ARCHER CATHRO
 CHARTERER

TJV Box 4127

BILLING ADDRESS

Whse.

INVOICE DATE

09 18 11

AREA
 B.C.
 YUKON
 NWT
 ALTA.

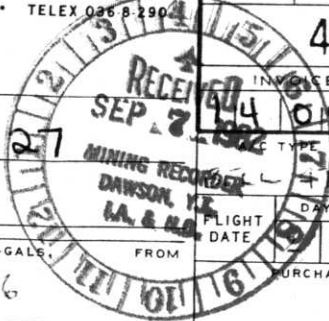
AIRCRAFT REGISTRATION C

F E R 14

FLIGHT DATE

8 0 9 1 1

PURCHASE ORDER NO.



FUEL & OIL-T	TNTA FUEL USED
TNTA	CUST.
✓	

HRS.-GALS.

FROM

2.6

FROM CLINTON CRK.

MILES

HOURS

ZONE

REMARKS - NO. OF PASS - FREIGHT LBS.

TO LOCAL

2.6

TOADSTEAK .5

TURK 2.1

SUB	G.L.	AMOUNT
845	5020	598.00

2.6 @ 230.00 598.00

TERMS: EIGHTEEN PERCENT INTEREST PER ANNUM WILL BE CHARGED ON ALL INVOICES NOT PAID WITHIN 30 DAYS OF DATE ISSUED.

WAITING TIME

@ /HR.

FUEL:

@ /GAL.

FUEL: *

@ /GAL.

MEALS & LODGING

OTHER

OTHER

CHARTERER'S SIGNATURE

PILOT'S SIGNATURE

ENGINEER'S NAME

TOTAL \$ 598.00

FLIGHT REPORT

INVOICE



TRANS NORTH TURBO AIR LTD.
 BOX 4336, WHITEHORSE, YUKON Y1A 3T6

TELEPHONE (403)668-2177 • TELEX 036-8-290

ACCOUNT NUMBER	116
42510	
INVOICE DATE	4 09 81
AREA	<input type="checkbox"/> B C <input type="checkbox"/> YUKON <input type="checkbox"/> NWT <input type="checkbox"/> ALTA
FLIGHT TYPE	REG
AIRCRAFT REGISTRATION	11818
MONTH	SEP
YEAR	81
FROM	DAWSON, Y.K. A.A. & N.A.
PURCHASE ORDER NO.	

ARCHER CHAIRS
 CHARTERER
 TUV
 BILLING ADDRESS

FUEL & OIL-X	TNTA FUEL USED	HRS.-GALS.
TNTA CUST.		2.6



FROM	MILES	HOURS	ZONE	REMARKS	NO. OF PASS.	FREIGHT LBS.
CLINTON CRK.						
TO LOCAL		2.6		TLINK		2.2
				TRAMPSTEAK.		4

SUB	G.L.	AMOUNT
845	5020	598 00

2.6 @	230.00	598 00
@		
@		
@		

TERMS: EIGHTEEN PERCENT INTEREST PER ANNUM WILL BE CHARGED ON ALL INVOICES NOT PAID WITHIN 30 DAYS OF DATE ISSUED.

WAITING TIME	@	/HR.
FUEL:	@	/GAL.
FUEL:	@	/GAL.
MEALS & LODGING		
OTHER		
OTHER		

T. S. ...
 CHARTERER'S SIGNATURE
 AXM Adam Morrison
 PILOT'S SIGNATURE
 AXM MORRISON
 ENGINEER'S NAME

TOTAL \$ 598 00

**FLIGHT REPORT
 INVOICE**

Handwritten scribbles and initials at the bottom of the page.

N
T



TRANS NORTH TURBO AIR LTD.
BOX 4338, WHITEHORSE, YUKON Y1A 3T6

TELEPHONE (403)668-2177 • TELEX 036-8 290

ARCHER CATARO
CHARTERER

TJV
BILLING ADDRESS

ACCOUNT NUMBER	116
42512	
INVOICE DATE	14 09 81
AREA	<input type="checkbox"/> B.C. <input type="checkbox"/> YUKON <input type="checkbox"/> NWT <input type="checkbox"/> ALTA.
AVIATION TYPE	SEARCH
FLIGHTS RECORDED	0 0 1
DATE	LA & SA
AIRCRAFT REGISTRATION	118
DAY	0 1
MONTH	0 9
YEAR	8 1
PURCHASE ORDER NO.	

FUEL & OIL-X	TNTA FUEL USED	HRS.-GALS.	FROM
TNTA CUST.		3.9	

FROM	MILES	HOURS	ZONE	REMARKS	NO. OF PASS.	FREIGHT LBS.
CLINTON CRK		3.9		TOADSTEAK		.5
TO CCAL				TURK		1.6
				TARTARE		} 1.8
				TJUP		
				TOS		

SUB	G.L.	AMOUNT
845	3920	897 00

3.9 @	230.00	897 00
@		
@		
@		

TERMS: EIGHTEEN PERCENT INTEREST PER ANNUM WILL BE CHARGED ON ALL INVOICES NOT PAID WITHIN 30 DAYS OF DATE ISSUED.

WAITING TIME	@	/HR.
FUEL:	@	/GAL.
FUEL:	@	/GAL.
MEALS & LODGING		
OTHER		
OTHER		

[Signature]
CHARTERER'S SIGNATURE

ARM Adam Morrison
PILOT'S SIGNATURE

ARB WATT
ENGINEER'S NAME

TOTAL \$ 897 00

**FLIGHT REPORT
INVOICE**





TRANS NORTH TURBO AIR LTD.
 BOX 4338, WHITEHORSE, YUKON Y1A 3T6

TELEPHONE (403)668-2177 • TELEX 036-8-290

ACCOUNT NUMBER	116
42520	
INVOICE DATE	14 09 81
AREA	3.0
FROM	WMT
ALTA	
AIRCRAFT REGISTRATION	F 2 R H
DAY	9
MONTH	9
YEAR	81
FLIGHT DATE	SEP 2 1981
PURCHASE ORDER NO.	

CHARTERER HITCHER CATHRE
TJV
 BILLING ADDRESS

FUEL & OIL-X		TNTA FUEL USED	HRS.-GALS.
TNTA	CUST.		
	<input checked="" type="checkbox"/>		1.8



FROM	MILES	HOURS	ZONE	REMARKS - NO. OF PASS - FREIGHT LBS.
CLINTON CRK.				
TO LOCAL				
				BEAR 04
				TURK 1.4

SUB	G.L.	AMOUNT
8455020		414.00

1.8 @ 230.⁰⁰ 414.00

TERMS: EIGHTEEN PERCENT INTEREST PER ANNUM WILL BE CHARGED ON ALL INVOICES NOT PAID WITHIN 30 DAYS OF DATE ISSUED.

WAITING TIME	@	/HR.
FUEL:	@	/GAL.
FUEL:	@	/GAL.
MEALS & LODGING		
OTHER		
OTHER		

[Signature]
 CHARTERER'S SIGNATURE

AXM Adam Morrison
 PILOT'S SIGNATURE

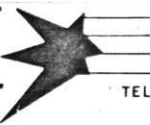
AXM MORRISON
 ENGINEER'S NAME

TOTAL \$ 414.00

**FLIGHT REPORT
 INVOICE**

[Handwritten initials]

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N
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TRANS NORTH TURBO AIR LTD.
BOX 4338, WHITEHORSE, YUKON Y1A 3T6

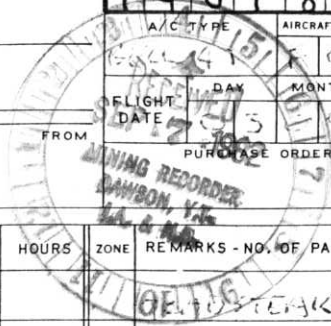
TELEPHONE (403)668 2177 • TELEX 036-8-290

ACCOUNT NUMBER	116
42522	
INVOICE DATE	14 09 81
A/C TYPE	PKR H
AIRCRAFT REGISTRATION C	PKR H
FLIGHT DATE	14 09 81
PURCHASE ORDER NO.	

ARCHER CATHRC
CHARTERER

TJV
BILLING ADDRESS

FUEL & OIL-X	TNTA FUEL USED	HRS.-GALS.	FROM
TNTA CUST.		3.1	



FROM	MILES	HOURS	ZONE	REMARKS - NO. OF PASS.	FREIGHT LBS.
CLINTON CRK.					
COCAL				TRUCK	1.3

SUB	G.L.	AMOUNT
845	5000	713.00

3.1 @	230. ⁰⁰	713.00
-------	--------------------	--------

TERMS: EIGHTEEN PERCENT INTEREST PER ANNUM WILL BE CHARGED ON ALL INVOICES NOT PAID WITHIN 30 DAYS OF DATE ISSUED.

WAITING TIME	@	/HR.
FUEL:	@	/GAL.
FUEL:	@	/GAL.
MEALS & LODGING		
OTHER		
OTHER		

J.S. [Signature]
CHARTERER'S SIGNATURE

AKM Adam Morrison
PILOT'S SIGNATURE

AKM MORRISON
ENGINEER'S NAME

TOTAL \$ 713.00

FLIGHT REPORT
INVOICE

GEOTOR SERVICES INCORPORATED

485 - 12th AVENUE

KAMLOOPS, B.C. V2C 3Y6

SOLD TO ARCHER CATHRO & ASSOC. LTD.

1016 - 510 W. HASTINGS ST.

SHIPPED TO VANCOUVER, B.C. V6B 1L8

ADDRESS _____ VIA _____

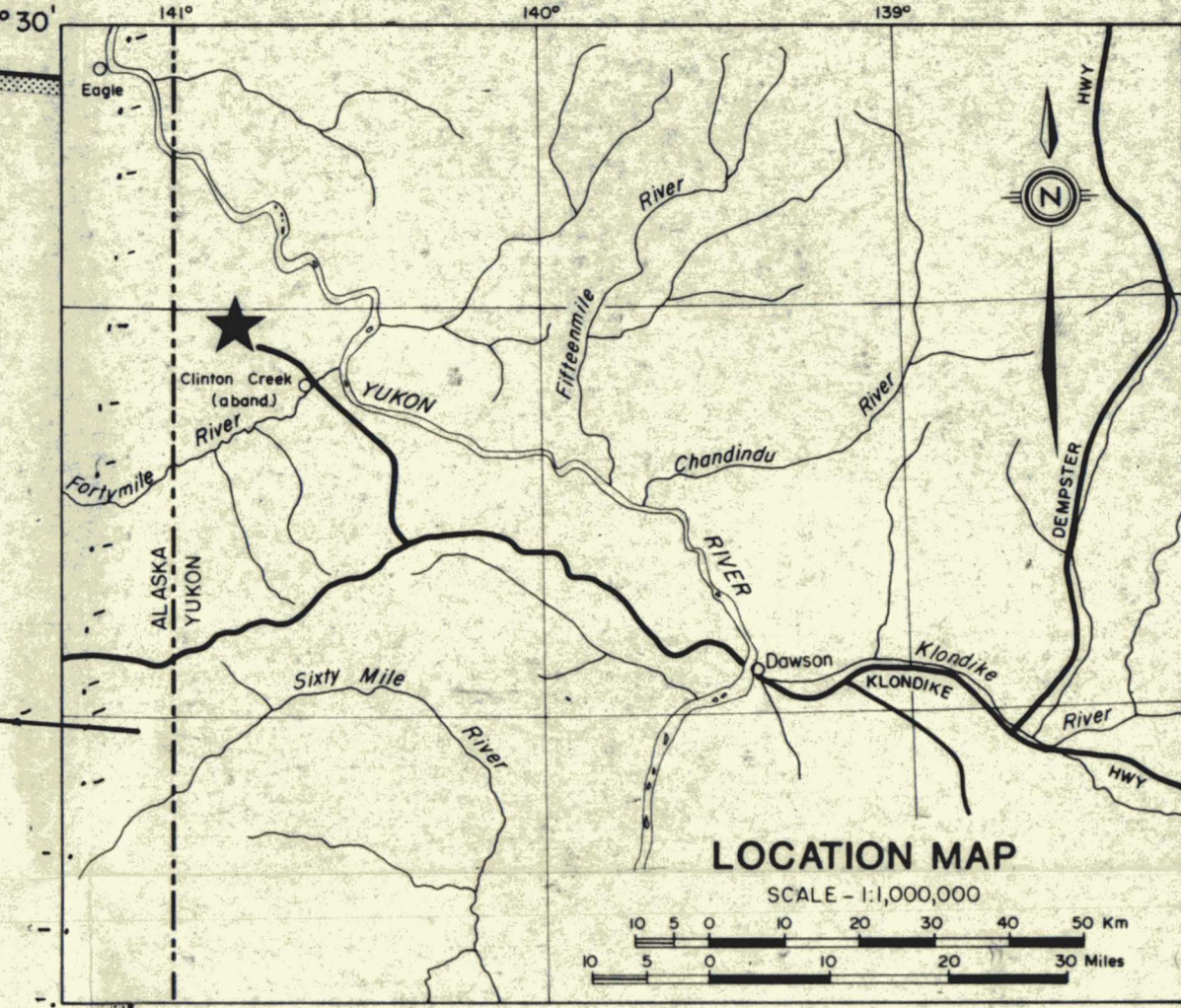
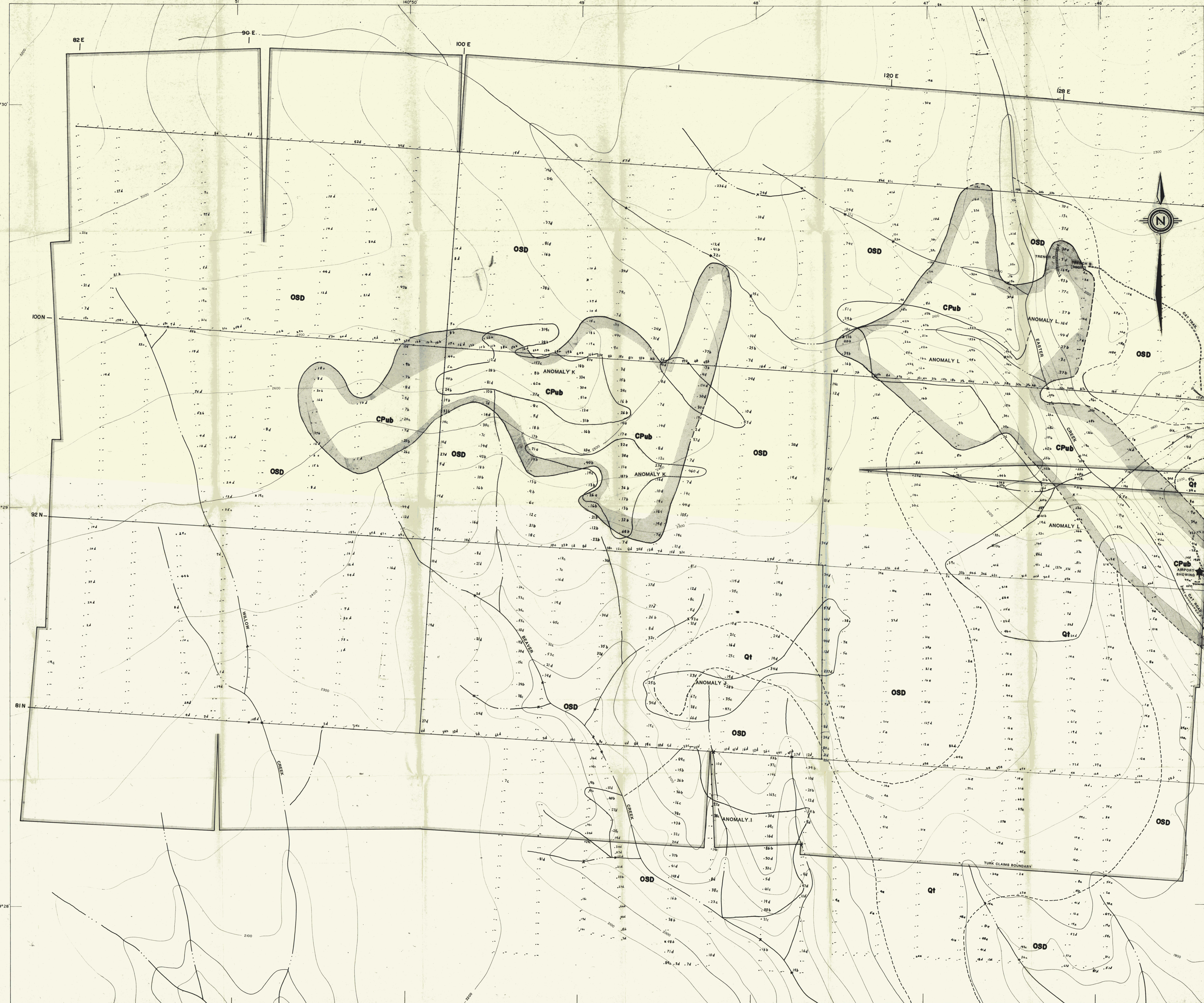
OUR NUMBER	066756
DATE	Oct 31/81
CUSTOMER	ARCHER CATHRO & ASSOC. LTD.
SALES	
TERMS	
P.C.B.	

RECORDED
 SEP 27 1982
 MINING RECORDER
 DAWSON, Y.C.
 M.A. & N.B.

INVOICE

	Cent # 712 - 713			
	Cent # 716 - 724			
	550 x 7			3850 00

*Total 5950.00
 per hw 6/81
 # 822*



LEGEND

- QUATERNARY**
 - QT Elevated alluvial terrace conglomerate, sand, silt
- CARBONIFEROUS TO PERMIAN**
 - CPub Dark green serpentinite and quartz carbonate rocks
- GROOVICIAN TO DEVONIAN**
 - OSD Undifferentiated grey quartz mica schist, chlorite schist, carbonaceous mudstone, phyllite, ling sandstone
- Geological contact (defined, assumed)**
- Anomalous zone boundary (defined, assumed)**
- Soil sample location and point value**
- Silt sample location and point value**
- 1000 5000** Grid coordinates
- TRENCH**

NOTE: Chrysotile content of samples measured with Fine Particle Separator at GEOTECH SERVICES INCORPORATED, Kamloops, B.C.

Fig. 3
 ARCHER, CATIRO & ASSOCIATES (1981) LTD.
GEOLOGY AND FIBRE DISPERSION SURVEY
TURK CLAIMS
 TESLIN JOINT VENTURE
 SCALE = 1:5000
 0 50 100 200 300 400 500 METERS
 0 50 100 200 300 400 500 FEET