# 4186

ASSESSMENT - GEOPHYSICAL REPORT

on the

AIRBORNE MAGNETOMETER

AIRBORNE ELECTROMAGNETIC

AIRBORNE RADIOACTIVITY

of the

R1 - 8 MINERAL CLAIMS

RB1 - 12 MINERAL CLAIMS

BLACKWATER MOUNTAIN - RIVER AREA

CARIBOO MINING DIVISION

BRITISH COLUMBIA

Latitude 53°11' North; Longitude 122°55' West

RUDOLPH BADER

VANCOUVER, BRITISH COLUMBIA

Airborne Surveys by: Waterton Airex Ltd.

Interpretation by: Weymark Engineering Ltd.

11 January 1973

Department of

Mines and Petroleum Resources

ASSESSMENT REPORT

NO 4186

MAP

### DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

To Wit:

In the Matter of A Geophysical Survey on behalf of Rudolf Bader, 404 - 1139 Barclay Street, Vancouver 5, British Columbia.

Ŧ. William James Weymark, P. Eng., President of Weymark Engineering Ltd., of 3310 Westmount Road, West Vancouver, British Columbia.

of

in the Province of British Columbia, do solemnly declare that an aeromagnetic, electromagnetic and radioactivity survey has been conducted on the "R" 1-8 and "RB" 1 - 12 Mineral Claims, Blackwater Mountain - River Area, Cariboo Mining Division, British Columbia, December 1972 - January 1973 with Report issued 11th January 1973.

The following expenses were incurred:

1. Waterton Airex Ltd., - Flying, positioning and reading Airborne Magnetometer , Electromagnetic and Radioactivity tests on aforesaid claims:

Approx: 50 miles at \$15.00 per mile .... \$750.00

2. Paid to Weymark Engineering Ltd., to cover geophysists supervision, calculating, plotting and fairdrawing data and preparation of final reports.

Approx: 50 miles at \$27.00 per mile .... 1300.00

Total

.....\$2050.00

Navigational aids were furnished by Rudolf Bader and Weymark Engineering Ltd. to assist flight navigation

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the 60, 7 y

14462016

, in the

Province of British Columbia, this

day of wal store and soy

医结合物的 医电动激性电池

illiam J. Weymark P. Eng.

₽resident

Weymark Engineering Ltd

A Commissioner for taking Affiduvits within British Columbia of A Notary Public in and for the Province of British Columbia.

新·斯斯特特美国 1000年11日 1966

### ASSESSMENT - GEOPHYSICAL REPORT

BLACKWATER RIVER - MOUNTAIN AREA
"R" and "RB" MINERAL CLAIMS GROUP

CARIBOO MINING DIVISION

BRITISH COLUMBIA

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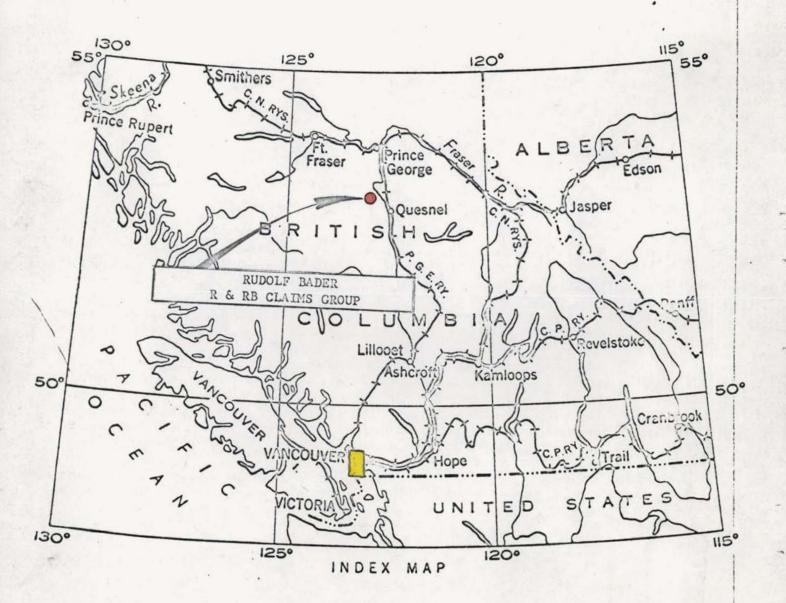
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LOCATION

### RUDOLF BADER

Department of

R & RB MINERAL CLAIMS

Mines and Petroleum Resources
CARIBOO MINING DIVISION

ASSESSMENT REPORT

BRITISH COLUMBIA

### WEYMARK ENGINEERING LTD.

Consulting Engineers
3310 WESTMOUNT ROAD
WEST VANCOUVER, B.C.
CANADA

TELEPHONE 922-1536

11 January 1973

Mr. Rudolf Bader 404 - 1139 Barclay Street Vancouver 5, British Columbia

Dear Mr. Bader:

Re: Assessment Geophysical Report Blackwater "R" and RB" Claims Cariboo Mining Division British Columbia

I am pleased to submit for your information, this Assessment Geophysical Report of the results of the Aerial Geophysical Surveys completed on the 31st December 1972 by Waterton Airex Ltd., Sydney, British Columbia and the interpretation by William Chang M. Sc., Geophysics, McGill University and W. J. Weymark P. Eng. of the recorded field readings over the R 1-8 and the RB 1-12 Mineral Claims, Blackwater River-Mountain Area, Cariboo Mining Division, British Columbia.

Background technical references relating to the Blackwater River-Mountain Area are given in the Annual Reports of the B. C. Minister of Mines dating back to before the turn of the century and various gold placer and other metallics have been recorded. No previous reports are known to the writer relating to the "R" and RB" claims.

1.0 <u>Property:</u> The area covered by the aerial geophysical surveys involved the "R" 1-8 and "RB" 1-12. Designation details are given in the following table and shown on Figues: 1 and 2.

Record

Claim Name	Staking Date	Number	Date			
R 1 - 8	1 July 1972	67102 - 09	13 Jul/72			
RB 1 - 12	2 July 1972	67110 - 21	13 Ju1/72			

The claims were located by Rudolf Bader of Vancouver and recorded in his name.

No surveys have been of the claim lines, posts or tags, so compliance with the Regulations of the Mineral Act of the Province of British Columbia cannot be verified at this time. There are no structures or buildings on the property belonging to the claims holder,

2.0 Location: The "R" and "RB" Claims are located in the Quesnel Land District with Registry Office in Quesnel and the Cariboo Mining Division with Recording Office in Quesnel. The geographic reference is Longitude 122° 55' West and North Latitude 53° 11'. The claims area is situated about 20 miles

northwesterly from Quesnel following the Bouchie Lake - Blackwater Road. This road is open to automobile usage except during heavy snowfall and fire-peril periods. Elevations on the claims area range from 2200 to 3500 feet above sea level, seeFigure: 4. The claims area is mostly overburden covered and treed.

3.0 Geology: The presented interpretation of the geological formations of the area are given on Map 49-1960, Geology, Prince George Cariboo District, British Columbia, Geological Survey of Canada, 1961.

Referring to Figure: 5, it will be noted that the area is mostly underlain by volcanics and sediments of the Miocene Period which overlay Cache Creek sediments and volcanics. The intrusions are granodiorites, quartz diorite, diorite through to gabbro of Jurassic age.

Details about local geology are scanty because of the few outcrops. For the most part the claims are underlain by volcanics and minor sediments of Paleocene (?) To Oligocene periods. Detailed mapping is required.

- 4.0 Mineral Zones: Todate no mineral zones have been located on the claims area, however, placer gold and Psilomelane, manganese oxide-hydrate have been located along the West Road (Blackwater) River. Asbestos has been noted in the serpentinized peridotites.
- 5.0 Geophysical Surveys: The area has been covered by the Aeromagnetic Series, Department of Mines and Technical Surveys, reference Sheet 93G/2; Map Np. 1547G, Cottonwood Canyon, B.C. See Figure: 6. As noted thereon, a low is centered within the claims area with steep gradients peaking to 4500 and 5000 x 10 gammas respectively to the northwest and southeast. The trend of the lineaments is northwesterly-southeasterly.

As the next phase of the investigation of geophysical assessment of the possibilities, an airborne geophysical survey was conducted under contract by Waterton Airex Ltd., of Sidney, British Columbia on the 31st December 1972. Flight readings were taken, see Figure: 6 and consisted of combined aeromagnetic, electromagnetic and radioactivity testing.

The survey covered the claims area and involved 16 runs each 16,000 feet in length. These runs were 500 ft apart and were flown to a true bearing of 160° or alternatively 340°. The plane was captained by Claude Waterton, VRS-536 Senior Commercial, the co-pilot was Arnold Parley, both of Sidney, British Columbia. The flight plan was filed with the D.O.T. Williams Lake. Figure: 7 shows the flight plan pattern, Figure:87 gives the readings for each of the surveys submitted by Waterton Airex Ltd.

Appendix A contains the details relating to the aircraft and the instrumentation used.

Referring to Figure: 7, it will be noted

### that,-

- the variation in Radioactivity readings ranged from 0 to 1/100 MR/HR
- the variation in Electromagnetic readings ranged from 1 to 15 (x.1 microamps)
- the variation in magnetometer readings varied from

### Rudolf Bader; Assessment Geophysical Report, "R" and "RB" Claims

- 0 to +28 (x 100) gammas. Background average was set at "10"
- for the radioactivity and Electromagnetic tests, background was dialed out!

Results: Referring to Figure: 9:, it will be noted that there is a strong northwesterly trend to the magnetometer readings and two "Highs" trend on the "R" claims, trending the "Low" of the GSC Aero magnetic, see Figure: 6. The "high" and "Low" zones on the "RB" have larger aerial extent. The "EM" "Highs" on the "R" claims indicate an easterly trend, normal to the geological and magnetometer trend. The overlap of the "EM" "high" zones with the "high" and "Low" magnetometer zones provides area of interest. Trenfing on the "RB" claims of the "EM" appears to be northwesterly conforming with the Magnetometer "Highs"

Increased radioactivity appears to trend northwesterly on the "R" claims and northeasterly on the "RB" claims

### 6. OSummary Conslusions:

The results of the surveys, as presently interpreted are:

- i. There is a coincidence in the magnetometer "High" and "Low" zones as protrayed on the Aeromagnetic survey Map 1547C and those by Waterton Airex Ltd.
- ii. Interesting overlap "EM" and "Magnetomter "High" and "Low" zones as indicated on the "R" and "RB" claims provide areas of interest as characteristic of the Waterton methods.
- iii. Increased radioactivity concentrations about the "High" "EM" zones provides an interesting feature.
- iv. Interpretation of the geophysical relationships cannot definitively be resolved from the information base available. Further ground geological-geophysical information is required.

### 7.0 Recommendations:

On the bases of the results obtained from the relating geophysical surveys referred to in this report, it is considered that further field investigations are warranted and that successively ground geochemical and geophysical, - magnetometer, electromagnetic and induced polarization surveys should be initiated in conjunction with detailed geological mapping to assess the metalliferous possibilities of the "R" 1-8 and "RB" 1-12 Mineral Claims. First attention should be directed toward the anomalous zones indicated on Figure: 9.

Respectfully submitted

William J. Weymark P. Eng.

President

Weymark Engineering Ltd.

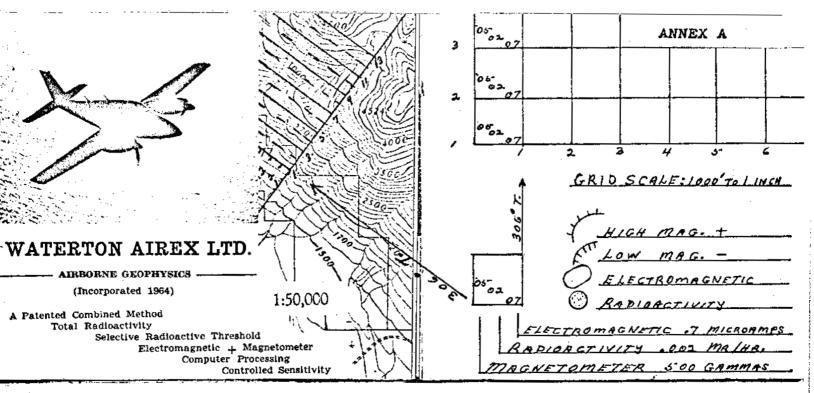
11 January 1973

### CERTIFICATE

- I, William James Weymark, P. Eng., Consulting Engineer, President of Weymark Engineering Ltd., of the District of West Vancouver, of the Province of British Columbia hereby certify that:
- 1. I am a graduate of Mining Engineering of Queen's University, Kingston, Ontario, B. Sc., 1940 and have been practising my profession for twenty-five years.
- 2. I am a practising Consulting Engineer and reside at 3310 Westmount Road, West Vancouver, Province of British Columbia.
- 3. I am a member of the Association of Professional Engineers of the Province of British Columbia and also of the Consulting Engineers' Division of the Association of Professional Engineers of British Columbia.
- 4. I am a member of the Canadian Institute of Mining and Metallurgy, of the American Institute of Mining, Metallurgical and Petroleum Engineers and of the American Geophysical Union.
- 5. I have no direct or indirect interest whatsoever in the holdings of Rudolf Bader of 404 1139 Barclay Street, Vancouver 5, British Columbia, or do I expect to receive any interest direct or indirect from him or in the "R" or "RB" Mineral Claims.
- 6. The findings of the accompanying report are based on my personal knowledge of the Blackwater Mountain-River Area and study of the geophysical field test readings and the accompanying relating geological-mineralogical information. The geophysical readings and studies were made together with William Chang, M. Sc. Geophysics, McGill University.

DATED at West Vancouver, British Columbia this 11th day of January 1973.

APPENDICES



VICTORIA INTERNATIONAL AIRPORT

BOX 2002, SIDNEY, B.C., CANADA

PHONE 656-2194

Proven in Western and Northern Canada for the highest degree of accuracy at the lowest cost. \$10. per lineal mile including base and positioning expenses on average surveys. Oil assessment in the North at \$12. per lineal mile.

A 400 square mile area at 1,000 foot spacing would cost \$20,000.and could be

completed in three weeks. This should put your ground party a year or more ahead in their exploration program.

By the use of this combination method 80% of the unproductive anomalies can be calculated out of the survey which results in keeping the ground follow up costs to a minimum.

Electromagnetics: Waterton quadrature system.

Trans. on 1,000 CPS. Receive in units of .1 microamperes.

Magnetometer:

Flux-gate Sharpe PMF-3 or McPhar M700.

Proton, GeoMetrics G-806. (Modified to our system.)

Receive in units of 10 to 100 Gammas.

Radioactivity:

Detectron - DR299 24 tubes.

Receive in units of .001 MR/HR. (Total count.)

Threshold:

McPhar TV-3B, three inch crystal.

Positions 1.3 - 1.63 - 2.5 Mev.

Grid supplied in scales of 1,000 to 2,000 feet per inch, with clear overlays showing the anomalous areas.

Ground checks over mountain areas have found the accuracy to be within 500 feet on a 500 foot grid.

Over 15.000 lineal miles of reconnaissance and assessment assistance completed in 40 different areas by the end of 1970.

Operation range up to 400 miles from base.

Aircraft type: Cherokee 235 - Twin Comanche.

Computor processing available.

# WATERTON AIREX LTD.

PAT. No. 758308 CANADA (1967)

Our patented method incorporates the combined readings from a flux-gate magnetometer, a nucliometer and a miniaturized electromagnetic unit. The readings are recorded instantly on film and timed electrically to enable the readings to be entered on a grid of a chosen scale.

To obtain anomalies of most value level lines are flown in a certain plane and a fixed wing aircraft is chosen as the most suitable vehicle for this purpose.

Any inaccuracy in the timed readings due to airspeed error is calculated out before the readings are entered on the grid.

The instruments are set on "0" over a predetermined spot near the survey area and this adjustment is made after each  $1\frac{1}{2}$  hours. The survey flying is done in certain condition and at certain times of the day.

Station-keeping is accomplished by electrical counter, reference to topographical features, directional gyro set from compass or astro compass and a set flying technique. Ground checks from over twenty mountainous areas have found the accuracy of this method to be between 250 feet and 500 feet on a 500 foot grid.

Anomalies are plotted from the grid on to transparent sheets and the resulting overlays give us the combination anomalies which, in our experience, have been the most successful.

Magnetometer: PMF-3 Sharpe or McPhar M-700 is used when adjusted to our method. Readings are in units of 100 gammas for mineral reconnaissance and in units of 10 gammas for oil reconnaissance.

Electromagnetic: Built by our company to a miniature scale to enable us to use small aircraft to keep the costof survey to our rates.

With the sensitivity set at 30%, dissemenated sulphides usually read in the 3 to 5 range and heavy sulphides in the 10 to 15 range on a scale division of 25.

The transmitted electrical field is from 200 feet of copper wire attached to the bottom of the aircraft in the horizontal plane and power is taken from the aircraft generator and built up to required strength by the field transmitter which operates in the 1,000 CPS range.

A small 10 oz bird is drawn behind the aircraft powered by its own mercury cell and its receiving coil is in the vertical. 90° to the transmitted field. A booster receiver in the aircraft produces the received signal in units of .1 microamperes.

Nucliometer: Detectron - DR299, 24 tubes suited to airborne work to obtain total radioactive readings in units of .001 MR/HR, milliroentgens per hour. Threshold readings are taken from McPhar TV-3B with 3" crystal.

Computer processing is used when requested, but for this the magnetometer average in the areas is set at 3,000 gammas.

( Pat. No. 758,308 Canada 1967 )

### APPENDIX - B

### COST DISTRIBUTION

- Weymark Engineering Ltd., interpretation of geophysical survey readings and preparation and submission of Report dated 11th January 1973 ......1300.00

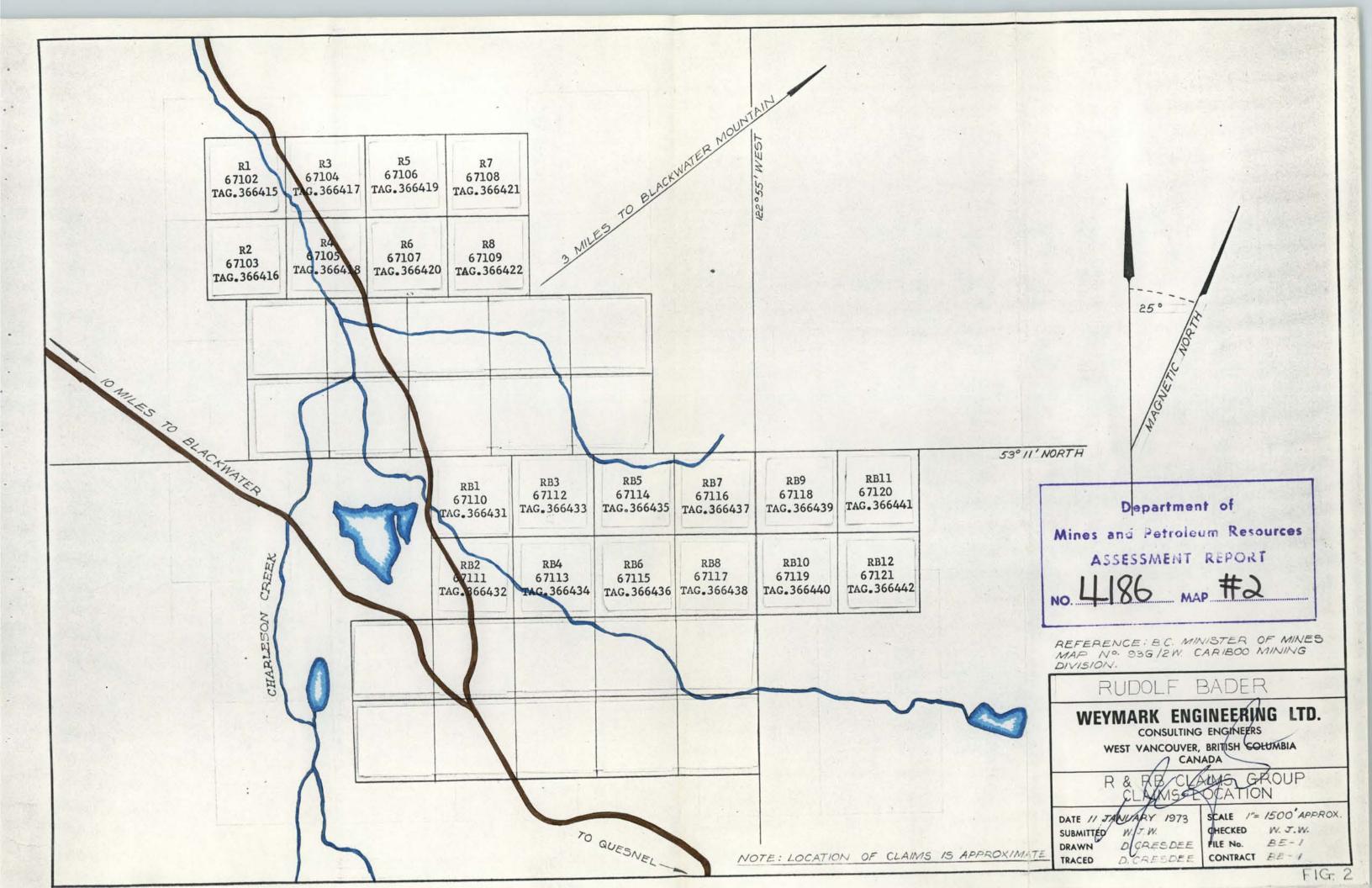
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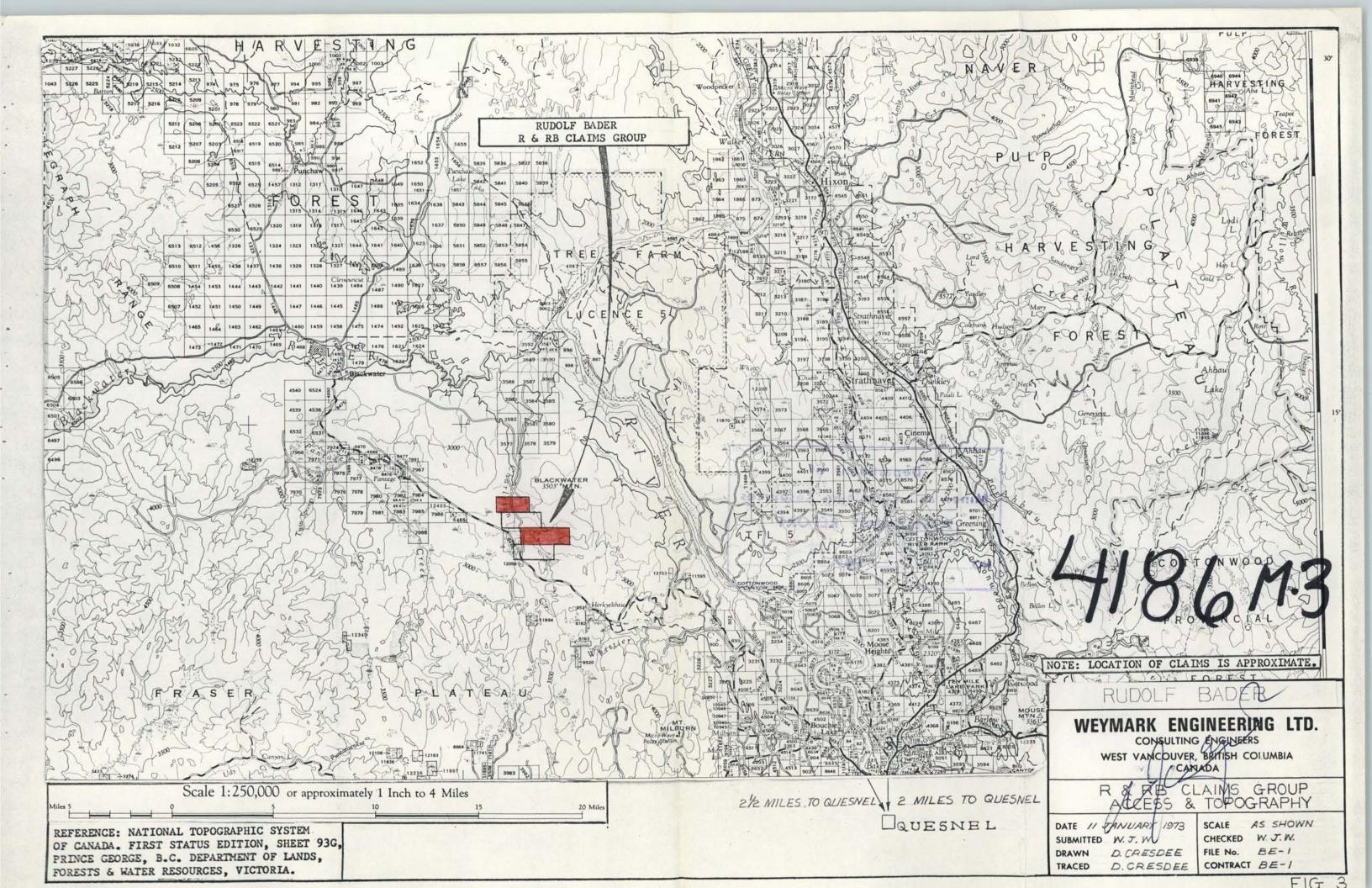
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Weymark Engineering Ltd.

ILLUSTRATIONS





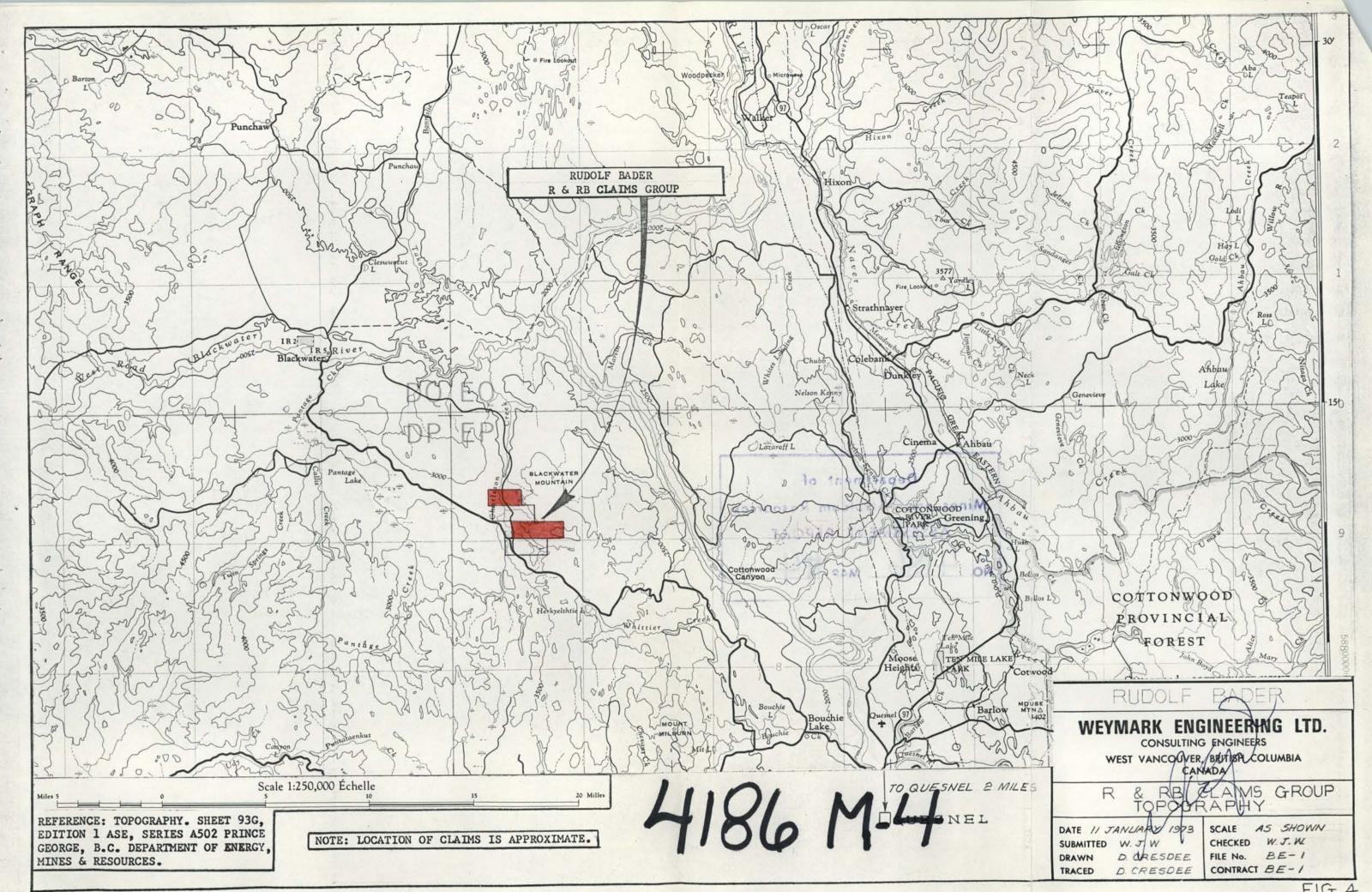
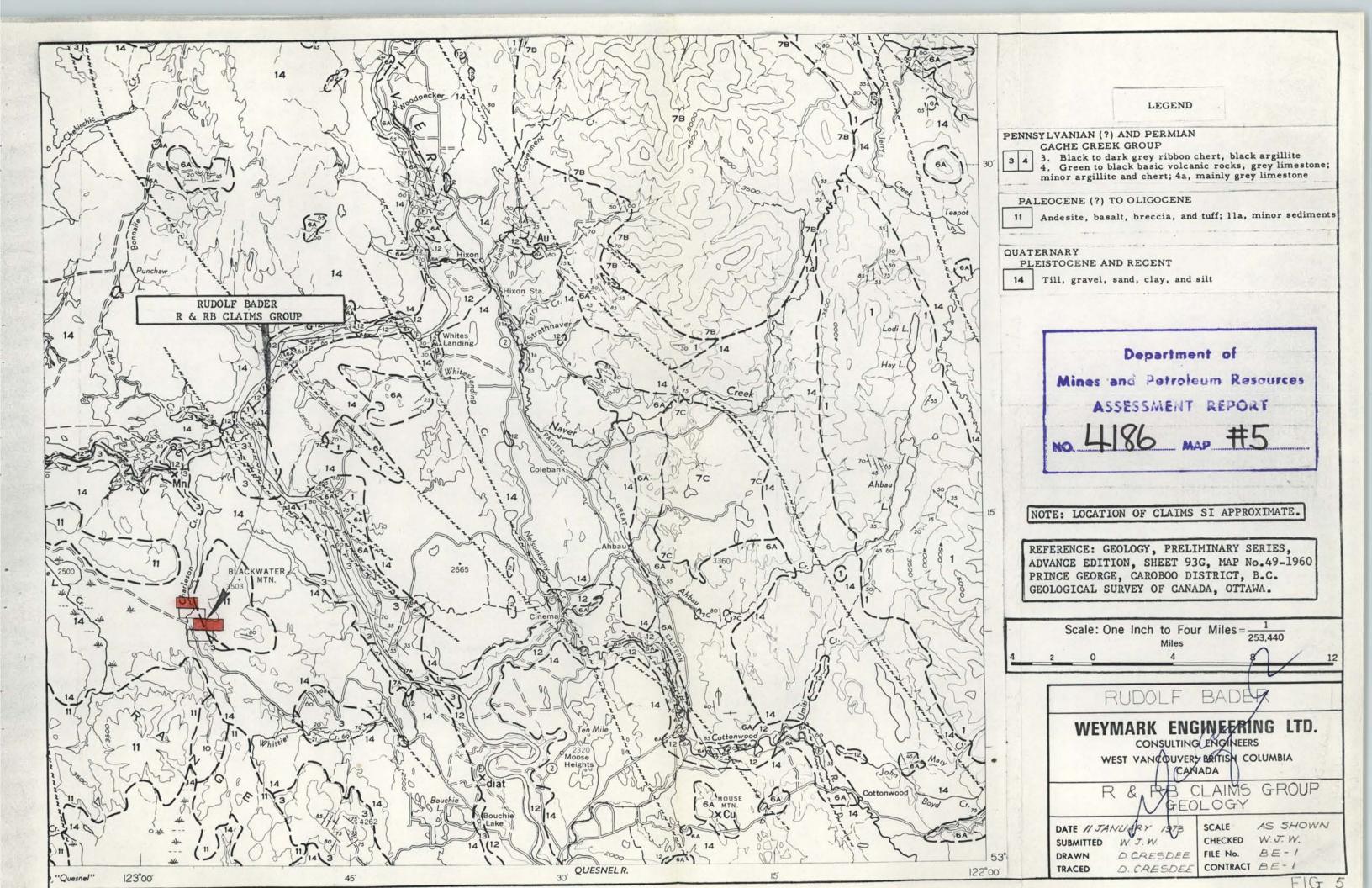
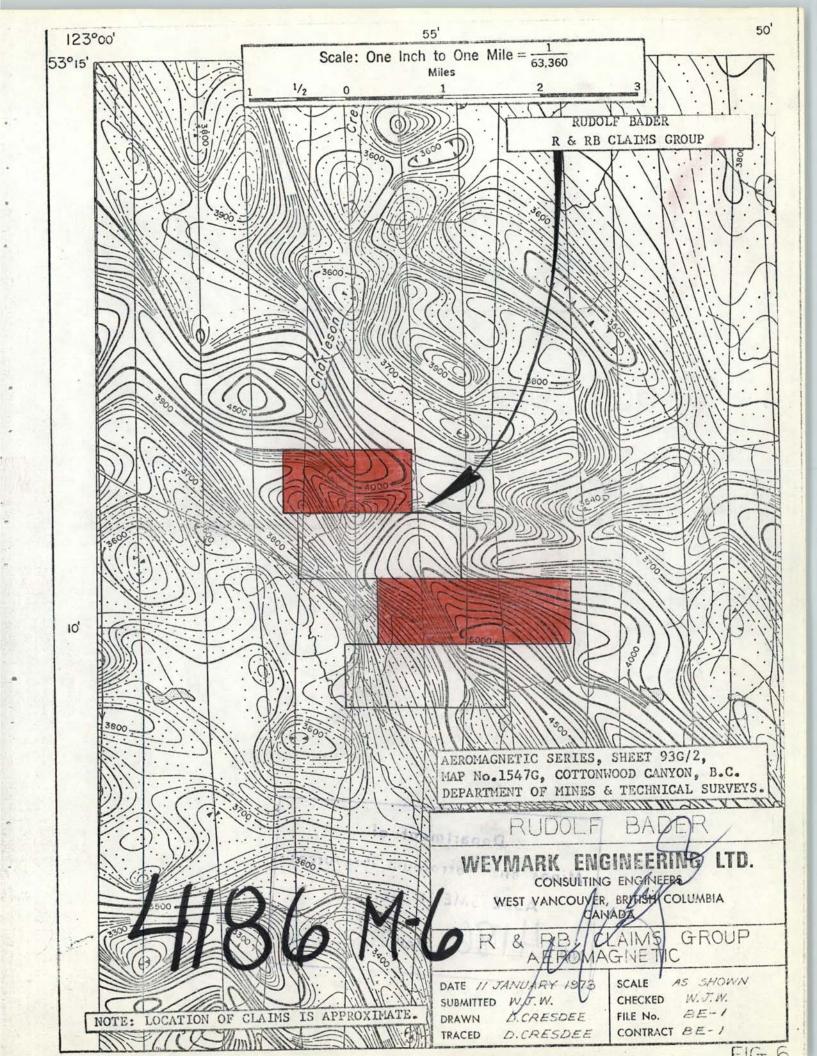
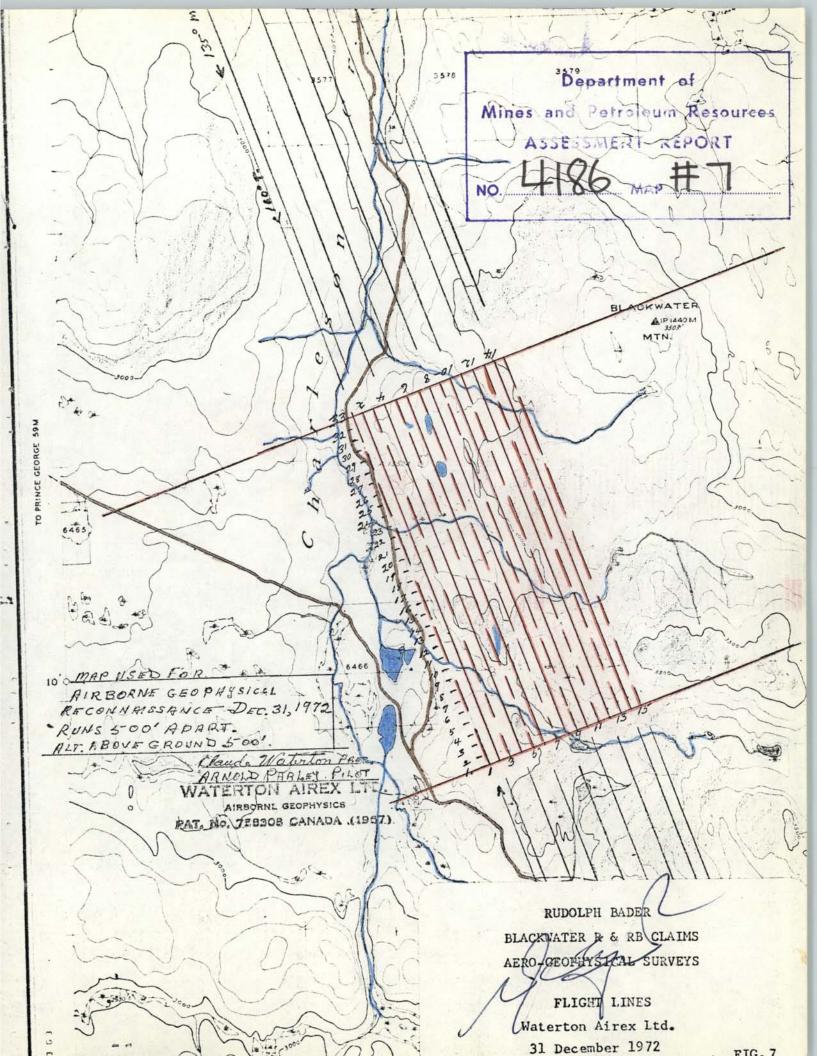


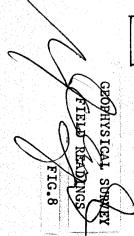
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ELECTROMAGNETIC UNITS: 1 MICROAMPERS
PADIOACTIVITY WAITS. OOI MA AR.
PGASTOMETER UNITS 100 GAMMAS

RIRBORNE GEOPHYSICAL RECOMMAISSANCE

"CHARLESON RIVER" AREA OF B.C. DEC. 31, 1972

RUNS 5-00 APART, CORDED READINGS. 5-00' APART.

ALT. ABOVE GROUND 5-00' AVERAGE MAC.SET AT "10"

GRID SCALE: ONE INCH = 1,000 FEET. WATERTON AIREX LTD.

AIRBORNE GEOPHYSICS

PAT. No. 758308 CANADA (1987)

