

**ASSESSMENT REPORT**  
on an  
**AIRBORNE MAGNETOMETER SURVEY**  
on the  
**HOT, TIP AND FLAT CLAIMS**  
**LIARD MINING DIVISION, BRITISH COLUMBIA**  
**NTS 104P/3,4,5,6**  
**Latitude: 59°12'N, Longitude: 129°38'W**

Prepared for:  
**CARTAWAY RESOURCES CORPORATION**

Prepared by:  
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Date of Survey: May 9 - 16, 1996

Date of Report: Dec 10, 1996

**24548**

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## INTRODUCTION

In May of 1996 High-Sense Geophysics Ltd. was contracted by Nicholson & Associates Ltd. on behalf of Cartaway Resources Corp. to provide a detailed, precision, low level airborne magnetic survey over the Hot, Tip and Flat claims in the Cassiar area of northern British Columbia.

The survey was flown between May 9<sup>th</sup> and 16<sup>th</sup>, 1996. A total of 3,678 line kilometers of total field magnetic data, flown at a nominal line spacing of 100 meters, was gathered.

The intention of the survey was to provide regional mapping information to assist in the exploration of the claims.

## PROPERTY DESCRIPTION

The property consists of 77 claims totalling 1308 units, detailed in the following list. Claims were staked by Nicholson and Associates in May, 1995 and are 100% owned by Cartaway Resources Corp. The claims are located on map sheets N.T.S. 104P/3W,4E,4W, 5W and 6W in the Liard Mining Division.

## LIST OF CLAIMS

**Table 1 - Summary of Claim Particulars**

Claim name	Record #	No. of units	Expiry Date	Map sheet location
HOT 1	336092	20	97/05/06	104P/5E
HOT 2	336093	20	97/05/06	104P/5E
HOT 3	336094	20	97/05/06	104P/5E
HOT 4	336095	20	97/05/06	104P/5E
HOT 5	336096	20	97/05/07	104P/5E
HOT 6	336097	20	97/05/07	104P/5E
HOT 7	336098	20	97/05/07	104P/5E
HOT 8	336099	20	97/05/08	104P/5E
HOT 9	336100	18	97/05/08	104P/5E
HOT 10	336101	20	97/05/11	104P/5E

HOT 11	336102	20	97/05/11	104P/5E
HOT 12	336103	18	97/05/11	104P/5E
HOT 13	336104	10	97/05/07	104P/4E
HOT 14	336105	12	97/05/07	104P/4E
HOT 17	336106	20	97/05/10	104P/5E
HOT 18	336107	20	97/05/10	104P/5E
HOT 19	336108	20	97/05/15	104P/5E
HOT 20	336109	12	97/05/15	104P/6W
HOT 21	336090	1	97/05/07	104P/4E
HOT 22	336091	1	97/05/08	104P/4E
HOT 23	336110	12	97/05/09	104P/4E
HOT 24	336111	20	97/05/16	104P/4W
HOT 25	336113	20	97/05/12	104P/4W
HOT 26	336114	20	97/05/15	104P/4W
HOT 27	336115	10	97/05/15	104P/4W
HOT 28	336116	20	97/05/15	104P/4W
HOT 29	336117	20	97/05/12	104P/4W
HOT 30	336118	8	97/05/15	104P/4W
HOT 31	336119	20	97/05/15	104P/4W
HOT 32	336120	20	97/05/15	104P/4W
HOT 33	336121	20	97/05/15	104P/4W
HOT 34	336122	20	97/05/15	104P/4W
HOT 35	336165	20	97/05/15	104P/4W
HOT 36	336166	20	97/05/15	104P/4W
FLAT 1	336085	1	97/05/09	104P/4W
FLAT 2	336086	1	97/05/10	104P/4W
FLAT 3	336087	1	97/05/10	104P/4W
FLAT 4	336088	1	97/05/10	104P/4W
FLAT 5	336089	1	97/05/10	104P/4W
TIP 1	336167	20	97/05/09	104P/3W
TIP 2	336168	20	97/05/09	104P/3W
TIP 3	336169	20	97/05/09	104P/3W
TIP 4	336170	20	97/05/06	104P/4E
TIP 5	336171	20	97/05/06	104P/4E
TIP 6	336172	15	97/05/07	104P/3W
TIP 7	336173	20	97/05/06	104P/3W
TIP 8	336174	20	97/05/06	104P/3W
TIP 9	336133	20	97/05/06	104P/3W
TIP 10	336134	20	97/05/06	104P/3W
TIP 11	336135	10	97/05/07	104P/3W
TIP 12	336136	16	97/05/07	104P/3W
TIP 13	336137	20	97/05/07	104P/3W
TIP 14	336138	20	97/05/09	104P/3W
TIP 15	336139	20	97/05/08	104P/3W
TIP 16	336140	20	97/05/10	104P/3W
TIP 17	336141	20	97/05/10	104P/3W
TIP 18	336142	20	97/05/11	104P/3W
TIP 19	336143	20	97/05/13	104P/3W
TIP 20	336144	20	97/05/13	104P/4E
TIP 21	336145	10	97/05/13	104P/4E
TIP 22	336146	20	97/05/13	104P/4E
TIP 23	336147	20	97/05/13	104P/4E
TIP 24	336148	20	97/05/13	104P/3W
TIP 25	336149	20	97/05/13	104P/3W
TIP 26	336150	20	97/05/11	104P/3W
TIP 27	336151	20	97/05/13	104P/3W
TIP 31	336152	20	97/05/16	104P/3W
TIP 32	336153	20	97/05/16	104P/3W

TIP 33	336154	20	97/05/16	104P/4E
TIP 34	336155	20	97/05/15	104P/4E
TIP 35	336156	20	97/05/16	104P/4E
TIP 36	336157	20	97/05/16	104P/4E
TIP 37	336158	20	97/05/16	104P/4E
TIP 38	336159	20	97/05/16	104P/4E
TIP 39	336160	20	97/05/16	104P/4E
TIP 40	336161	15	97/05/16	104P/4E
TIP 41	336162	15	97/05/16	104P/4E

Total claims: 77

Total units: 1308

## LOCATION AND ACCESS

The Hot, Tip and Flat claims are located in the Liard Mining District in northern British Columbia on N.T.S. map sheets 104P/3,4,5 and 6. An overview of the claim outlines is presented as Figure 2 in the text of this report and copies of the applicable Mineral Titles Reference maps are included as Figures 2a - 2e. The claims extend to the south and east from the previous Cassiar townsite and encircle the claims held by International Taurus and Cusac Industries forming a ring approximately 30 kilometers in diameter, entered at longitude 129° 38'W, latitude 59° 12'N.

The claims may be partly accessed by road as they are crossed by the Stewart Highway, route #37. By road, the area is approximately 110 kilometers northeast of Dease Lake, British Columbia and 140 kilometers south of Watson Lake, in the Yukon Territory. The remainder of the claims are accessible by helicopter from either Dease Lake or Watson Lake.

## PHYSIOGRAPHY

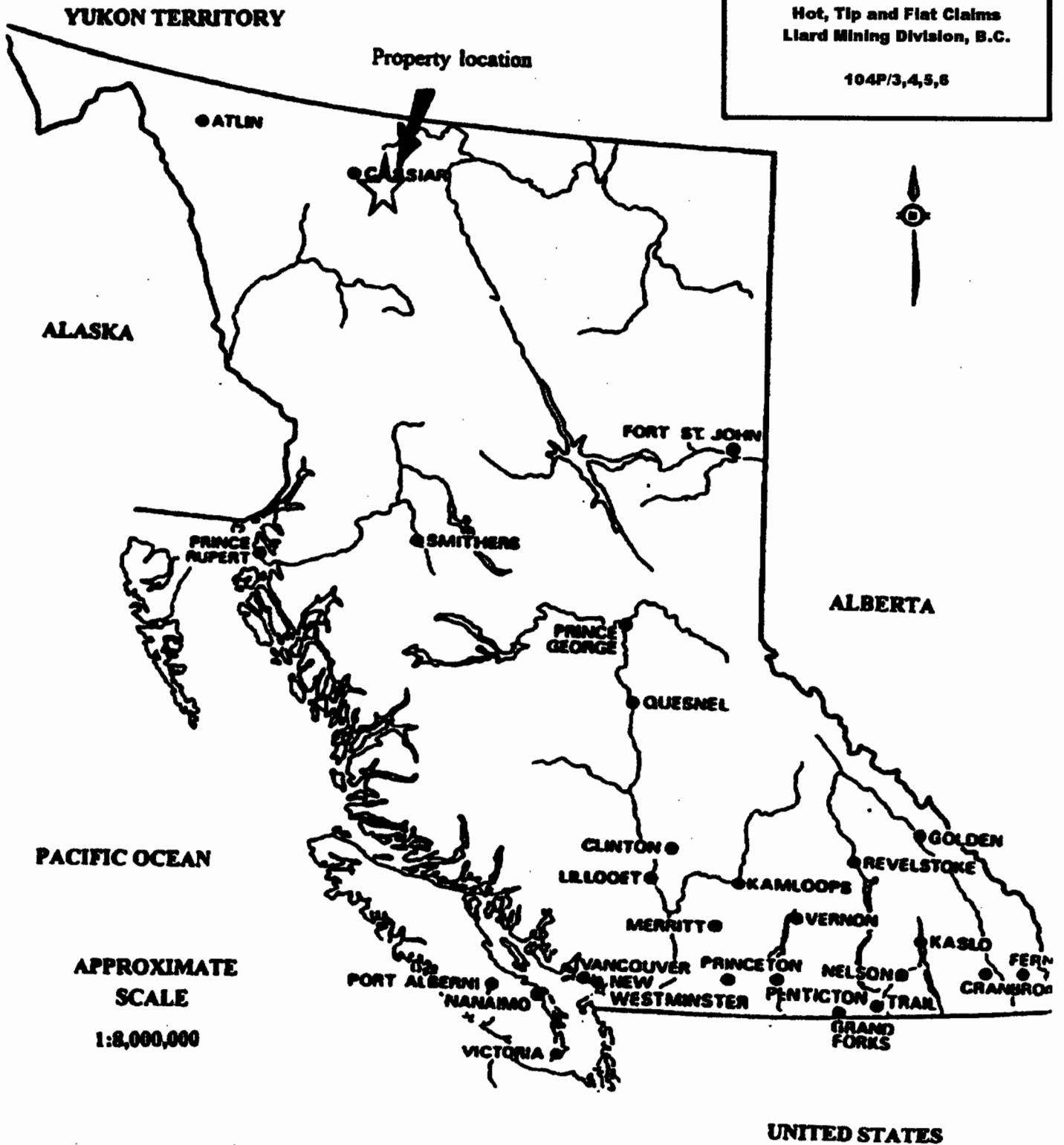
The Hot, Tip and Flat claims are located in the Cassiar Mountains where they are cut by the valleys of McDame Creek and Dease River. Approximately half of the claims are situated above the tree line, on alpine slopes and plateaus, and the remainder are in the moderate to densely treed, and locally swampy, river valleys.

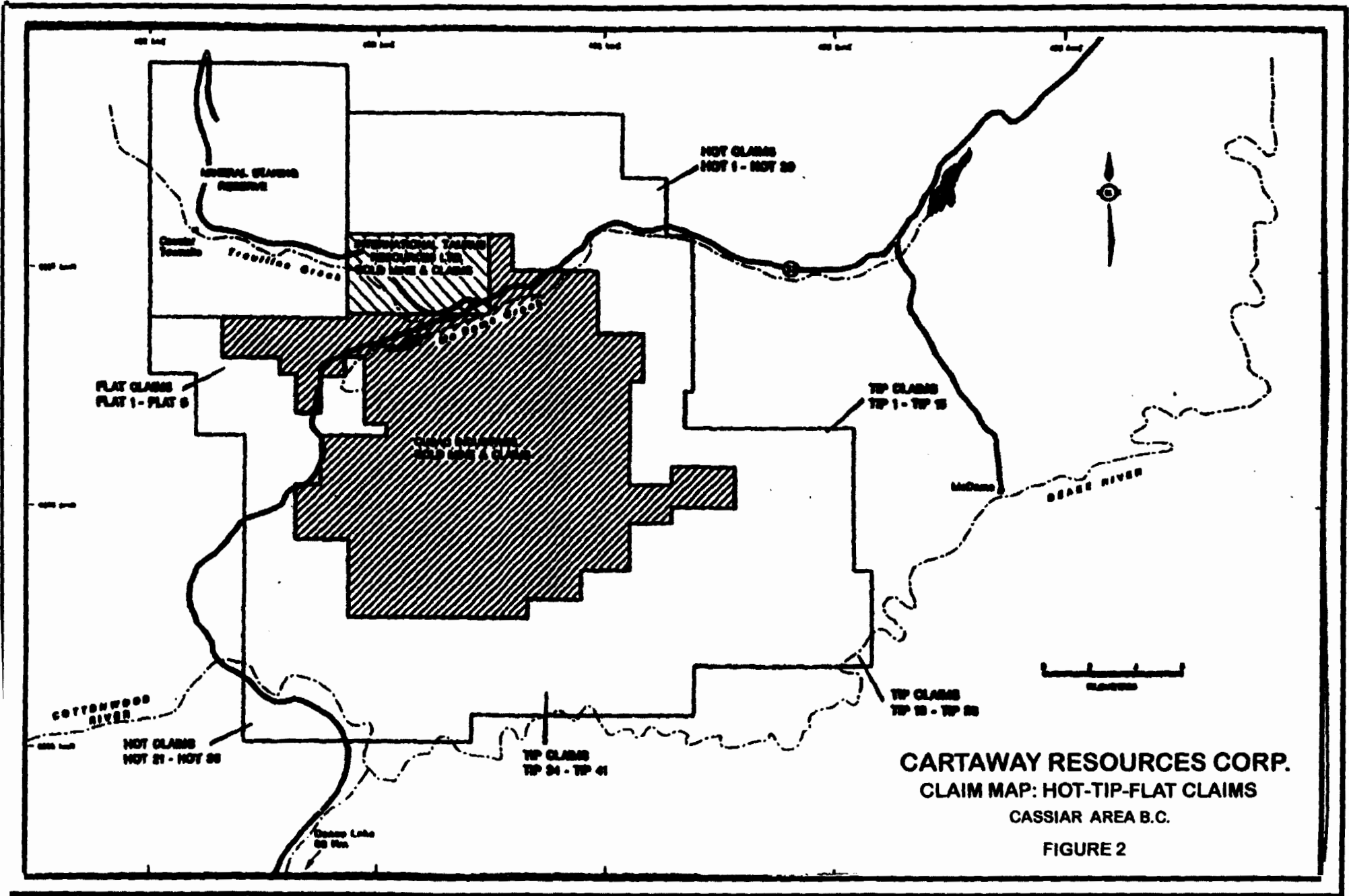
**CARTAWAY RESOURCES CORP.**

**FIGURE 1**

**Hot, Tip and Flat Claims  
Liard Mining Division, B.C.**

**104P/3,4,5,6**





**CARTAWAY RESOURCES CORP.**  
**CLAIM MAP: HOT-TIP-FLAT CLAIMS**  
 CASSIAR AREA B.C.  
**FIGURE 2**



Although the claims were staked in May after the beginning of spring break-up, deep snow and avalanches were not uncommon in the alpine. River valleys were snow free but flooded due to spring run-off.

## **PREVIOUS WORK**

Placer gold was discovered on McDame creek in 1874. Exploration in the area intensified after 1943 following the completion of the Alaska Highway. During the 1970s and 1980s several gold deposits were discovered and mined. At the present time there are several placer mining operations on some creeks in the vicinity of staked grounds. Throughout the area there are numerous documented deposits, prospects and mineral showings of different kinds. This report describes only the most significant deposits.

The area in the vicinity of staked claims has been explored extensively over the past three decades by several major and junior mining companies as well as individual claim owners and prospectors. Throughout the staked grounds and adjacent areas there are remnants of old exploration and mining works as well as old placer operations. Unfortunately, there are few records available concerning any of them and those that do exist are incomplete.

### ***Previous work on Cusac ground***

1937 - Consolidated Mining and Smelting Co. of Canada (Cominco) conducted a small prospecting, trenching and drilling program which outlined several ore-bearing veins.

On what is now the Pete claim, a prospector named Pete Hamlin exposed auriferous quartz veins in trenches and two shallow shafts between 1942-46.

The Cusac area was staked by Cusac Industries in 1977. Subsequent soil geochemistry, geophysics, trenching and diamond drilling programs conducted by Cusac revealed several gold bearing quartz veins. A total of 4.738 m in 79 diamond drill holes was completed in 1977. In subsequent years, Cusac conducted numerous exploration programs consisting of mapping, geochemistry, geophysics and diamond drilling on the Pete claim and the adjacent claims.

In 1982, underground development was initiated by Cusac. Grades in the drift were poor, and increased only toward the top of the raise.

Erickson Gold Mining Corp. optioned the Cusac ground in 1984. In 1985, Erickson discovered the Eileen vein on the Nu-Tara claim through mapping and trenching. Definition drilling followed and resulted in an economic orebody which was then developed by decline. Ore production followed during the summer of 1986. Further underground mapping and sampling resulted in the discovery of the Michelle vein. Reserves were depleted in 1988 and production in this area ceased.

Prospecting conducted in 1987 uncovered the Katherine vein and other smaller structures on the Nu-Tara claim. Underground drilling from the Eileen workings at the end of 1987 discovered high-grade quartz veins in the Michelle zone. However, follow-up drilling from surface and underground could not effectively outline reserves. A crosscut to this zone was driven in the fall of 1988 for approximately 1.3 km. The development was halted in 1989, following the discovery of more promising mineralization near surface.

In 1988, 1:5000 scale mapping and rock geochemistry were conducted to provide a framework to guide further exploration.

In 1989, Erickson conducted an integrated program of backhoe trenching, geological mapping, geophysics and diamond drilling in the Cusac area. The results of this work were the discovery of the Heather and Bain veins. A small ore-trade mineral inventory was defined, via trenching and drilling, on these veins.

Additional geophysics, geochemistry and diamond drilling were conducted in 1990, 1991, 1992 and 1993. Results of these programs were generally encouraging and warranted further exploration, since some of the mineralised structures were believed to have a potential for a significant extension.

During production years at the Erickson mine and adjacent areas there were 490,000 t ore mined, grading 15.5 g/t Au and 11.9 g/t Ag.

### ***Previous works on Table Mountain and adjacent area***

In 1934 several mineral claims were staked on Quartzrock creek following the placer gold rush on McDame creek. The following year the Vollaug vein was discovered and staked on Table Mountain and the Jennie vein in Erickson creek. From 1935 to 1937 veins in the area were extensively explored. A short cross was driven into the Jennie vein. Minor exploration activities took place until 1973, when Table Mountain Mines drove a decline and an adit on the west end of the Vollaug vein.

Agnes and Jennie Mining Co. Ltd. sampled and drilled the Jennie vein in 1974. Development of the Erickson mine began in 1977 and first ore was milled in 1978. Erickson Gold Mining Corp. continued exploration and development on the Jennie, Maura, Bear, Dease and Allison veins.

In 1979, Plaza Resources explored and commenced open pit development on the eastern portion of the Vollaug vein. These claims were optioned to Erickson, who explored, developed and mined the Vollaug vein from underground and surface. Reserves were depleted in the fall of 1988.

In 1990 a diamond drilling program was conducted by Erickson on the property which failed to outline significant ore-bearing structures.

In 1993, a diamond drilling program conducted by Cusac Industries on Table Mountain Property turned out encouraging gold values in several drill holes.

### ***Taurus grounds***

The Cornucopia occurrence, now called the Taurus mine, is located on Quartzrock creek about 9 km east of Cassiar. Staked in 1935, the mine produced from 1981 to 1988. The mine is located within the Sylvester Allochthon, which is composed of Upper Paleozoic to Lower Mesozoic volcanic, sedimentary and ultramafic rocks. The geology around the Taurus Mine is composed of massive to pillowed andesite to basalt flows. Gold mineralization occurs in east striking quartz veins, dipping to the south. Width of the veins varies from 50 cm to 2 m. Gold concentrations are greatest in the sulphide bands along the vein margins. Gold occurs as fine inclusions in pyrite, as fracture fillings associated with tetrahedrite, sphalerite, and chalcopyrite. The mine was developed on 5

levels from 1981 to 1988, mining ore from at least 6 different veins with an average grade of 6 to 7 g per tonne gold. In total, over 240,000 tonnes of ore was mined. Exploration programs in 1988 discovered new ore-bearing veins. Another program in 1994 attempted to establish sufficient ore reserves in these veins to justify a resumption of mining and milling operations on the Taurus property. This program outlined approximately 250,000 tonnes of probable ore reserves grading 0.179 oz Au/ton, occurring above the elevation of the old workings. In addition to this reserve, two new mineralised zones were discovered. Of these two, the Taurus West zone is in the most advanced exploration stage and a thick tabular deposit is indicated. The grade and thickness of the deposit could justify open-pit mining. On the B.M. and 88-1 zone, preliminary drilling results suggest that fault-controlled mineralised zones underlie both zones. These could persist over the entire area and if this is the case the discovery of a mega-million ton deposit is possible.

The newly discovered mineralization on the Taurus claims is believed to extent onto adjacent ground owned by Cusac Industries Ltd.. A major exploration program on the combined properties will be undertaken during 1995 by Cyprus Canada, Inc. which recently optioned Cusac and Taurus claims.

### ***Cassiar Asbestos Deposit***

The deposit lies within ultramafic bodies contained within the Sylvester Allochthon. These antigorite serpentized harzburgites occur along at least three distinct horizons which are probably major thrust fault surfaces. The Cassiar orebody as a whole dips about 45 degrees east and measures approximately 600 by 150 by 150 metres. Thrusts and faults slice the orebody into several blocks. The orebody is a fibre-bearing zone containing upwards of 10% cross-fibre chrysotile asbestos varying in length from 1 to 3 cm. Geological reserves in 1985 were estimated at 5,000,000 tonnes at 7.8% asbestos. Production ceased in 1992. Over the mine life between 1950 to 1992 there were over 35,000,000 tonnes mined which produced over 2,500,000 t of asbestos.

### ***Placer Mining Operations***

There have been placer operations on some creeks in the area in the past and there still are active placer mining works on some creeks. Mentioning all the past operations

would not be feasible due to the nature of this report and a scarcity of documentation. Outlined are two of the most important placer mining creeks.

### **Quartzrock Creek Placer**

This placer deposit avoided glacial erosion because it lies transverse to the northeast direction of ice travel. Unstratified glacial debris 4.4 to 6 m thick overlies a 3 to 4 m thick layer of stratified gravel on bedrock. Most of the placer workings have been performed at the confluence of Quartzrock creek and Troutline creek, on an old buried channel which trends northwest and has a lower gradient than the present creek bed. The channel has been drifted on for 600 m upstream.

Between 1876 to 1890 and 1921 to 1945, a total of 2400 ounces (68.3 kg) of gold was recovered. The source of gold is believed to be quartz veins occurring in greenstones and metasediments of the Sylvester Allochthon which underlie the area.

### **Snowy Creek Placer**

This placer was reported to be the richest in the Cassiar district. Snowy creek is underlain by quartzite, argillite, greenstone and limestone of the Sylvester Allochthon. Source of gold are quartz veins, which are in the vicinity of the creek. The mouth of the creek was the most productive, as well as the old channel deposits, lying on a high bed. From 1874 to 1890 and 1906 to 1910 placer mining produced a total of 4222 ounces (9120 kg) of gold.

### ***Other types of mineral deposits***

Various genetic types of mineral deposits, prospects and showings are scattered throughout the area. These include various types of skarn deposits and prospects, ultramafic-hosted asbestos deposits and auriferous quartz vein deposits and showings. Some of the above mentioned occurrences are described below.

### **Middle D. Pit**

Located 5 km south of Cassiar - silver-lead-zinc mineralization is emplaced as irregular east-west trending replacement shoots within Lower Cambrian Atan carbonates.

Locally the replacement bodies are conformable. Drilling has tested the deposit to a vertical depth of 90 m. Drill indicated reserves stand at 90,000 tonnes grading 6.3% Zn, 3.3% Pb, and 70 g/t Ag.

#### **Dead Goat, Balsam**

Skarn deposit approximately 4 km north of Cassiar asbestos deposit. Garnet-diopside-actinolite skarn is developed in steeply east-dipping marble near its contact with quartz monzonite. The skarn has been traced discontinuously over a strike distance of 600 m averaging 1.5 to 5.5 m in thickness. The main tungsten mineral is scheelite. Drill indicated and inferred reserves include 100,900 tonnes grading 0.49% WO<sub>3</sub> and additional 27,600 tonnes grading 0.39% WO<sub>3</sub> and 0.16% cooper.

#### **Storie, Casmo prospect**

Molybdenum deposit, situated 5 km south of Cassiar. Mineralization is associated with small quartz-feldspar porphyry bodies, which have gradational or interfingering contacts with quartz monzonite. Molybdenite occurs as selvages along quartz and quartz-pyrite bearing fractures and as smears or disseminations along dry or slickensided fractures. Mineralization is concentrated along the intrusive contact. Fluorite may occur with coarse-grained muscovite in fractures. Beryl occurs locally in vuggy quartz veins. The deposit lacks breccia zones and large scale quartz stockworks. The dimensions are approximately 1000 by 500 by 100 metres. Inferred ore in 1985 was 45,360,000 tonnes grading 0.137% molybdenum.

#### **Hunter, Theresa**

Hydrothermal quartz veins within the shear zone, up to 1 m wide and sparsely mineralised with pyrite, tetrahedrite, chalcopyrite, sphalerite and gold. Values are erratic, though assays as high as 6.8 g/t Au and 13.7 g/t Ag are reported from grab samples.

## GEOLOGY

### *Regional Geology*

The regional geology of the area is best illustrated on a 1:250,000 scale Geological Survey of Canada map #1110A, from GSC Memoir 319 by Hubert Gabrielse, part of which is included with this report (Figure 3).

The main rock unit in the area is the Sylvester Allochthon, a large composite slice of middle to late Paleozoic oceanic rocks that rests entirely on top of the Cassiar terrane, which is a northward displaced fragment of the western North American Paleozoic continental margin. The cherts and basaltic rocks of the Sylvester Allochthon overlie North American Carbonate and clastic strata across a planar, layer parallel basal fault that is generally gently dipping under the entire allochthon.

The Sylvester Allochthon is a northwest-southeast trending belt of rocks up to 50 kilometers wide in this area. It is bounded on the west by the Jurassic-Cretaceous granitic Cassiar intrusion, and on the east by Lower Paleozoic limestones and dolomites of the Cassiar Terrane, with glacial and glacio-fluvial sediments underlying the Liard Plane to the northeast.

Two major folding events can be recognised and a third, older event is suspected. Phase I folds, seen only in the northeast, have a flat gently plunging, north-westerly trending axes. The folds are asymmetrical recumbent structures that probably formed in the Jurassic during north-easterly direct thrust faulting. Phase 2 folds are characterised by mesoscopic minor folds with inclined axes that trend at 55 degrees azimuth. South-easterly plunging phase 3 minor folds have well-developed axial planar cleavage and are widespread throughout the area.

Faulting in the area involves flat lying thrust faults of Jurassic age as well as younger steeply dipping normal transverse faults with considerable lateral offset.

These steeply dipping fault and fracture zones are the locales of the well mineralised northeast to east-north-easterly trending greenstone-hosted vein systems that are being mined at the Taurus and Cusac sites. The most southerly is along the shore of McDame Lake. The northern most system starts east of the Cassiar road by Quartzrock

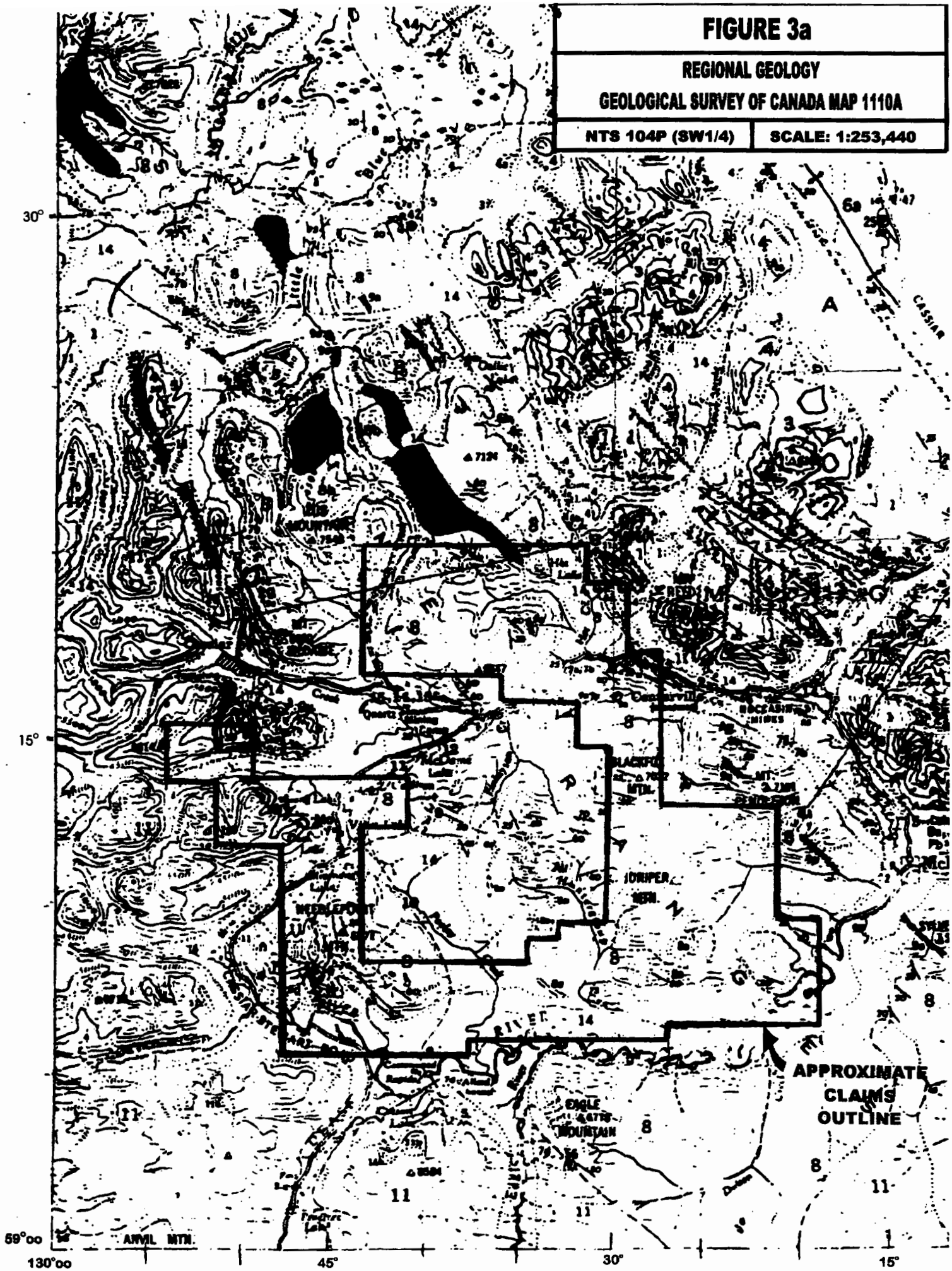
# FIGURE 3a

## REGIONAL GEOLOGY

GEOLOGICAL SURVEY OF CANADA MAP 1110A

NTS 104P (SW1/4)

SCALE: 1:253,440





**FIGURE 3b**

**REGIONAL GEOLOGY  
GEOLOGICAL SURVEY OF CANADA MAP 1110A**

NTS 104P (SW1/4)

SCALE: 1:253,440



**LEGEND**

- PLEISTOCENE AND RECENT**
- 14 Glacial and glacio-fluvial deposits, stream deposits, alluvium, etc., and
- TERTIARY OR PLEISTOCENE**
- 13 Sand
- TERTIARY AND (?) EARLIER**
- 12 Conglomerate, sandstone, shale, siltstone and ls., may be older
- JURASSIC AND/OR CRETACEOUS**  
GARDNER STRATIGRAPHY
- 11 Quartz conglomerate, gneissiferous granite, pegmatite, gneiss, amphibolite gneiss; ls., granite gneiss; may be late Cretaceous or Tertiary; ls., contains fragmentary radiolites; ls., contains granitic inclusions
- MISSISSIPPIAN**  
MIDDLE MISSISSIPPIAN
- 10 NIZI FORMATION: limestone, shaly limestone, dolomite, pyroclastic, psammite-conglomerate
- MISSISSIPPIAN (?)**  
LOWER MISSISSIPPIAN (?)
- 9 Sandstone, psammite, shale, pyroclastic, minor metamorphosed volcanic rocks; ls., mainly sandstone
- DEVONIAN AND MISSISSIPPIAN**  
UPPER DEVONIAN AND LOWER MISSISSIPPIAN  
DUNDAS GROUP
- 8 Gneissiferous, shaly quartzite, shale, siltstone, slate, quartzite, pyroclastic limestone, conglomerate ls., limestone; ls., metamorphosed volcanic rocks; ls., quartzite, limestone, shale, siltstone, phyllite; may include minor T and S ls., shale and slate
- DEVONIAN**  
MIDDLE AND (?) UPPER DEVONIAN  
GARDNER GROUP 17a, 7a1
- 7 7a, black, fine dolomite, dolomite breccia, limestone; Middle Devonian; 7a, shaly limestone; may be in part Upper Devonian; 7a, unbedded 7a, ls., ls., unbedded 7a, 7a, ls.
- ORDOVICIAN, SILURIAN AND (?) DEVONIAN**  
GARDNER GROUP 16a, 6a
- 6 ls., dolomite, shaly dolomite, dolomite breccia, sandy dolomite, dolomite on sandstone, quartzite; Ordovician and Silurian; ls., sandstone and quartzite; dolomite, dolomite; shaly dolomite breccia; Silurian; ls., limestone dolomite; may be in part or entirely Devonian; ls., dolomite breccia may be in part or entirely Devonian
- CAMBRIAN AND ORDOVICIAN**  
MIDDLE AND (?) UPPER CAMBRIAN, LOWER AND MIDDLE ORDOVICIAN  
MICHALA GROUP
- 5 Limestone, calcareous shale, phyllite limestone, calcareous phyllite, quartzite and calcareous sand and shale, conglomerate, gneissiferous, may be in part or entirely younger ls., may include silicified sand or young ls. / Microlepis
- CAMBRIAN**  
LOWER CAMBRIAN  
ATLAN GROUP 6a, 6
- 4 Limestone, dolomite, minor shale; ls., may be in part or entirely Permian; ls., may be in part or entirely or young ls. / Devonian
- 3 Quartzite, shale, slate, siltstone, psammite-conglomerate, calcareous
- 6000 MERE GROUP**
- 1 Limestone, dolomite, sand, siltstone, sandy limestone, red and green siltstone, shale, limestone; other quartzite, siltstone, phyllite, dolomite shales; ls., may locally include zone 2
- 2 Limestone, pyroclastic, dolomite shales, gneissiferous and dolomite calcareous shale
- VERMILION GROUP (CAMBRIAN AND/OR EARLY)**
- A Quartzite, siliceous quartzite, quartzite shales, gneissiferous quartzite limestone, limestone, shale, psammite, pyroclastic ls., mainly quartzite limestone; may be Lower Cambrian; ls., may include beds equivalent to S; ls., mainly sandstone

- Bedding (inclined, vertical, horizontal) ..... / / /
- Siltstone, quartzite, dolomite (inclined) ..... / / /
- Limestone (arrow indicates direction of plunge) ..... / / /
- Fault (defined, assumed) ..... - - - - -
- Anticline (defined, arrow indicates direction of plunge) ..... - - - - -
- Syncline (defined) ..... - - - - -
- Fossil locality (number referred to in text) ..... 071
- Mineral deposit ..... 071

Creek bridge and passes southwest toward Troutline Creek. In addition to these northeasterly trending belts, some of the largest and most continuous veins in the region are ribboned relatively flat-lying structures located at or near the greenstone-argillite contact, along flat lying thrust faults.

There are other types of mineralization in the Cassiar area besides the mesothermal gold veins of the Taurus and Erickson (now Cusac) properties. Nelson and Bradford in their 1989 paper categorise mineralization as follows:

1. Early Mississippian sedex deposits; minor massive sulphide volcanogenic exhalites; bedded Permian rhodonite.
2. Early Cretaceous mesothermal gold-quartz and related veins; the Erickson-Taurus system.
3. Early Cretaceous asbestos stockworks: the Cassiar and McDame mines.
4. Late Cretaceous and Eocene porphyrys, skarns, replacements and veins associated with the Cassiar and Mount Haskins stocks, created by the interaction of intrusions, high angle faults and Paleozoic carbonates.

### ***Property Geology***

The following description of the Geology in and around the property area is taken from papers by Joanne Nelson and Larry Diakow, of the British Columbia Department of Mines. Figure 4 presents a geological map by Tekla Harms and Joanne Nelson which covers a portion of the claims area.

Host rocks for the gold bearing quartz veins are Sylvester Group volcanics and sedimentary rocks of the Mississippian to Permian age that form the core of the McDame synclinorium. These rocks are mainly a greenstone-chert-argillite assemblage, and are divisible into two major units: a lower sedimentary-volcanic assemblage consisting of fine grained clastic rocks, andesitic fine grained volcanic rocks, and diabasic or porphyritic intrusions, and an upper part composed primarily of massive and pillowed basalt.

The quartz veins occurring in these greenstones have extensive wall rock halos of pyrite with bleached and ankeritic alteration. Gold values occur in both the

quartz and adjacent altered volcanics and are associated with pyrite and minor amounts of arsenopyrite, tetrahedrite, sphalerite and chalcopyrite.

Low angle thrust faults are believed to be the most important features controlling ore deposition. The most lateral extensive, fairly flat lying thrust fault places younger, and more impermeable, argillite units of the more permeable Sylvester Group sediments. This relatively horizontal surface acted as a physical and chemical cap, trapping rising hydrothermal fluids along the fault plane. The sediments underlying the thrust have been extensively silicified and quartz veins are also localized in the thrust plane, indicating this was the main channel for gold-bearing hydrothermal solutions.

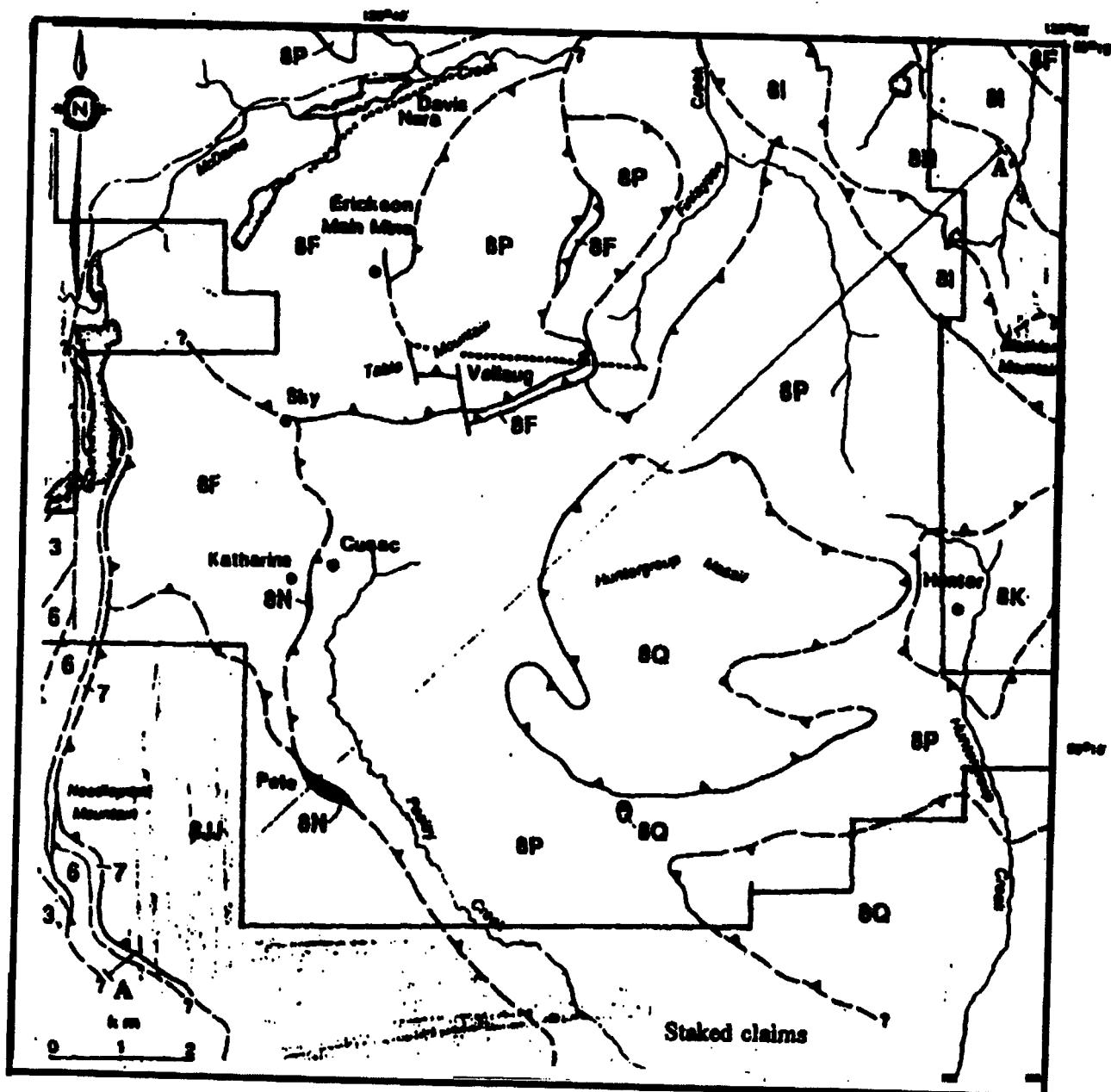
The mesothermal gold mineralization at Erickson and Taurus Mines is localized at the base of the Table Mountain sedimentary unit, which has acted as an effective barrier to migration of fluid due to its inability to sustain fractures. Veins either parallel the basal contact of the Table Mountain sediments, or develop in the east-northeast-trending fracture system that abuts the basal contact. There are two types of veins (Diakow and Pantaleyev, 1982). Type I veins (i.e. Jenny, Taurus) occupy steep fractures in basalts below the base of the sediments, with gold contents increasing toward contact. Type II veins (i.e. Vollaug) follow the base of the sediments. Structural controls on the Erickson mineralization system stem from Sylvester allochthon structural patterns (flat-lying thrust faults), and from younger and steeper fracture sets which control circulation of mineralising fluids within the allochthon.

The source of these fluids is believed to be a granitoid intrusion which is unrelated to the nearby Cassiar batholith and does not outcrop on the surface. This is based on occurrences of granitic intrusions in lamprophyre dykes as well as in drillcore from the Table Mountain area. A rising intrusion could have caused the steeply dipping, dominantly east-west trending, slightly arc-shaped fractures which were subsequently filled by the mineralised quartz veins. Deposition occurs in the steep fracture system emanating from the thrust and the associated alteration of the greenstones is more extensive near the thrust plane. Gold deposition and alteration appear to be restricted to a vertical range of some 400 feet above the thrust fault.

To the south of Table Mountain, near Pooley Creek and Huntergroup Creek, the thrust plane begins to dip to the south, towards the Dease River. This, along

**FIGURE 4 PROPERTY GEOLOGY**

**HOT, TIP and FLAT CLAIMS  
NTS 104P/4 (NE1/4)  
FROM TEKLA IIARMS, 1989**



**EXPLANATION**

**Staked Claims**

0

System Allegation

SQ

Hoodspout Massif  
Anglo Porphyry Mass  
green to light brown with dark  
shades and local tan, argillous  
volcanic and sedimentary

SP

Tate Mountain Sediments  
dark shale, quartzite and  
other igneous with  
folding structures

SN

Tate Mountain Lithology  
ultrabasic, talciferous  
and talciferous

SF

Tate Mountain Volcanics  
sparsely green basalt with  
large lenses of black, red  
sedimentary and pyroclastic

BJ

Hoodspout Mountain Basalt  
green basalt with green  
shale, locally overlying  
with siliceous spines

BK

Volcanic Sedimentary Unit  
green basalt with  
black grey shale

SI

Staked Mountain Basalt  
green igneous basalt  
with dark shale spines

SH

High Lava Cone  
interbedded shale with  
green basalt layers

**Devonian Mesoproterozoic**

7

Low Group  
black and greenish grey argillous and sandstone

**Low Devonian**

8

High Group  
dark to light grey, red to brownish calcareous

**Carboniferous**

3

High Group  
brown to black shales

Low angle fault

dash on upper plate  
dashed where approximately located

High angle fault

dashed where approximately located

Contact

dashed where approximately located

with the possible existence of other steeply dipping fracture zones in the vicinity, make the area worthy of future exploration.

## **AIRBORNE MAGNETOMETER SURVEY**

### ***Instrumentation***

A Scintrex H8 Optically Pumped Cesium Split Beam Sensor was mounted in the nose of the towed bird. The Larmor frequency output was processed by a High-Sense magnetometer counter that provides a resolution of 8 ppb (in a magnetic field of 50,000 nT this resolution is equivalent to 0.004 nT) ten times per second.

A Novatel 751 ten channel GPS receiver, which is an integral component of the HS-GFCS-II flight control system, was used with its' antenna mounted on the towed bird to provide precise magnetometer positioning.

A Terra TRA 3500 radar altimeter was mounted on the towed bird. This instrument operates to zero clearance and records the terrain clearance of the magnetic sensor.

The High-Sense GFCS-II geophysical flight control system monitored and recorded magnetometer, altimeter and GPS equipment. Input from the various sensors was monitored every 0.005 seconds for precise co-ordination of geophysical and positional measurements.

GPS positional co-ordinates and terrain clearance of the towed bird were presented to the pilot by means of LCD touch screen display.

The magnetometer response, 4th difference, and altimeter profile were also shown on the LCD touch screen display for real time monitoring of equipment performance.

Analog and digital input ports were monitored 200 times per second. Digital recording of the magnetometer, altimeter and GPS time was carried out at ten samples per second with a time synchronization of 0.05 seconds. Line number, GPS time and system time were also recorded for use during subsequent differential GPS correction.

A GEM Systems Overhauser magnetometer (GSM-19) was operated as a base station to record diurnal variations of the earth's magnetic field. Readings with a resolution of 0.1 nT were recorded digitally every second, and synchronized with GPS time for accurate correction of the airborne data.

A Novatel 751 ten channel receiver with a fixed antenna was also active at the base of operations. Raw satellite data was digitally recorded to enable differential correction of the corresponding airborne data.

The output of the magnetic and GPS monitors was recorded digitally on a dedicated PC. A visual record of the last forty minutes of activity was graphically maintained on the computer screen to provide an up to date appraisal of significant activity. At the conclusion of each production flight raw GPS and magnetic data were transferred to the main compilation computer.

A Pentium PC computer and a Hewlett Packard PaintJet color printer were used for field data processing and presentation. Processing software and procedures were developed by High-Sense Geophysics Limited, and include the Geopak RTICAD imaging system.

### ***Field Survey***

The field survey was conducted according to the following parameters:

Traverse Line spacing	: 100 meters
Control Line spacing	: 2000 metros
Nominal Terrain clearance	: 30 meters (98') sensor height 52 meters (170') aircraft height
Navigation	: Global Positioning System
Traverse Line direction	: North-South
Control Line direction	: East-West
Measurement interval	: 0.1 sec
Airspeed (nominal)	: 72 km/hr
Measurement spacing	: 2.0 meters
Airborne Digital Record	: Radar Altimeter Total Field Magnetics Time (Local and GPS) Raw Global Positioning System
Base Station Record	: Ambient Total Field Magnetics ( no pre-established activity limit )

Raw Global Positioning System  
Time (Local and GPS)

The aircraft used was a Bell 206B Jet Ranger II helicopter (G-WMM) owned and operated by Pacific Western Helicopters, Prince George, BC.

A magnetic and GPS base station site was established at the Pacific Western Helicopter base in Dease Lake during the course of survey operations. The GPS antenna should be located at an accurately surveyed position point, since positional errors are carried through to the differentially corrected data. Base station location used for this survey was: **Latitude: 58° 25.0' 38.35" N** **807 m asl**

**Longitude: 130° 0.0' 53.20" W**

Data recorded by the airborne and base station systems was transferred to the field compilation system. As each flight and/or area was completed, the following compilation operations were carried out. The GPS data was differentially corrected to remove errors introduced by 'selective availability', an intentional accuracy degradation method used by the military. The correction process uses the known fixed location of the base station to calculate the error associated with each satellite. These errors are then removed from the survey GPS data enabling a position to be calculated with an accuracy in the order of three meters, with four or more satellites in view. Satellite visibility and coverage was good throughout field operations. Occasionally satellite visibility decreased when surveying into valleys where large mountains would block the satellite signal. Generally, both GPS receivers were tracking a minimum of eight satellites.

The navigational correction process yielded a flight path expressed in WGS 84 Latitude-Longitude co-ordinates. Transformation to local Clarke 1866 (NAD 27) UTM co-ordinates used the following projection parameters :

	Semi-major axis (a)	Flattening (f)
WGS 84	6378137.0	298.257223563
Clarke 1866 (NAD 27)	6378206.4	294.9786982

Local datum shift applied :

Delta X : 7

Delta Y : -162

Delta Z : -188

UTM central meridian = 129° W (Zone 9)

False Easting : 500,000

False Northing : 0

Diurnal variations recorded by the base station were subtracted directly from the aeromagnetic measurements to provide a first order diurnal correction. When the magnetic variations were noted to occur due to man-made causes, such as equipment passing by the sensor, they were edited out prior to applying the diurnal correction.

Optically pumped magnetic sensors have an inherent heading error, typically several nT peak-to-peak, as the sensor is rotated through 360 degrees. On reciprocal flight line directions the heading error is reasonably predictable and the corresponding correction made on the basis of aircraft heading.

Control lines, to be used in the event that base station subtraction did not provide adequate level correction, were flown perpendicular to the traverse lines. Residual differences between control and traverse lines were used to carry out a further refinement of diurnal and heading errors.

Any apparent cultural effects noted in the magnetic maps were not removed from the data.

## DATA PRESENTATION

Data were provided as digital files which included the following information: easting (NAD27), northing (NAD27), fiducial, time, radar altimeter (feet), diurnal, total magnetic field intensity (corrected). These data were processed using Geopak and RTICAD software packages to grid the magnetic data and produce the flight path recovery and magnetic contour maps presented here.

The geophysical plan maps presented in this report are annotated with both latitude/longitude and UTM (NAD-27) co-ordinates. Additionally, several of the roads,



rivers, mountains and the claim group outline have been digitized from 1:50000 and 1:250000 maps to provide recognisable reference points.

**Table 2 - List of Maps**

Figure 1	LOCATION MAP	Text
Figure 2, Figures 2a-2e	CLAIMS MAP NTS 104P/3W,4E,4W,5E,6W	Text Pocket
Figure 3a, 3b	REGIONAL GEOLOGY	Text
Figure 4	PROPERTY GEOLOGY	Text
Plate G1A	FLIGHT PATH RECOVERY MAP	Pocket
Plate G2A	TOTAL MAGNETIC FIELD INTENSITY CONTOUR MAP	Pocket
Plate G3A	COMPILATION AND INTERPRETATION MAP	Pocket

## DISCUSSION OF RESULTS

Due to the odd shape of the claim group, the survey results are discussed as four blocks, identified as the West, South, Southeast and North blocks. The magnetic trends and anomalies discussed in the text of this report are identified as M-1 through M-13 and are highlighted on the compilation and interpretation map, Plate G3A.

### *West Block*

A strong magnetic high (M-1) along the western edge of the survey reflects the Cassiar batholith. The well developed gradient forming the eastern edge of the magnetic high outlines the near surface edge of the batholith.

Very low magnetic readings immediately east of the Cassiar batholith likely reflect the Earn Group (middle Devonian) and McDame Group (lower Devonian)

sediments. These low magnetic backgrounds contain a weak magnetic high linear (M-2), approximately 1.5 to 2 kilometres to the east of, and roughly parallel to, the Cassiar batholith. This trend may be mapping a slightly higher magnetic susceptibility facies within the sediments. The eastern edge of this linear parallels the thrust fault separating the Earn and McDame group sediments from the upper Devonian Sylvester Group.

A narrow, high amplitude magnetic response (M-3) forms a N141°E striking linear which extends south-easterly from Needlepoint Mountain. It is well defined for approximately 2.5 kilometres and weakly defined for another 4 kilometers. This anomaly is unidentified at this time. It roughly parallels one of the drainages in the area and may be related to topography or faulting.

M-1, M-2 and M-3 converge along the western flank of Needlepoint Mountain. The trends form a circular pattern which is currently unexplained. It could be an artifact of the interference patterns formed by the converging trends, topography or a fold structure.

### ***South Block***

Background magnetic responses across this area are relatively subdued and generally reflect the ENE trending topography, with higher magnetic values associated with higher elevations. This could be related to thickening overburden layers along the Dease River valley. Two anomalous magnetic trends are mapped within the area.

A strong magnetic high forms a N60°W trending magnetic high linear (M-4) which is traced for some 7 kilometres and is considered open in both directions. Glacial and fluvial deposits cover this area however a small window of limestones is mapped which confirms the NW-SE strike. This anomaly is likely reflecting a magnetic facies within the Sylvester Allochthon. Three distinct sections are noted along this trend. The southernmost portion is approximately 1.8 kilometres wide, the central portion is approximately 1.0 kilometres wide and the northern portion is less than 300 metres wide. These disruptions are attributed to north-easterly (~N70°E) trending faults. This interpretation is supported by a magnetic low linear, which strikes south-westerly from M-4.

Magnetic trend M-5 is comprised of three narrow, weak magnetic highs which strike approximately east-west, paralleling the southerly facing slopes in the area. The responses are likely generated by thin layers with a slightly higher magnetic susceptibility and the patterns formed reflect the dominant geological strike across the area.

### ***Southeast Block***

Two distinct background magnetic responses are observed in this area. A large, magnetic low, roughly 7 kilometres across covers the southeast corner of the survey area. To the north the magnetic intensities increase along a relatively consistent gradient of approximately 15 nTs/km. Four anomalous magnetic responses are superimposed on these backgrounds.

M-6 is a complex magnetic response which lies within the background magnetic low. It is basically comprised of a high core, some 3 kilometres long, elongated N70°E and a prominent low along its' north-eastern flank. The anomaly is disrupted in several places, most likely by fault activity. The larger pattern generated could be attributed to a south-westerly plunging fold. Projection of this fold axis to the southwest coincides with one of the north-easterly trending faults interpreted to cut M-4.

M-7 is a circular magnetic anomaly located approximately 2 kilometres southeast of the Hunter deposit, where mineralised hydrothermal quartz veins are hosted within a shear zone. The anomaly consists of a high intensity core with a prominent low along its' northern flank. The character suggests an intrusive type source, possibly dipping steeply to the south-southeast. The anomaly is coincident with Juniper Mountain and minor undulations may be attributed to topography.

M-8 is a magnetic high located in the northeast corner of this area, along the slopes of Mt. Pendleton. It is only partially defined and may be related to a major north-westerly striking magnetic high, discussed below as M-10.

M-9 is a partially mapped anomaly which appears to be coincident with a cirque located on the south-western slopes of Blackfox Mountain. Additional surveying to the west is required to define this anomaly.

### ***Northern Block***

The northern portion of the survey area contains the highest amplitude and most complex magnetic responses seen. They appear to align in four north-westerly trending bands, each of which contains several localized anomalies.

M-10 is a broad magnetic high which strikes N30°W across the north-eastern edge of the survey area. This is a large, formational response which is traced for over 7 kilometres and is considered open in both directions. No significant cross structures are observed along this trend. Regional geological mapping suggests the magnetic high may be reflecting Lower Cambrian sediments and the western edge of the anomaly is controlled by a south-easterly dipping thrust fault.

Trend M-11 is comprised of three magnetic highs, which align to form a discontinuous, N40°W trending lineation located 2 to 3 kilometres west of M-10. M-11a and M-11b are interpreted as mapping the Table Mountain ultramafic (serpentine, peridotite, dunite) facies of the Sylvester Allochthon. A sharp magnetic low along the eastern flank of M-11b infers that the contact in this area dips shallowly to the west, and is likely associated with thrust faulting. M-11c is located approximately 6 kilometres southeast of M-11b. It is roughly coincident with the north-eastern end of a south-westerly trending topographic ridge and may be reflecting a flat lying cap of ultramafic rocks.

Trend M-12 is comprised of three magnetic highs which form a discontinuous, N50°W trending lineation located some 2.5 to 3.5 kilometres southwest of M-11. All three anomalies are located near the 5000 metre elevation, which suggests they may be stratigraphically controlled. The northernmost anomaly (M-12a) is dominant and described as a circular magnetic high, approximately 1.7 kilometres across and flanked to the northeast and northwest by strong magnetic lows. Geological mapping has identified Table Mountain ultramafics to the north and this response is interpreted as an unmapped occurrence of the same material. M-12b is located some 4 kilometres southeast of M-12a. It appears to contain two separate cores and is interpreted as another occurrence of ultramafic material. M-12c is located some 6 kilometres southeast of M-12b and exhibits

a slightly lower amplitude. It is unclear whether this anomaly is reflecting ultramafic rocks.

M-13 is comprised of several very small magnetic highs which appear to ring the M-12 trend. Like M-12, these anomalies appear to be focused along the 5000 meter elevation contour and are interpreted as small, near surface pods of ultramafic material.

## SUMMARY AND CONCLUSIONS

An airborne magnetometer survey was flown between May 9<sup>th</sup> and 16<sup>th</sup>, 1996 over the Hot, Tip and Flat claims in the Cassiar area of British Columbia. The survey was flown by High-Sense Geophysics Ltd. on behalf of Cartaway Resources Corp. The intention of the survey was to assist in the geological mapping of the area surrounding the operating gold mines and existing claims of both International Taurus and Cusac Industries in order to direct ground exploration.

Traverse survey lines were oriented north-south and spaced at 100 metre intervals while control lines were oriented east-west and spaced every 2000 metres. Total magnetic field intensity data was recorded at a rate of 10 samples/second which translate to a nominal measurement spacing of 2 metres. A total of 3,678 line kilometres of data was gathered.

Thirteen magnetic lineations and trends were selected as representing regional structural features. The Cassiar batholith is reflected as a strong magnetic high (M-1) at the western edge of the survey area. Linears M-2 and M-3 reflect structures in the Cambrian to Lower Devonian rocks below the Sylvester Group. M-2 parallels a northerly trending thrust fault underlying the Sylvester group while M-3 reflects a north-westerly oriented cross structure. M-4 is a north-westerly trending unit which is apparently cut by east-north-easterly trending faults. M-5 is a series of easterly trending lineations which reflect relatively undisturbed, flat-lying sediments in the southern portion of the claims area. M-6 reflects a complex, fault deformed area, possibly centred on a south-westerly plunging fold. M-7, M-8 and M-9 are localized magnetic anomalies which may represent small, intrusive plugs in the eastern portion of the survey grid. These three anomalies occur in areas of extreme topography which downgrades their reliability. M-10 is a broad

magnetic high reflecting north-westerly trending Lower Cambrian sediments which cross the north-eastern edge of the survey area. M-11, M-12 and M-13 are areas of very high magnetic intensity in the northern portion of the claims area and are interpreted as reflecting flat-lying layers of ultra-mafic rocks.

## RECOMMENDATIONS

The thirteen magnetic lineations and the interpretation presented here should be confirmed and identified by geological mapping. The following areas have been selected as warranting specific attention at this time:

1. The area along the western flank of Needlepoint Mountain covered by the Hot 29, 30, 31, 32 and 33 claims is selected. Three magnetic trends converge in this area which suggests complex structures.
2. The north-easterly trending faults reflected by the displacement along the M-4 trend upgrade the Tip 22, 23, 32, 33, 34 and 35 claims.
3. Faulting along and across a SW plunging fold reflected by M-6 are considered favourable structures and upgrade the Tip 17, 18, 25 and 26 claims.
4. Large areas in the northern portion of the claim block appear to be underlain by ultramafic rocks (M-11, M-12 and M-13). This interpretation upgrades the entire area (Hot 1-20 and Tip 1-2 claims) as having excellent potential for asbestos mineralization.

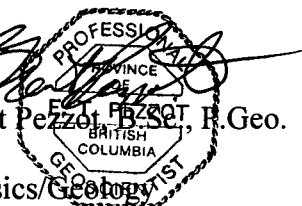
Grass roots exploration programs, including geological mapping, prospecting and regional geochemistry (stream and silt sampling) are recommended across these areas of interest. These surveys should be preceded by a detailed research of all previous work done on adjacent claims, with particular attention afforded to ground or detailed magnetic surveys. Concurrently, a more detailed analysis of the airborne magnetic data should be undertaken in order to highlight localized structures.

Respectfully submitted

per S.J.V. Consultants Ltd.,

  
E. Trent Pezzot, B.Sc., F. Geo.

Geophysics/Geologist



## COST BREAKDOWN

1. Helicopter-borne magnetic survey  
High Sense Geophysics Limited, Toronto, Ontario  
3678 line km plus mobilization/demobilization ..... \$ 83,117.07
  2. Helicopter support for helicopter-borne magnetic survey  
Pacific Western Helicopters Ltd.  
Dease Lake, B.C.  
61.6 hours plus fuel ..... \$ 47,968.28
  3. Interpretation and report compilation  
S.J.V. Consultants Ltd.  
Delta, British Columbia ..... \$ 4,229.18
- TOTAL: .....\$135,314.53**

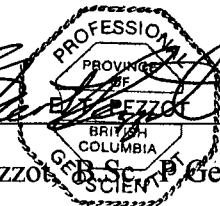
## APPENDIX 1

### *Statement of Qualifications*

I, E. Trent Pezzot, of the city of Surrey, Province of British Columbia, hereby certify that:

- I graduated from the University of British Columbia in 1974 with a B.Sc. degree in the combined Honours Geology and Geophysics program.
- I have practised my profession continuously from that date.
- I am a registered member of the Association of Professional Engineers and Geoscientists of British Columbia.
- I have no interest in Cartaway Resources Corp. or any of their subsidiaries or related companies, nor do I expect to receive any.

December 10, 1996

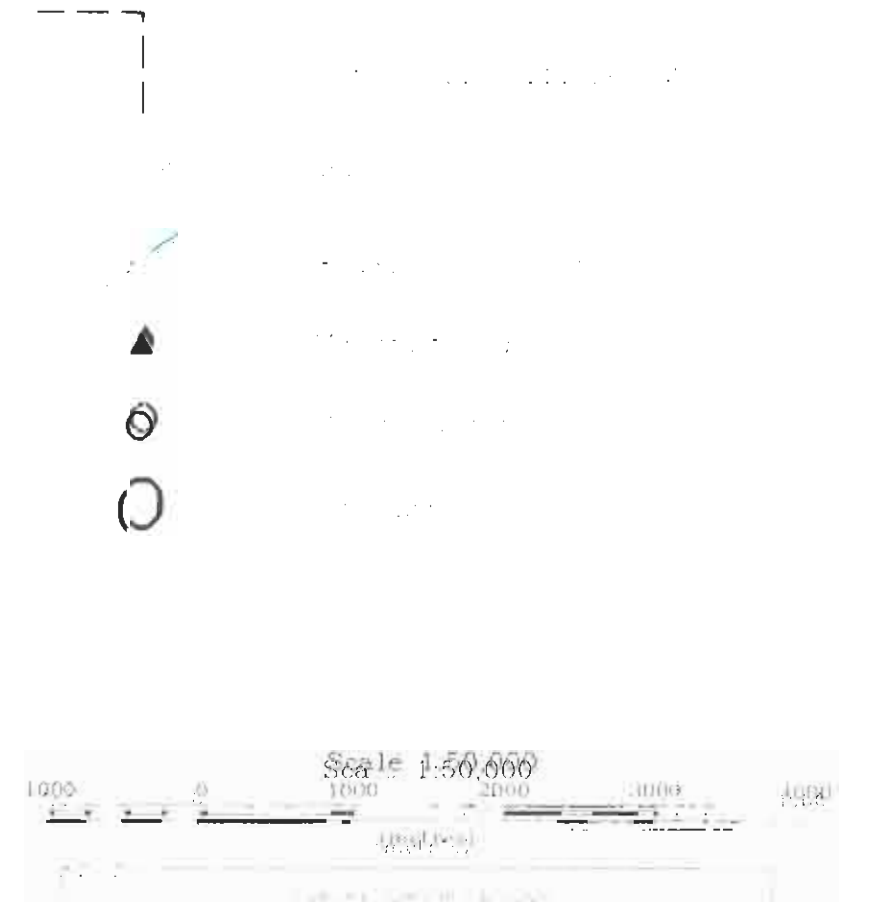
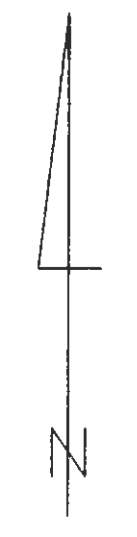
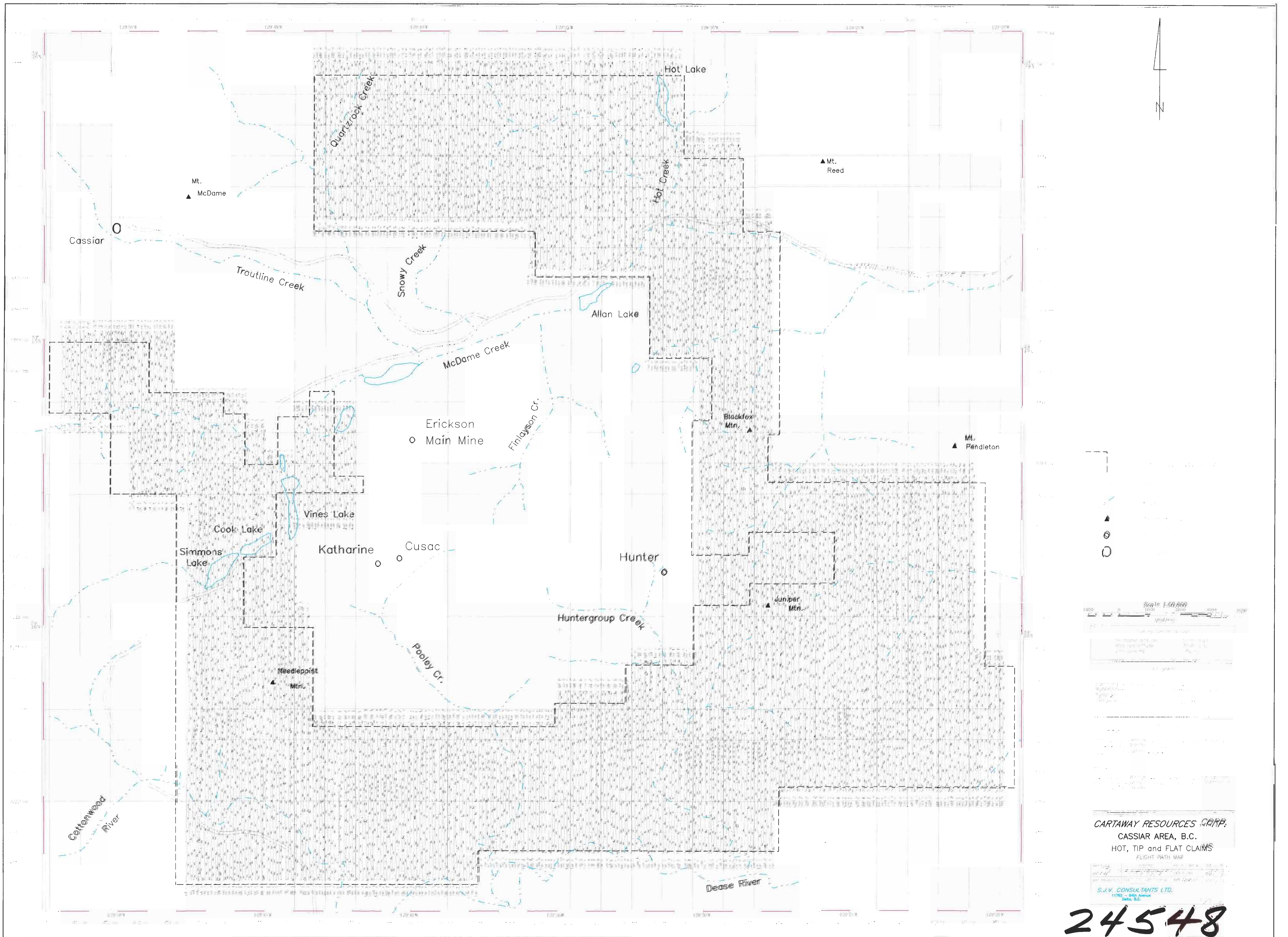
  
E. Trent Pezzot, B.Sc., P. Geo.



## APPENDIX 2

### *References*

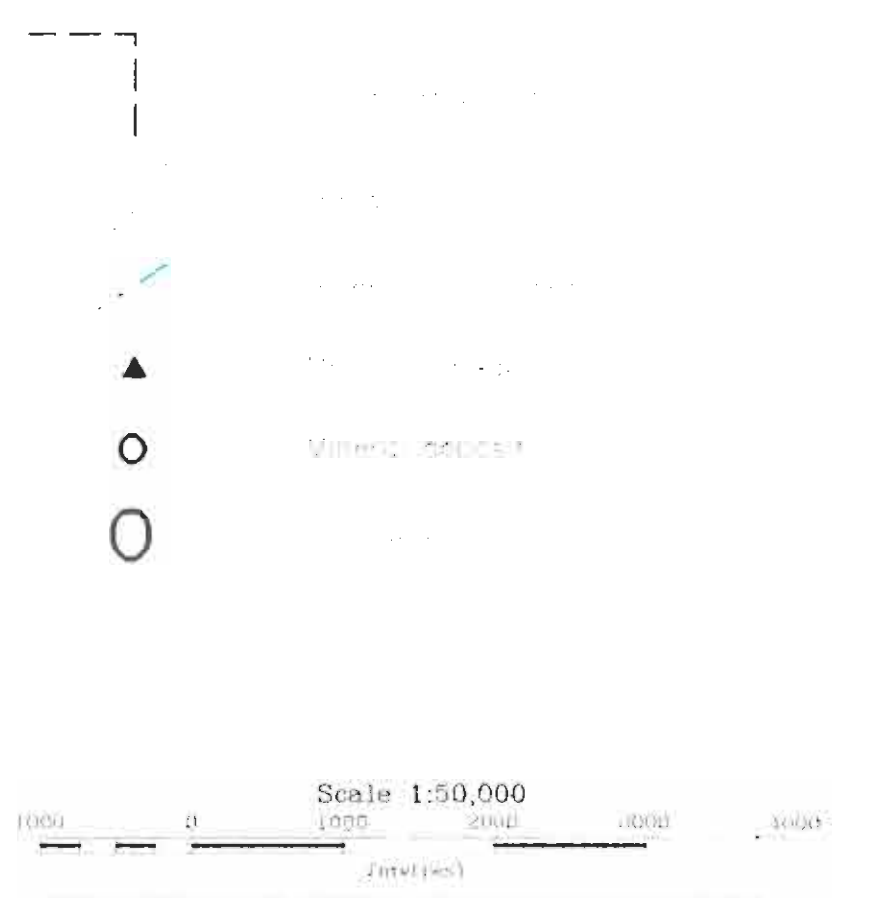
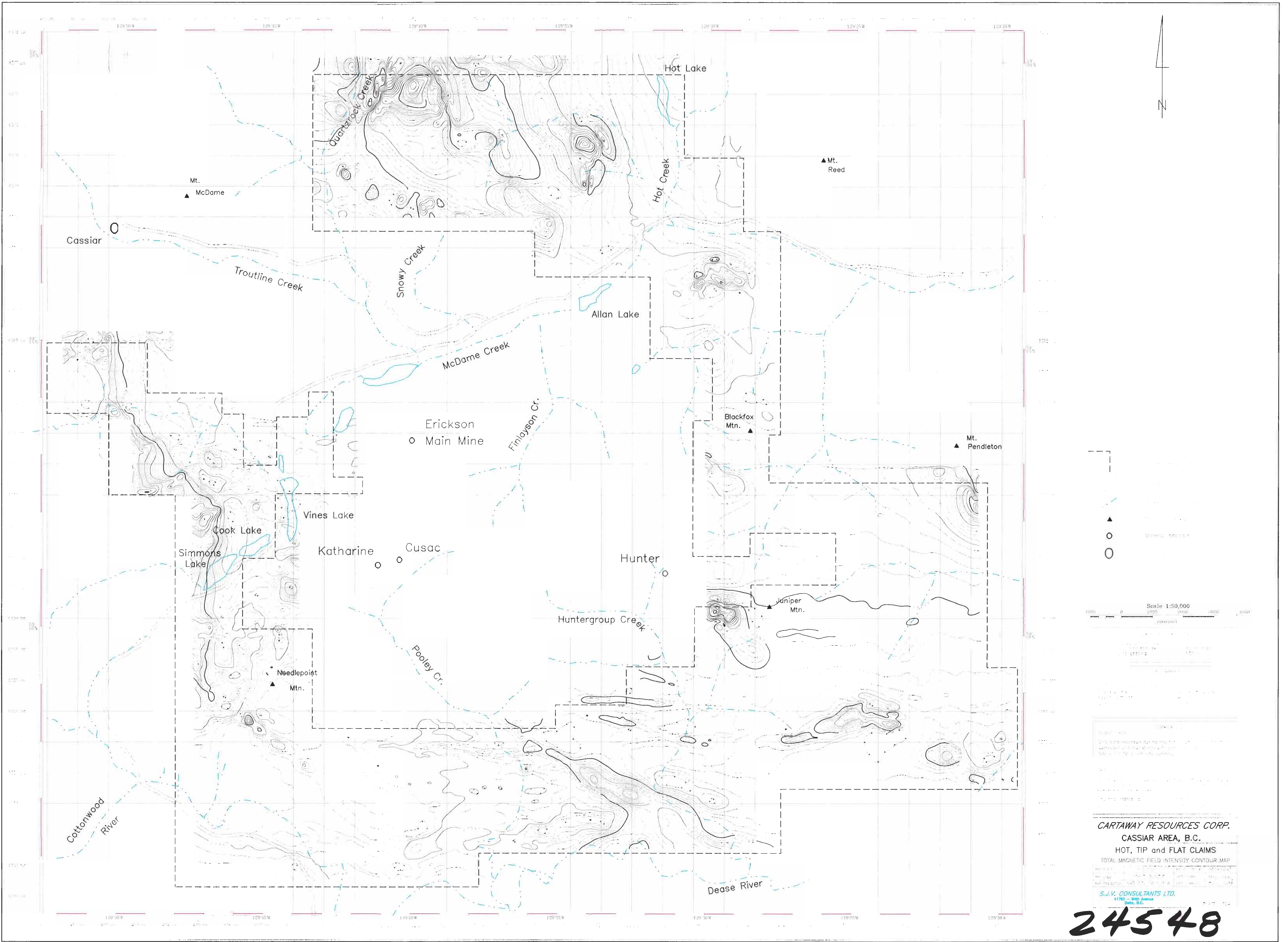
- Ballantyne, Todd A.: Logistics Report for a Detailed Helicopter Magnetic Survey of the Hot Tip Claims, District of Cassiar, B.C., NTS 104P/03,04,05,06 carried out on behalf of Cartaway Resources Corp. By High-Sense Geophysics Ltd; July 1996
- Nelson, J. and Bradford, J. (1989): Geology and Mineral Deposits of the Cassiar and McDame Map Areas, British Columbia (104P/4,5); B.C. Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, 1989, Paper 1990-1, pages 229-233.
- Zahorec, Martin: Summary Report, Hot, Tip and Flat claims, Cassiar British Columbia, NTS 104P/3,4,5,6 for The Cassiar Syndicate, May, 1995.



**CARTAWAY RESOURCES CORP.**  
 CASSIAR AREA, B.C.  
 HOT, TIP and FLAT CLAIMS  
 FLIGHT PATH MAP

**S.J.V. CONSULTANTS LTD.**  
 11782 - 94th Avenue  
 Delta, B.C.

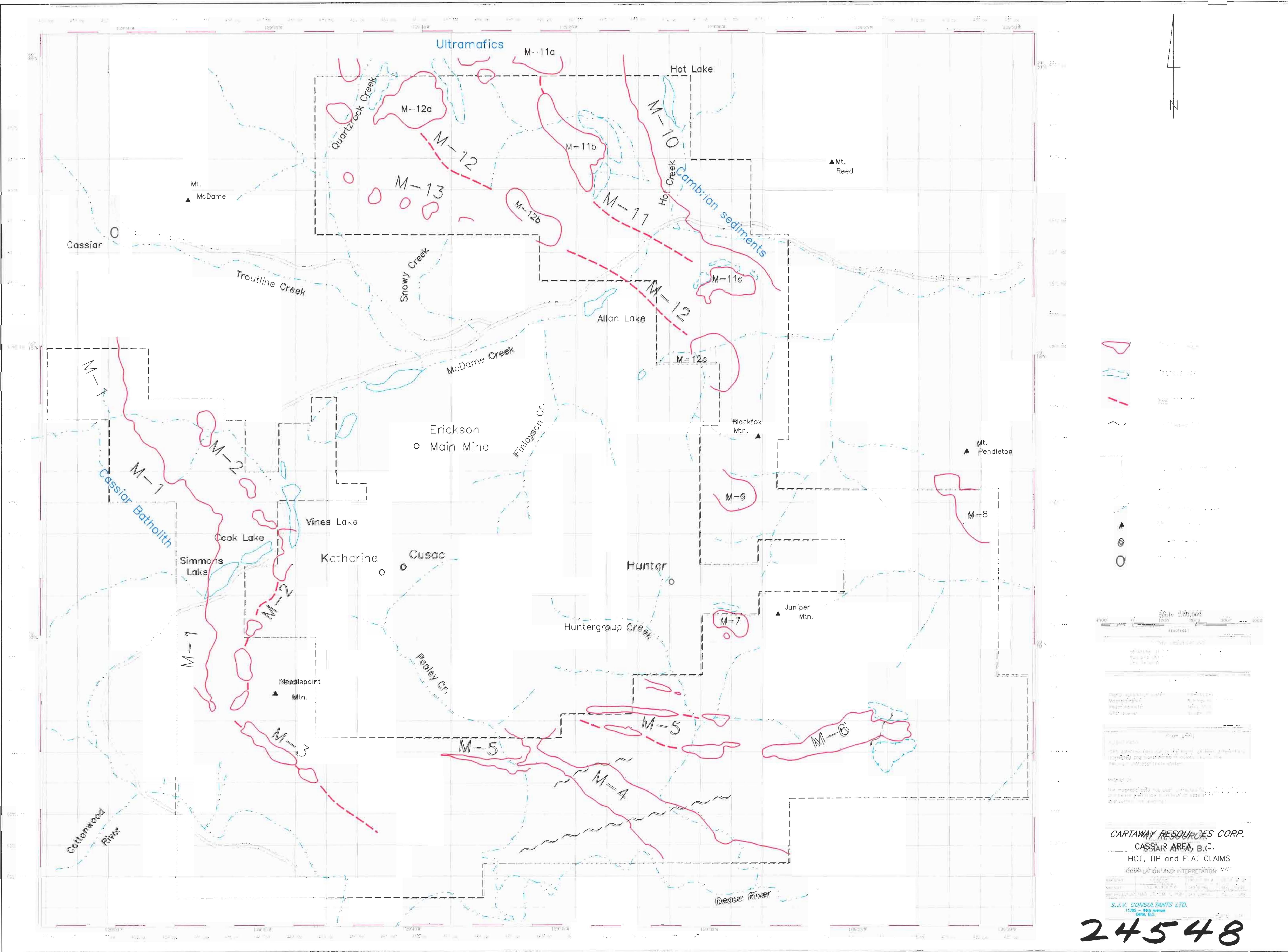
**24548**



1:50,000  
 This map was prepared by the  
 Geological Survey of Canada  
 and is available in French and  
 English. It is available in  
 microfiche and microfilm.  
 For more information, contact  
 the National Library of Science  
 and Technology, Ottawa, Ontario  
 K1A 0S6.

**CARTAWAY RESOURCES CORP.**  
**CASSIAR AREA, B.C.**  
**HOT, TIP and FLAT CLAIMS**  
 TOTAL MAGNETIC FIELD INTENSITY CONTOUR MAP  
 MAP SHEET: 24548  
 MAP DATE: 1987  
 MAP SCALE: 1:50,000  
 MAP PROJECTION: UTM  
 MAP DATUM: NAD 83  
 MAP SOURCE: S.L.V. CONSULTANTS LTD.  
 41782 - 94th Avenue  
 Delta, B.C.

**24548**



24548

# 24548



PROVINCE OF  
BRITISH COLUMBIA

MINISTRY OF  
ENERGY, MINES AND  
PETROLEUM RESOURCES

MINERAL TITLES REFERENCE

MAP 104P03W  
U.T.M. ZONE 9  
LAST MAP UPDATE: 1996 JAN 11

ORIGINAL PRODUCED AT 1:131680

ADMINISTRATIVE AREAS  
MINING DIVISIONS: LIARD

LAND DISTRICTS:

ALIENATIONS

- NO STAKING AREAS
- NO STAKING RESERVES
- PARKS
- ECOLOGICAL RESERVES
- RECREATION AREAS
- INDIAN RESERVES

CONDITIONAL AREAS

- SUBJECT TO CONDITIONS RESERVES
- SECTION 19 RECREATION AREAS
- POST CLAIM AREAS
- AREAS SUBJECT TO URANIUM / THORIUM REGULATIONS

MINERAL TENURE

- MINERAL CLAIM
- MINERAL LEASE
- INDUSTRIAL MINERAL CLAIM
- CLAIM NAME EXAMP: S
- TITLE NUMBER 345679
- OLD TITLE NUMBER 34567
- TAG NUMBER 100000
- LEGAL POST
- WITNESS POST
- FORFEITED TENURE
- VERIFIED VER
- SURVEYED SUR
- REVERTED C.G. MINERAL CLAIM REV CC OR RCD
- CROWN GRANTED C G
- OPEN FOR STAKING O.F.S.

1 UNIT	2 POST CLAIM	3 OLD CLAIM
25.00 6.78 00	25.00 6.78 00	25.00 6.78 00
300 =	300 =	300 =

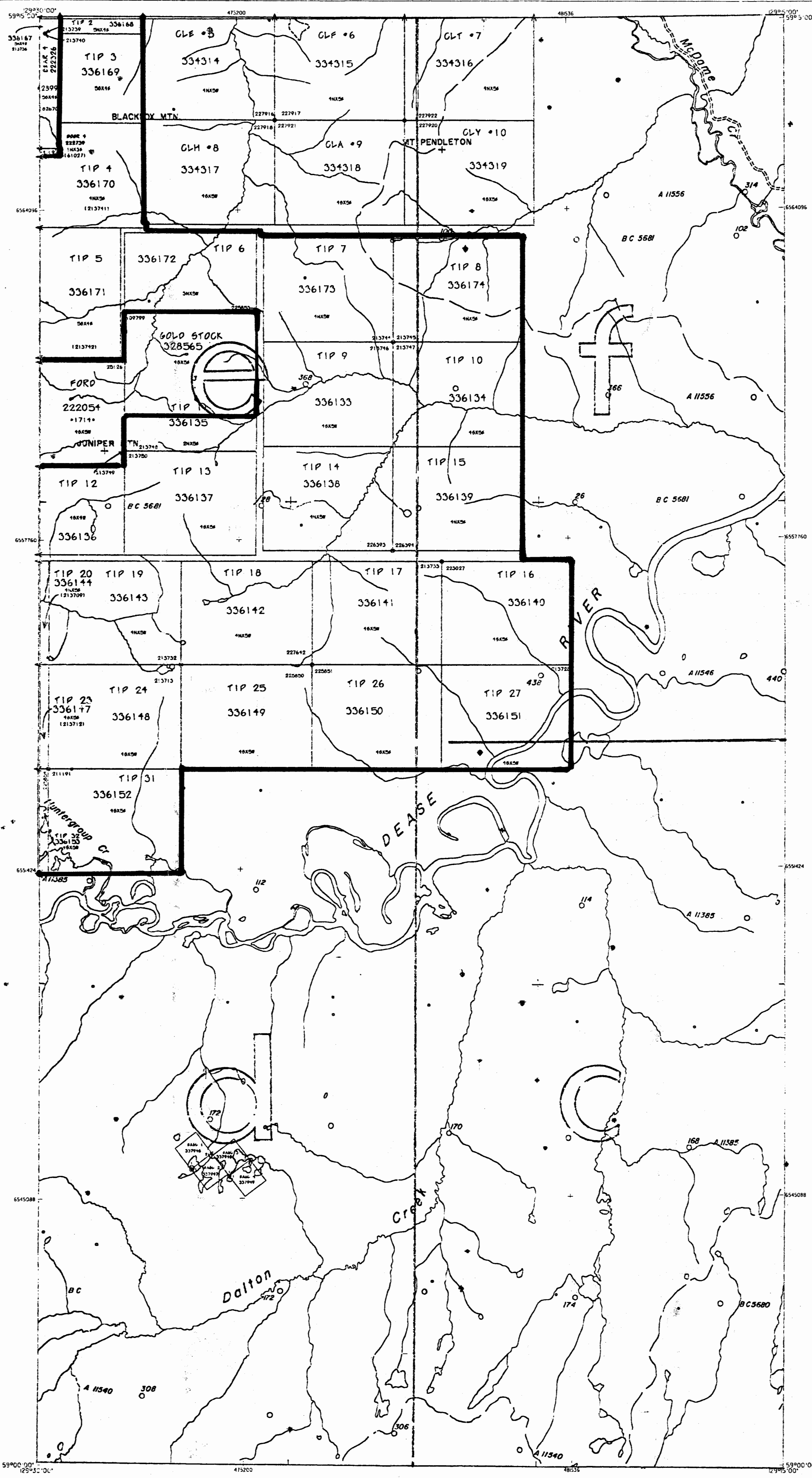
THIS MAP IS PREPARED ONLY AS A GUIDE TO THE LOCATION OF MINERAL TENURE AS SHOWN ON THE LOCATOR'S SKETCHES. FOR CURRENT OR MORE SPECIFIC INFORMATION, APPLICATION SHOULD BE MADE TO THE MINING DIVISION CONCERNED.

104P03E	104P03W	104P03E
104P03E	104P03W	104P03E
104P03E	104P03W	104P03E

INDEX TO ADJOINING MAPS

104P03W

Fig 2a



59°00' 00" 475200 48536 59°00' 00" 6557600 6557600

24548



PROVINCE OF BRITISH COLUMBIA  
MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

MINERAL TITLES REFERENCE  
MAP 104P04E  
U.T.M. ZONE 9  
LAST MAP UPDATE: 1996 JAN 11

ORIGINAL PRODUCED AT 1:31680  
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ADMINISTRATIVE AREAS  
MINING DIVISIONS: LIARD

LAND DISTRICTS:

ALIENATIONS

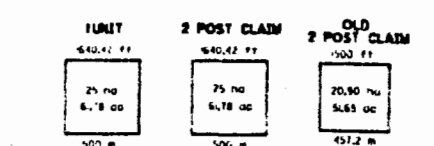
- NO STAKING AREAS
- NO STAKING RESERVES
- PARKS
- ECOLOGICAL RESERVES
- RECREATION AREAS
- INDIAN RESERVES

CONDITIONAL AREAS

- SUBJECT TO CONDITIONS RESERVES
- SECTION 19 RECREATION AREAS
- POST CLAIM AREAS
- AREAS SUBJECT TO URANIUM / THORIUM REGULATIONS

MINERAL TENURE

- MINERAL CLAIM
  - MINERAL LEASE
  - INDUSTRIAL MINERAL CLAIM
- |                             |               |
|-----------------------------|---------------|
| CLAIM NAME                  | EXAMPLE       |
| TITLE NUMBER                | 345679        |
| OLD TITLE NUMBER            | *3100*        |
| TAG NUMBER                  | 100000        |
| LEGAL POST                  | ⊙             |
| WITNESS POST                | ⊙ ⊙           |
| FORFEITED TENURE            | C             |
| VERIFIED                    | ✓             |
| SURVEYED                    | ✓             |
| REVERVED C.C. MINERAL CLAIM | REV CG OR RCG |
| CROWN GRANTED               | C G           |
| OPEN FOR STAKING            | O.F.S.        |



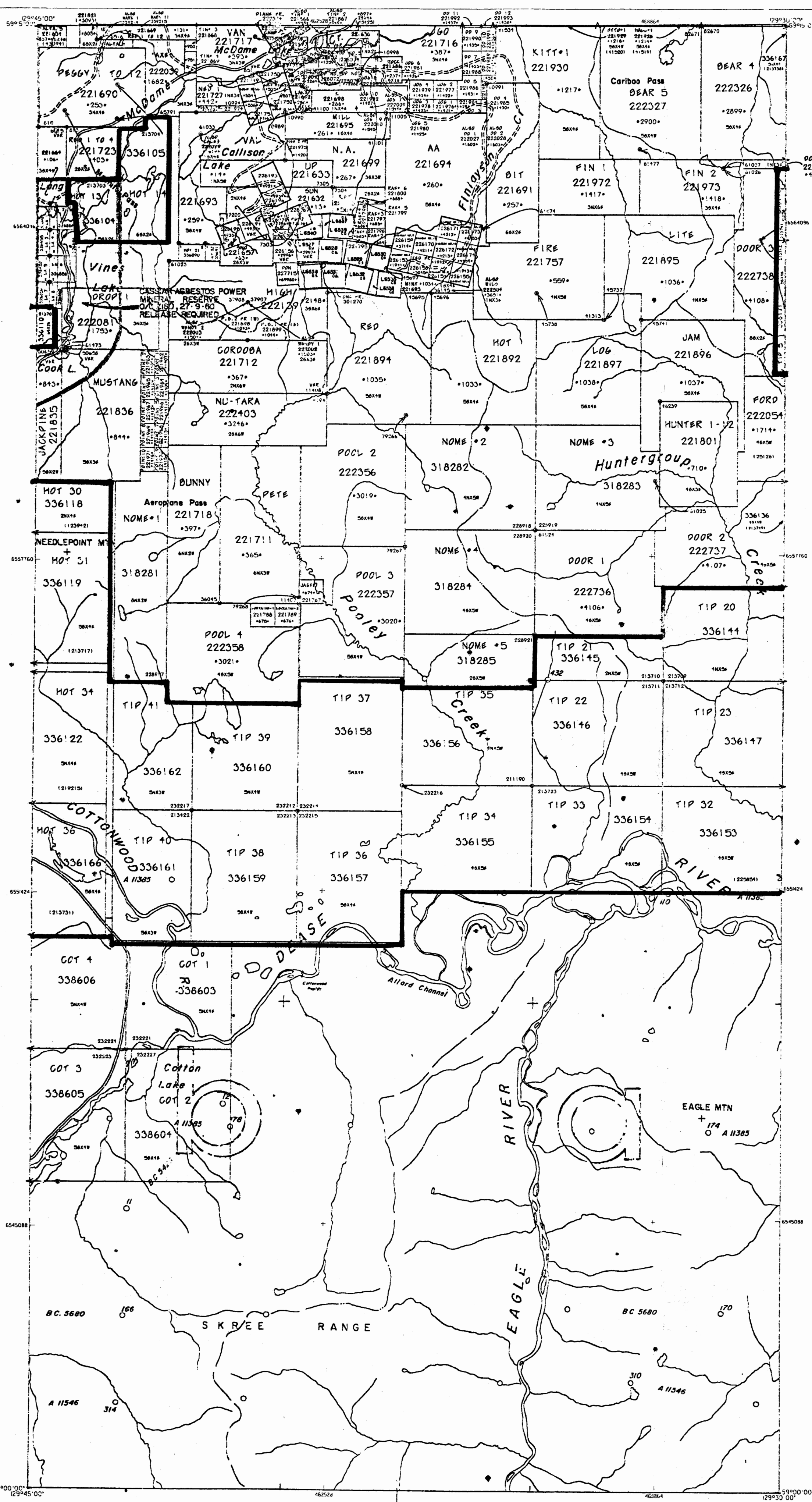
THIS MAP IS PREPARED ONLY AS A GUIDE TO THE LOCATION OF MINERAL TENURE AS SHOWN ON THE LOCATOR'S SKETCHES. FOR CURRENT OR MORE SPECIFIC INFORMATION, APPLICATION SHOULD BE MADE TO THE MINING DIVISION CONCERNED.

104P04E	104P04E	104P04E
104P04E	104P04E	104P04E
104P04E	104P04E	104P04E

INDEX TO ADJOINING MAPS

104P04E

FIG 2b



59°00' 00" 29°45' 00" 482524 482844 129°30' 00"

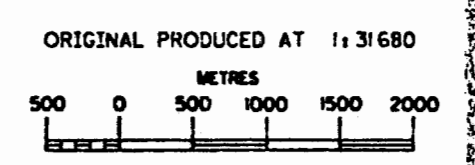
# 24548



PROVINCE OF  
BRITISH COLUMBIA

MINISTRY OF  
ENERGY, MINES AND  
PETROLEUM RESOURCES

MINERAL TITLES REFERENCE  
MAP 104P04W  
U.T.M. ZONE 9  
LAST MAP UPDATE: 1996 MAR 12



ADMINISTRATIVE AREAS  
MINING DIVISIONS: LIARD

LAND DISTRICTS:

ALIENATIONS

- NO STAKING AREAS ———
- NO STAKING RESERVES
- PARKS
- ECOLOGICAL RESERVES
- RECREATION AREAS
- INDIAN RESERVES

CONDITIONAL AREAS ———

- SUBJECT TO CONDITIONS RESERVES
- SECTION 19 RECREATION AREAS
- 1 POST CLAIM AREAS
- AREAS SUBJECT TO URANIUM / THORIUM REGULATIONS ○

MINERAL TENURE

- MINERAL CLAIM ———
- MINERAL LEASE ———
- INDUSTRIAL MINERAL CLAIM ———

CLAIM NAME	EXAMPLE
TITLE NUMBER	345679
OLD TITLE NUMBER	45678
TAG NUMBER	100000
LEGAL POST	⊙
WITNESS POST	⊙
FORFEITED TENURE	⊙
VERIFIED	✓
SURVEYED	✓
REVERTED C.G. MINERAL CLAIM	REV CG OR RCG
CROWN GRANTED	C G
OPEN FOR STAKING	O.F.S.

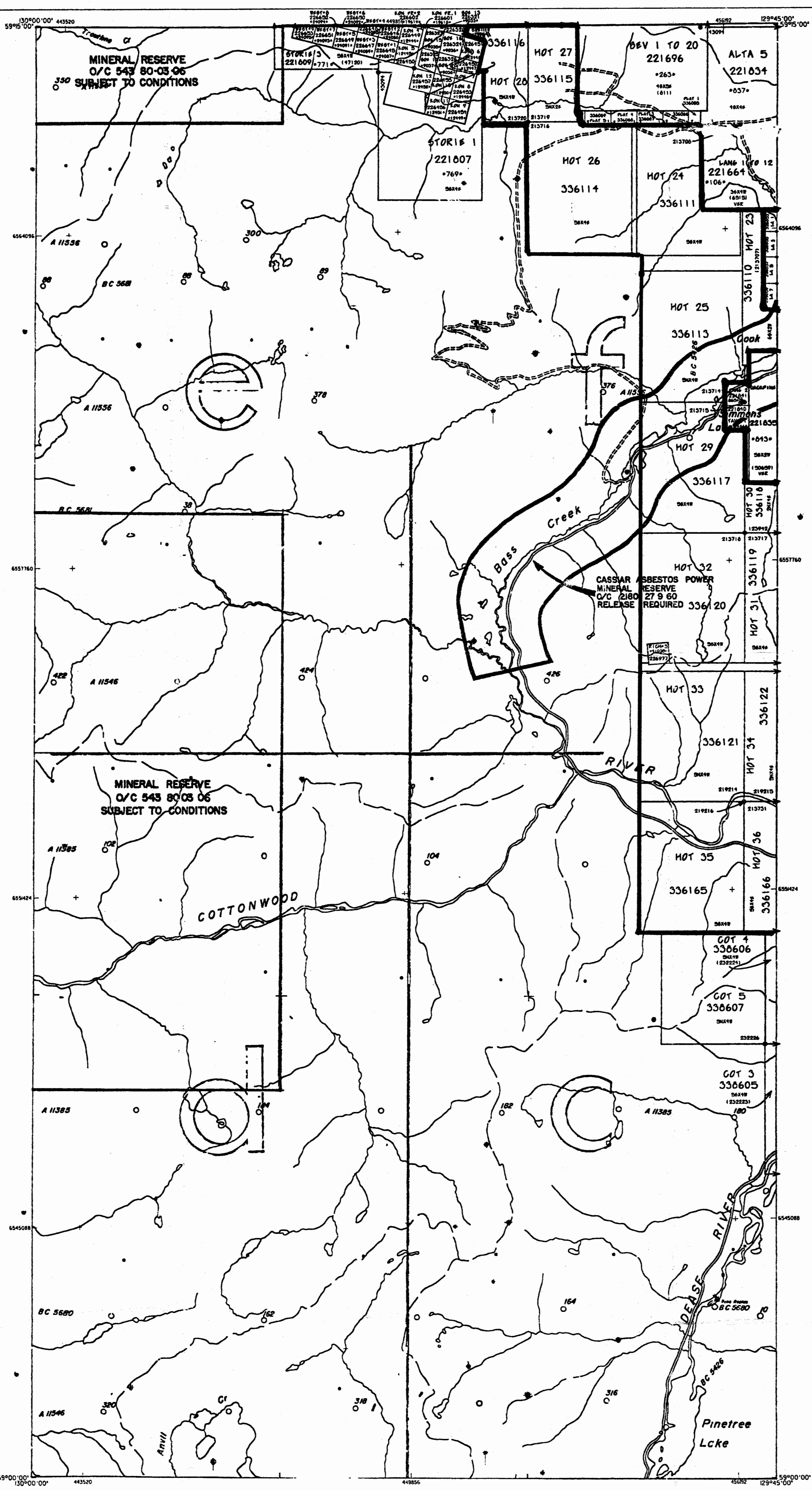


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10400E	10402E	10404E
10406E	10408E	10410E
10412E	10414E	10416E

INDEX TO ADJOINING MAPS

104P04W  
Fig 2c



Delux Micro-Film Services Ltd.

# 24548



PROVINCE OF  
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PETROLEUM RESOURCES

MINERAL TITLES REFERENCE  
MAP 104P05E  
U.T.M. ZONE 9  
LAST MAP UPDATE: 1996 JAN 11

ORIGINAL PRODUCED AT 1:31680  
METRES  
500 0 500 1000 1500 2000

ADMINISTRATIVE AREAS  
MINING DIVISIONS LIARD

LAND DISTRICTS:

ALIENATIONS

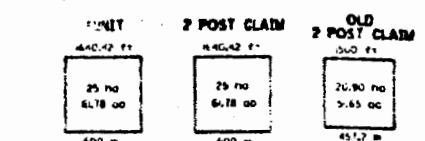
- NO STAKING AREAS -----
- NO STAKING RESERVES
- PARKS
- ECOLOGICAL RESERVES
- RECREATION AREAS
- INDIAN RESERVES

CONDITIONAL AREAS

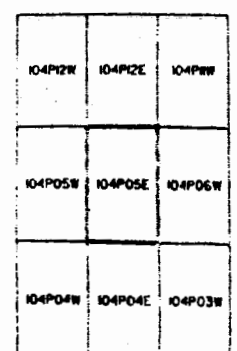
- SUBJECT TO CONDITIONS RESERVES
- SECTION 19 RECREATION AREAS
- 1 POST CLAIM AREAS
- AREAS SUBJECT TO URANIUM / THORIUM REGULATIONS

MINERAL TENURE

- MINERAL CLAIM
- MINERAL LEASE
- INDUSTRIAL MINERAL CLAIM
- CLAIM NAME
- TITLE NUMBER
- OLD TITLE NUMBER
- TAG NUMBER
- LEGAL POST
- WITNESS POST
- FORFEITED TENURE
- VERIFIED
- SURVEYED
- REVERTED C.G. MINERAL CLAIM
- CROWN GRANTED
- OPEN FOR STAKING

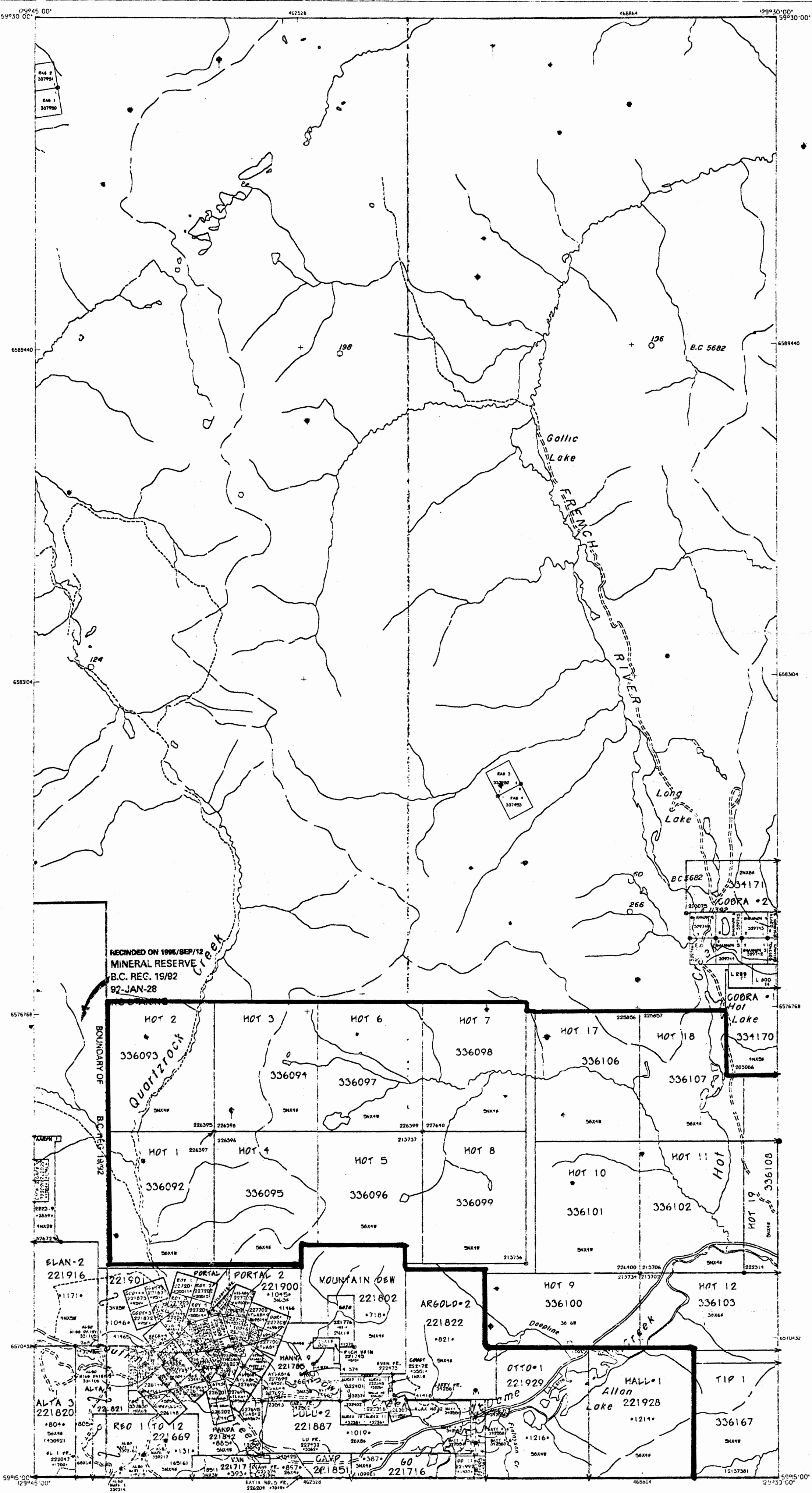


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104P05E

Fig 2d





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PROVINCE OF  
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MINERAL TITLES REFERENCE  
MAP 104P06W  
U.T.M. ZONE 9  
LAST MAP UPDATE: 1996 MAR 14

ORIGINAL PRODUCED AT 1:31680  
METRES  
500 0 500 1000 1500 2000

ADMINISTRATIVE AREAS  
MINING DIVISIONS: LIARD

LAND DISTRICTS:

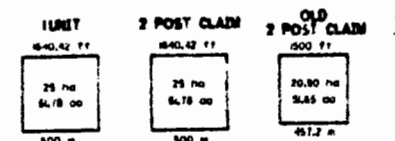
ALIENATIONS

- NO STAKING AREAS -----
- NO STAKING RESERVES
- PARKS
- ECOLOGICAL RESERVES
- RECREATION AREAS
- INDIAN RESERVES

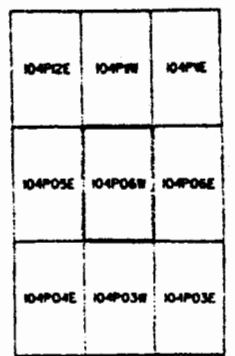
- CONDITIONAL AREAS -----
- SUBJECT TO CONDITIONS RESERVES
- SECTION 19 RECREATION AREAS
- 1 POST CLAIM AREAS
- AREAS SUBJECT TO URANIUM / THORIUM REGULATIONS ○

MINERAL TENURE

- MINERAL CLAIM =====
- MINERAL LEASE =====
- INDUSTRIAL MINERAL CLAIM -----
- CLAIM NAME                   EXAMPLE
- TITLE NUMBER               345679
- OLD TITLE NUMBER         +546+
- TAG NUMBER                 100000
- LEGAL POST                 @
- WITNESS POST             \*\* ○
- FORFEITED TENURE         C
- VERIFIED                   V16
- SURVEYED                   6UR
- REVERTED C.G.             REV CG OR ACG
- MINERAL CLAIM
- CROWN GRANTED           CG
- OPEN FOR STAKING         OFS.

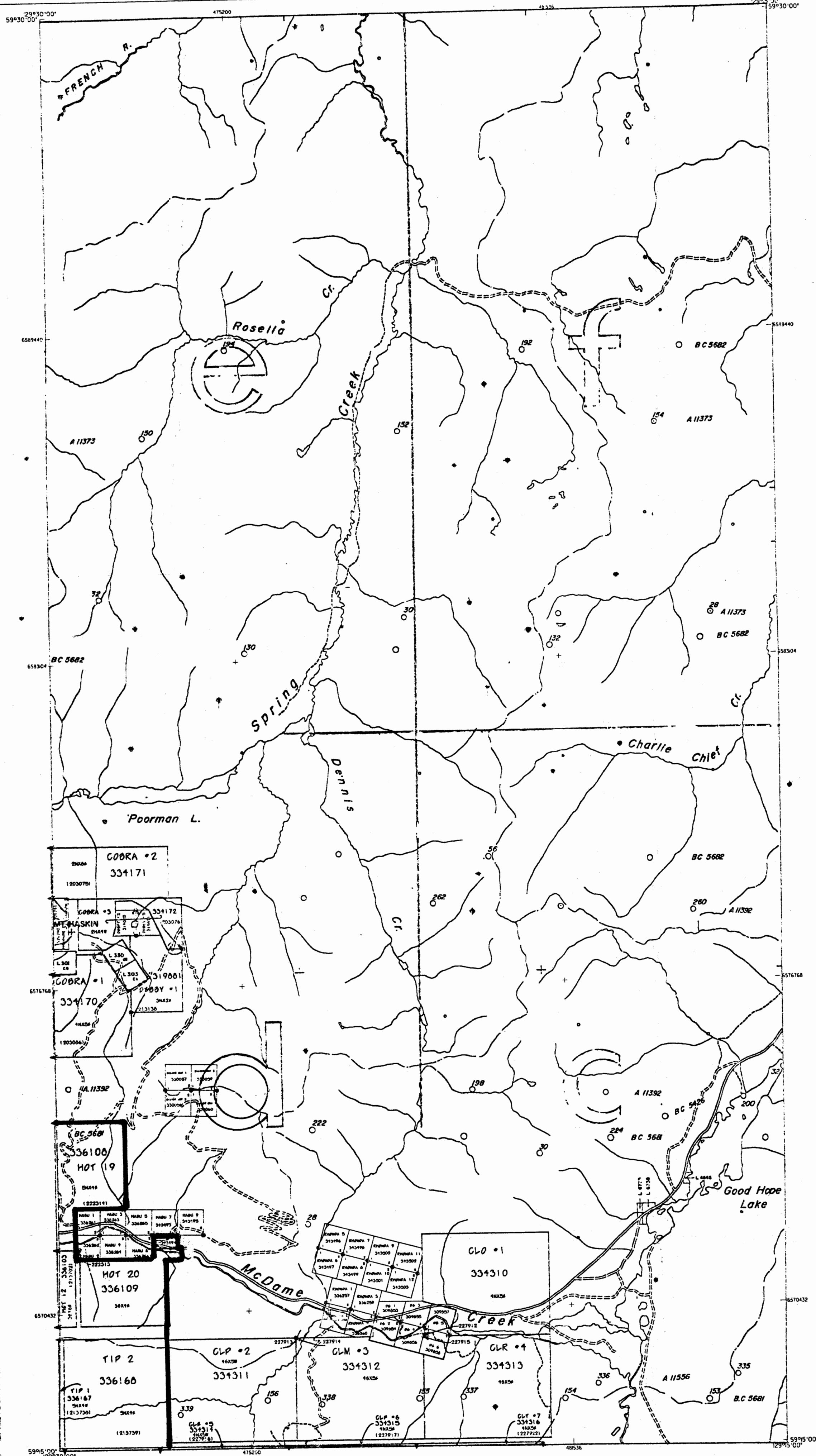


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104P06W

Fig 2e



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