1244

GEOPHYSICAL (MAGNETOMETER) REPORT

Nord Claims

Latitude 49°, Longitude 115°, NW

6 Miles S.W. Cranbrook, British Columbia

PLACID OIL COMPANY

Calgary, Alberta

R.A. Buckley, P. Geol.

April 15, 1968

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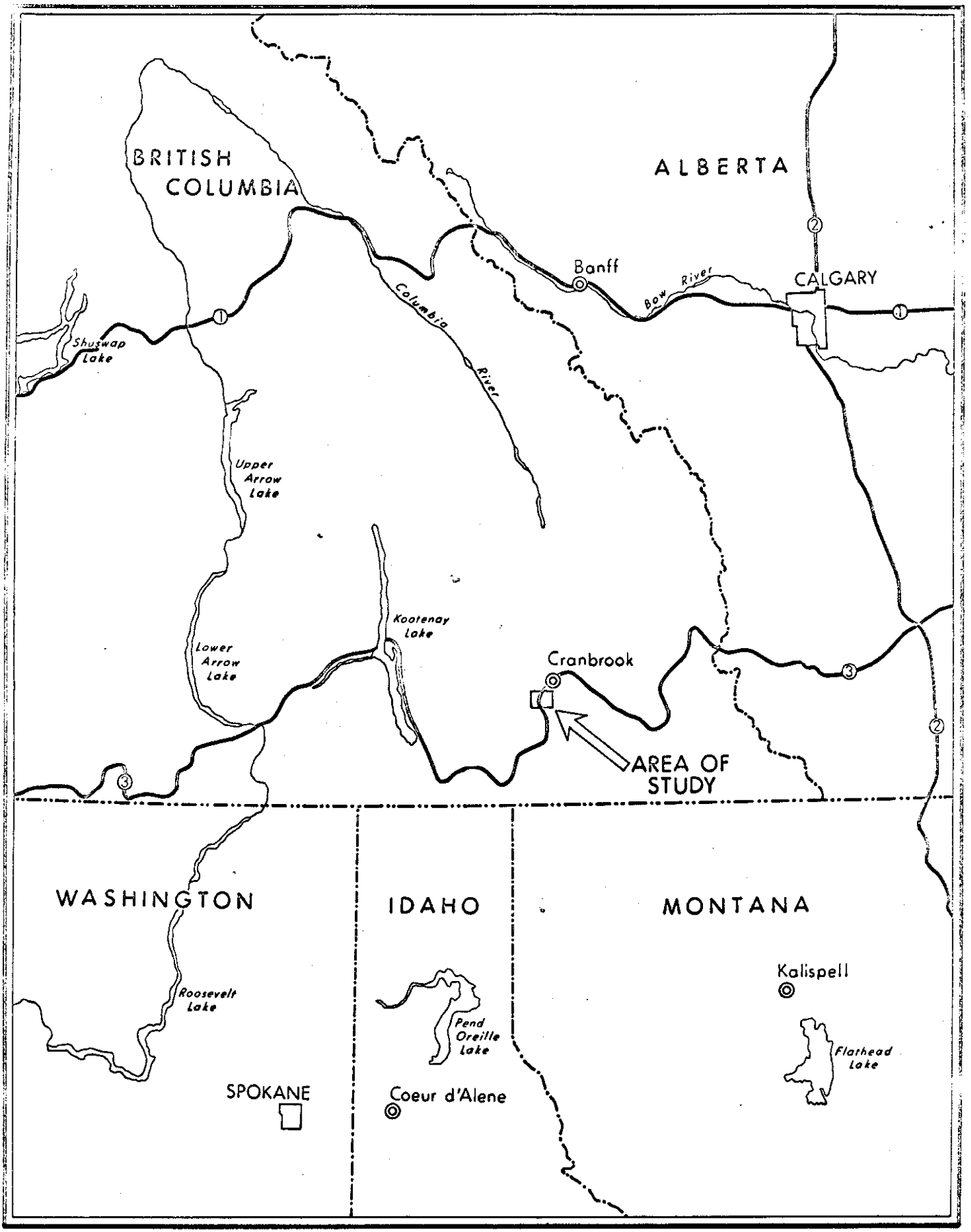
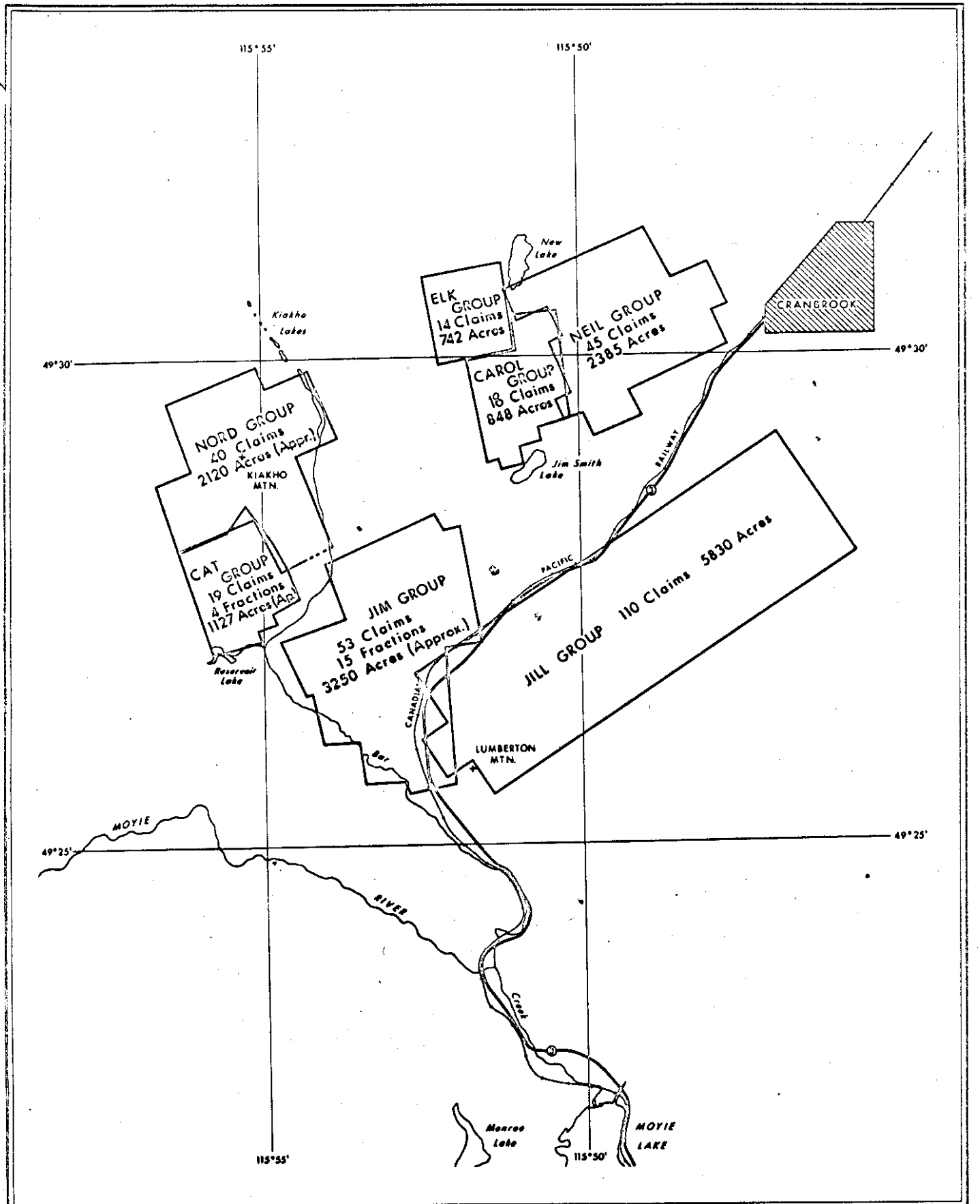
LIST OF PLATES



LOCATION MAP

PLATE 1



INDEX MAP

PLATE 2

SHOWING

CRANBROOK PROJECT
CLAIM GROUPS

GEOPHYSICAL REPORT - Nord Group of Claims,
Cranbrook Project, Cranbrook, British Columbia.

INTRODUCTION

Placid Oil Company's claims in the Cranbrook area consist of 297 Province of British Columbia mining claims and 19 fractional claims, covering an area of approximately 16,302 acres. Plate A indicates the general area in southeastern British Columbia where the Cranbrook Project is located with respect to the city of Cranbrook, the major highways, railways and lakes. The claims cover an area beginning on the western boundary of the city of Cranbrook and stretch westward a distance of seven miles. Plate 1 shows in more detail the exact configuration of each claim group.

The Nord group of claims is one of the group of claims included in the Cranbrook Project. This group consists of 40 claims named 1 - 40 inclusive. Nord 1 - 6 were staked by J.S. Scott on April 22, 1967, and recorded in Vancouver on April 27, 1967. Nord 7 - 14 were staked by E.J. Frost on April 19 - 20, 1967 and recorded in Cranbrook on April 21, 1967. Nord 15 - 34 were staked on April 22 - 23, 1967 by J.S. Scott and recorded in Vancouver on April 27, 1967. These claims were then sold to Placid Oil Company, the Bill of Sale showing a date of June 6, 1967. Nord claims 35 - 40 were staked by J.S. Scott on June 9, 1967 and sold to Placid Oil Company on June 12, 1967.

During the past field season of 1967, the initial stages of an exploration program to evaluate these claims was inaugurated. The work consisted of establishing a north-south base line designated as Base Line E, originating from Base Line A at the 120+00 W station on Base Line A and driven north normal to Base Line A. At a point 9000' north of Base Line A, Base Line F was established normal to Base Line E. Picket lines were cut normal to Base Line F and at 500-foot intervals along Base Line F. These picket lines were extended northward to the boundary of the claim group and southward to the Cat Claim boundary, and in some cases, terminating before the boundary was reached due to vertical mountain faces. These lines were cut to give control to geophysical and geological surveys. The field season was interrupted by an unusually dry summer with the result that the B.C. Forest Service closed the forest to travel and exploration. This resulted in Placid Oil Company being forced to suspend survey operations during the months of August and September, resulting in less field work being accomplished than had originally been planned. The magnetometer survey was not completed and the geophysical (Induced Polarization) survey was not initiated on the Nord group of claims. It is intended that during the 1968 field season, an induced polarization survey will be conducted on the property, and the magnetic survey will be completed. Survey operations

were continued upon the re-opening of the forest in September but sufficient time was not available to complete the magnetometer survey. All geophysical lines as indicated on the enclosed map have been cut, chained and 100-foot stations posted. These claims are situated approximately 7500' above sea level with the result that snow accumulated on the mountainside early in November. Line cutting operations were continued in November but the snow reached a thickness of over 3' by the end of November necessitating the purchase of a powered toboggan (Sno-Cruiser) to provide transportation for the magnetometer crew. By the second week in December, the snow had become too thick to enable the crew to carry out an efficient program even using snow shoes, and the project was suspended until the 1968 field season.

The geological report covering this area is contained in a report by the author titled "Geological Report - Jim, Cat, Carol, Nord and Neil Claims, Fort Steele Mining Division, Cranbrook, British Columbia, Latitude 49°, Longitude 115°, NW, January 1968", submitted to the Department of Mines and Petroleum Resources in January 1968.

LOCATION AND ACCESSIBILITY

An inspection of the index map, Plate II, shows that the Nord claims are located southwest of the city of Cranbrook. Access to the property is by a secondary road which leaves Highway No. 3 at the abandoned townsite of Lumberton. At a distance of two and one-half miles west of this junction, a forestry road leaves the secondary road and proceeds to the Kiakho Mountain fire lookout tower. This road is maintained by the British Columbia Forest Service and can be used in the dry season by regular automobiles. In wet season or if snow is present, the road is only suitable for the larger four-wheel drive type of vehicles. Vehicles used by the survey crew consisted of one 1-ton GMC four-wheel drive, one 1-ton Chevrolet van, one Chevrolet pickup two-wheel drive, one power toboggan (Sno-Cruiser), and two tote-goats, an off-the-road type of motorcycle. During the last part of November and during December, the survey crew was required to use snow shoes to survey the picket lines.

OUTLINE OF WORK

Base Line E and Base Line F were driven using a transit. Base Line E was driven normal to Base Line A on an azmuth of 010° with Base Line F driven approximately east-west normal to Base Line E. The picket lines were located from known survey points on the transit line and advanced by means of Brunton compasses. The transit lines were cut wide enough that up to 400-foot transit shots could be made. The picket lines were located and marked by means of coloured plastic flagging, cleared of underbrush and additionally marked with axe blazes on the trees. This part of the forest has suffered considerable wind damage with the result that many trees have been blown down and lodged in growing trees. It was necessary to spend considerable time in clearing these lines in preparing them for the magnetometer and the induced polarization survey. It was necessary to traverse the compass lines and cut any lodged and windfallen trees with chain saws. This increased the cost of cutting these lines by a factor of 2 or 3, when compared to other lines on the adjoining claims.

Magnetic readings were taken at 100-foot intervals along Base Lines E and F and the picket lines. The readings on the Base Lines were "levelled" and enough data taken to provide good diurnal and instrument drift corrections. A central magnetic base station was set up

with the instrument being checked at this station morning and night. A complete record of these readings is recorded. The picket lines were surveyed with the crew returning to the Base Line at intervals not exceeding two hours. In this way, all corrections for instrument drift, diurnal and magnetic storms could be made. The surveying crew consisted of one geological-geophysical technician and one assistant. Interpretation was done by the author.

INSTRUMENTATION

The survey was conducted using two different instruments, the Jalander Fluxgate and the Sharp MF-1 Fluxgate.

JALANDER FLUXGATE MAGNETOMETER

(Type 46-65, Serial No. 7225, Manufacturer- Optillinen Tehdas Oy, Helsinki, Finland.)

The Jalander Magnetometer is a hand-held, self-levelling instrument with an accuracy of better than 10 gammas, and a range of 250,000 gammas on five sensitivity scales. The instrument is built into an anodized, stream-lined aluminum case and weighs 3.2 pounds. It includes an oil-damped fluxgate which automatically levels itself in a vertical direction, thus measuring the vertical magnetic field. The electronic part is completely transistorized and fed by twelve 1.5 volt, easily available standard penlite batteries. Readings are obtained within a few seconds.

The instrument is temperature compensated up to one gamma per degree Fahrenheit. Each instrument is individually calibrated and the results of this survey are corrected for this instrument.

SHARP MF-1 FLUXGATE MAGNETOMETER

The second instrument was a Sharp MF-1 Fluxgate Magnetometer manufactured by Sharp Instruments, Toronto, Ontario. This instrument is quite similar to the Jalander instrument in that it is fully transistorized, temperature compensated, hand-held, and needs only coarse levelling and no orientation. It is a direct-reading, instrument with the galvinometer reading directly in gammas. Both instruments can be zeroed at a base station which greatly simplifies the operation. The Sharp instrument has a maximum sensitivity of 10 gammas per scale division with a readability of 5 gammas. The instrument has five sensitivity scales with a range of $\pm$ 100,000 gammas. Latitude may be adjusted from 10,000 to 75,000 gammas. The weight of the instrument is 9 pounds and is operated from a separate battery pack consisting of twelve "C" type flashlight cells. Both of these instruments were used to conduct the survey. The Sharp instrument was rented from Sharp Instruments, Toronto, while the Jalander instrument is owned by Placid Oil Company. Severe technical difficulties

were encountered with the Jalander magnetometer and this instrument had to be returned to the service department several times during the survey period and since the field season was nearing an end, it was necessary to rent the MF-1 Sharp instrument.

DISCUSSION OF RESULTS

An inspection of the line profiles found in the pocket of this report represent the raw data as obtained in the field. Even in this form, an analysis of the profiles indicates that magnetic features can be carried from survey line to survey line, indicating that continuous features representing material with contrasting magnetic characteristics can be mapped using the magnetometer.

Considerable technical difficulty was experienced with the Jalander Fluxgate instrument which made it necessary that the instrument be returned to the factory for repairs and recalibration. Enclosure No. 2 shows the profile obtained along Base Line E (also designated as Line 120+00W) at different dates after the instrument had been returned from the factory. This profile bears the following dates: August 8, 1967; October 26, 1967; and December 1, 1967.

Enclosure No. 1 is a map of the area covered by the Nord claims. All compass lines shown have been cut, chained and posted at 100-foot intervals. Due to the delay caused by the forest closure due to the danger of forest fires, only lines bearing readings expressed in Gammas were surveyed with the magnetometer. This amounts to 48,200 feet or 9.1 miles of line, just over one-third of the area. Total lines cut and prepared for

magnetic and I.P. survey amounts to 33.6 miles. A program to complete the survey of these claims will begin June 1, 1968 and will consist of an Induced Polarization survey and the completion of the magnetometer survey.

The zones considered to have anomalous magnetic readings on the profiles (Enclosures 2 - 5) are marked in red. These red zones were then transferred to the lines on Enclosure No. 1 and joined to form the area of anomalous magnetic readings, labelled on Enclosure No. 1 as anomaly 1 to anomaly 4.

Anomaly No. 1

This area contains magnetic readings that are 80 to 125 gammas below the regional magnetic readings. This anomaly is probably due to the distortion in the magnetic field caused by the strong positive magnetic field of anomaly no. 2. Anomaly no. 1 represents the hanging wall of the Cranbrook fault.

Anomaly No. 2

This anomaly generally coincides with the general location of the east-west striking Cranbrook fault. See Geological Report of this area by the author, dated January 1968. It varies in strength from 50 to 250 gammas above regional and has a strong east-west feature. The feature is still open at each end.

Anomaly No. 3

Anomaly No. 3 is slightly weaker than Anomaly No. 2, varying from 50 to 200 gammas above regional. It can be readily mapped from line to line. It would represent either a branch fault from the main Cranbrook fault or possibly a mineralized zone. This feature warrants further investigation.

Anomaly No. 4

Anomaly No. 4 as mapped on Base Line F profile, Enclosure 4, marks the western extension of the Kiakho Granite intrusive. This anomaly is exceptionally strong (+700 gammas) and is characteristic of the granite intrusives of this area.

CONCLUSIONS AND RECOMMENDATIONS

This magnetic survey has mapped four anomalous magnetic areas as discussed above. Anomaly 1 and 2 represent geological features not previously mapped but suspected in this area, while Anomaly 3 represents a zone to be more fully evaluated. Additional evaluation should take the form of an Induced Polarization survey with any anomalous zones shown on the I.P. survey being diamond drilled and cored. Anomaly No. 4 maps the western extension of the granite intrusion, hereto unmapped due to soil and vegetation cover.

Respectfully submitted,

R.A. Buckley, P. Geol.

April 15, 1968

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R.A. Buckley — Qualifications

A. I, Ronald A. Buckley, am by profession a Geologist, residing in the City of Calgary, in the Province of Alberta.

B. I graduated in the year 1957 from Acadia University, Wolfville, Nova Scotia, with a Bachelor of Science Degree in Geology, with a minor in Chemistry and Physics.

C. I graduated in the year 1959 from McGill University, Montreal, in the Province of Quebec, with a Master of Science Degree in Geology.

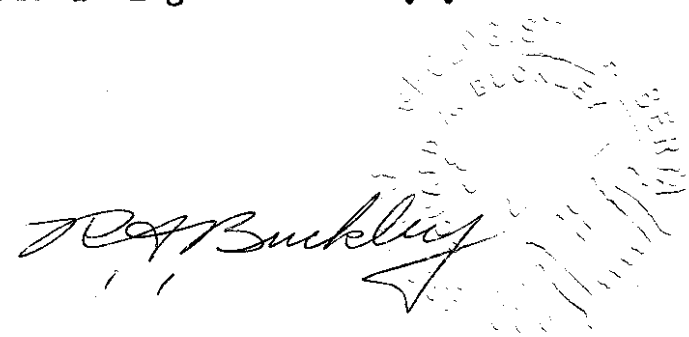
D. Since graduation, I have been employed by a Mining Company, a Provincial Department of Mines, and two Oil Companies in the search for oil, gas and metallic minerals.

E. I am a member:

The Alberta Association of Petroleum Geologists
Mineralogical Association of Canada
Society of Economic Geologists
Society of The Sigma XI
Canadian Institute of Mining and Metallurgy
Association of Professional Engineers of Alberta.

F. I have applied for membership:

Association of Professional Engineers of B.C.



R.A. Buckley, B.Sc., M.Sc., P. Geol.

April 15, 1968
Calgary, Alberta

PLACID OIL COMPANY

860 GUINNESS HOUSE
CALGARY, ALBERTA

TELEPHONE
263-4310

May 29, 1968

To Whom it May Concern:

This letter is to certify that the Geological-Geophysical Technician who conducted the magnetic survey on the Nord Claims was Mr. Wilfred Kaiser of Calgary.

His part in the survey consisted of taking magnetic readings along pre-cut and chained survey lines at 100 foot intervals. The readings, along with time, date, temperature and base station readings were recorded in a conventional field notebook.

Field procedure consisted of hand holding the magnetometer and leveling it by means of the built-in bull's eye bubble level. When the instrument is in the level position, the meter reading is recorded. The instrument can be as much as 5 to 8 degrees from the level position with no noticeable effect on the meter display. No corrections are necessary for azimuth.

Mr. Kaiser has been employed for two field seasons (1966, 1967) by Placid Oil Company in the capacity of Field Technician, fulfilling his duties as Geological Assistant, Geophysical Technician and Field Operations Supervisor. Mr. Kaiser will be returning to the employ of Placid Oil Company in June, 1968.

All exploration operations and field personnel are under the direct supervision of the undersigned.

R. A. Buckley
Chief Geologist, Mining

RAB:ch

ANOMALY No.1

ANOMALY No.2

ANOMALY No.3

ANOMALY No.4

Bar Creek

Kiakho Lakes

Kiakho Creek

Palmer Bar Creek

BASE LINE F

BASE LINE A

BASE LINE E

L.9691

L.12437

L.12438

L.5254

L.5253

L.5241

L.5240

L.5242

115°57' 115°56' 115°55' 115°54' 115°53'

49°30' 49°29' 49°28' 49°27'

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 1244 MAP 3

1244

ENCLOSURE NO I TO ACCOMPANY
GEOPHYSICAL (MAGNETOMETER) REPORT

NORD CLAIMS
FORT STEELE MINING DIVISION
CRANBROOK AREA B.C.

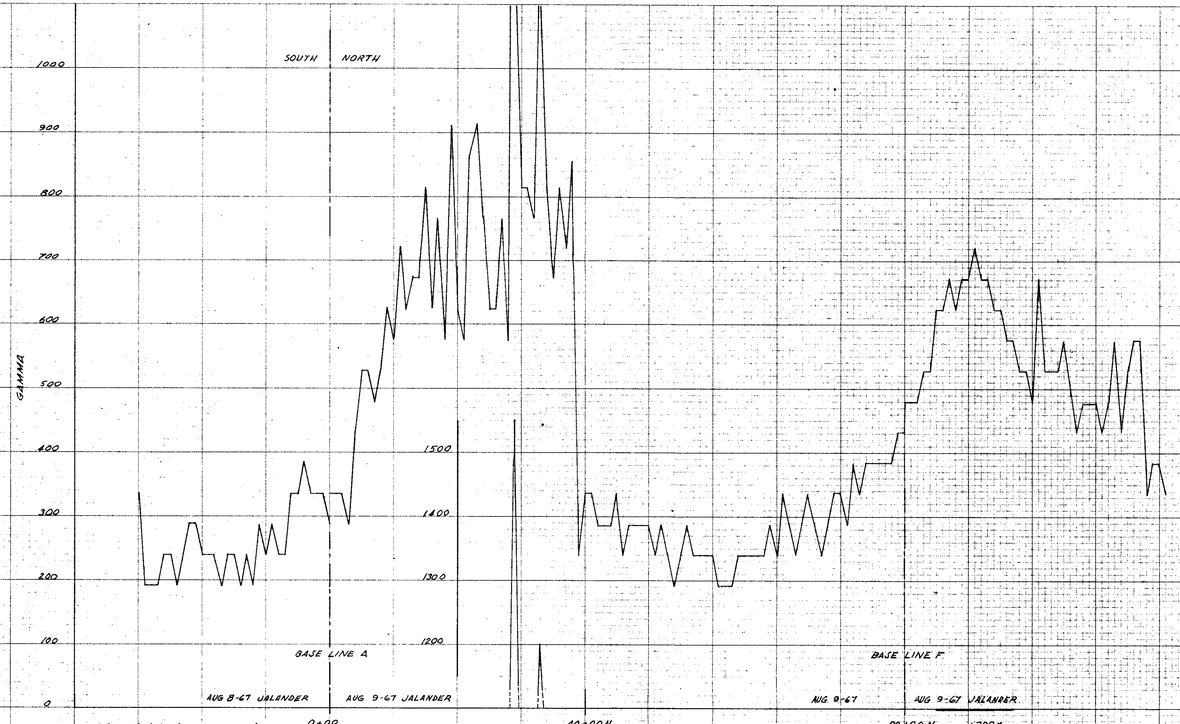
SCALE
8 inches to 1 mile

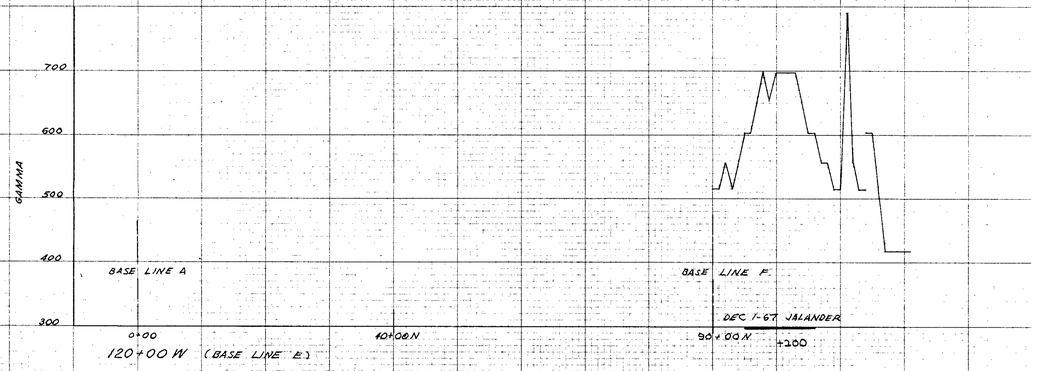
PLACID OIL COMPANY
CALGARY ALBERTA

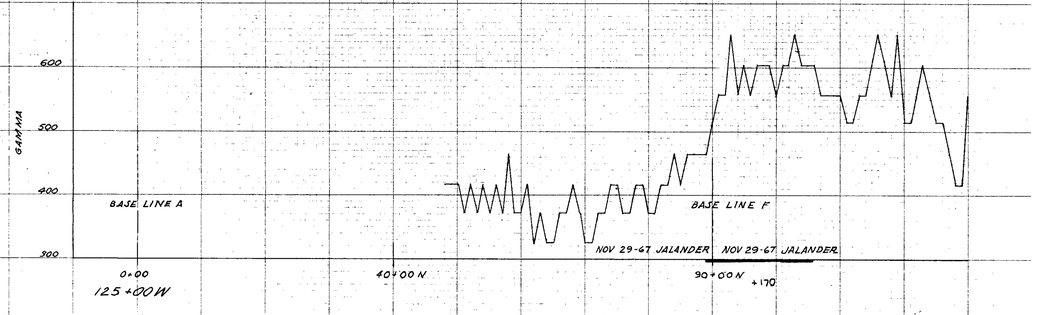
R. A. Buckley

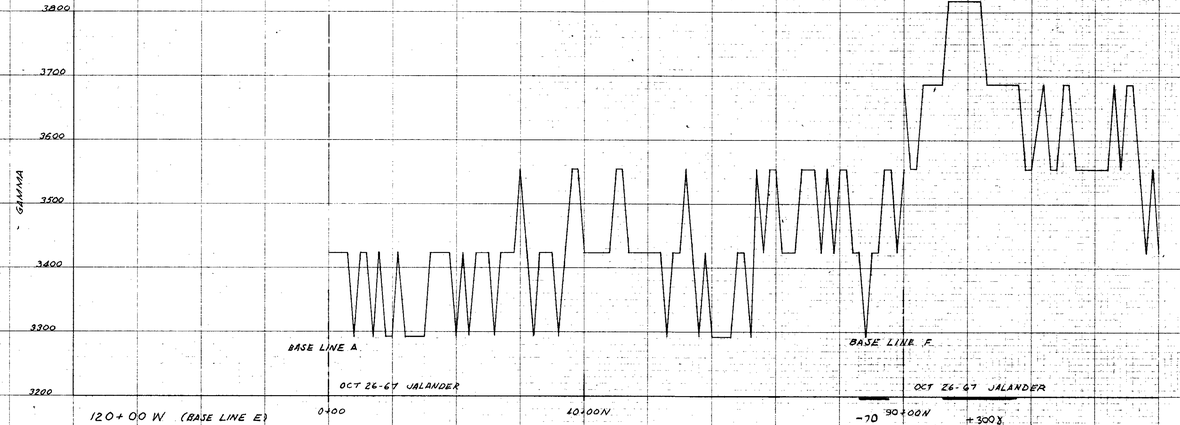
R. A. BUCKLEY P. Geol

APRIL 15, 1966









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Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 1244 MAP 7

ENCLOSURE NO. 2 TO ACCOMPANY
GEOPHYSICAL (MAGNETOMETER) REPORT

NORD CLAIMS
FORT STEELE MINING DIVISION
GRANBROOK AREA B.C.

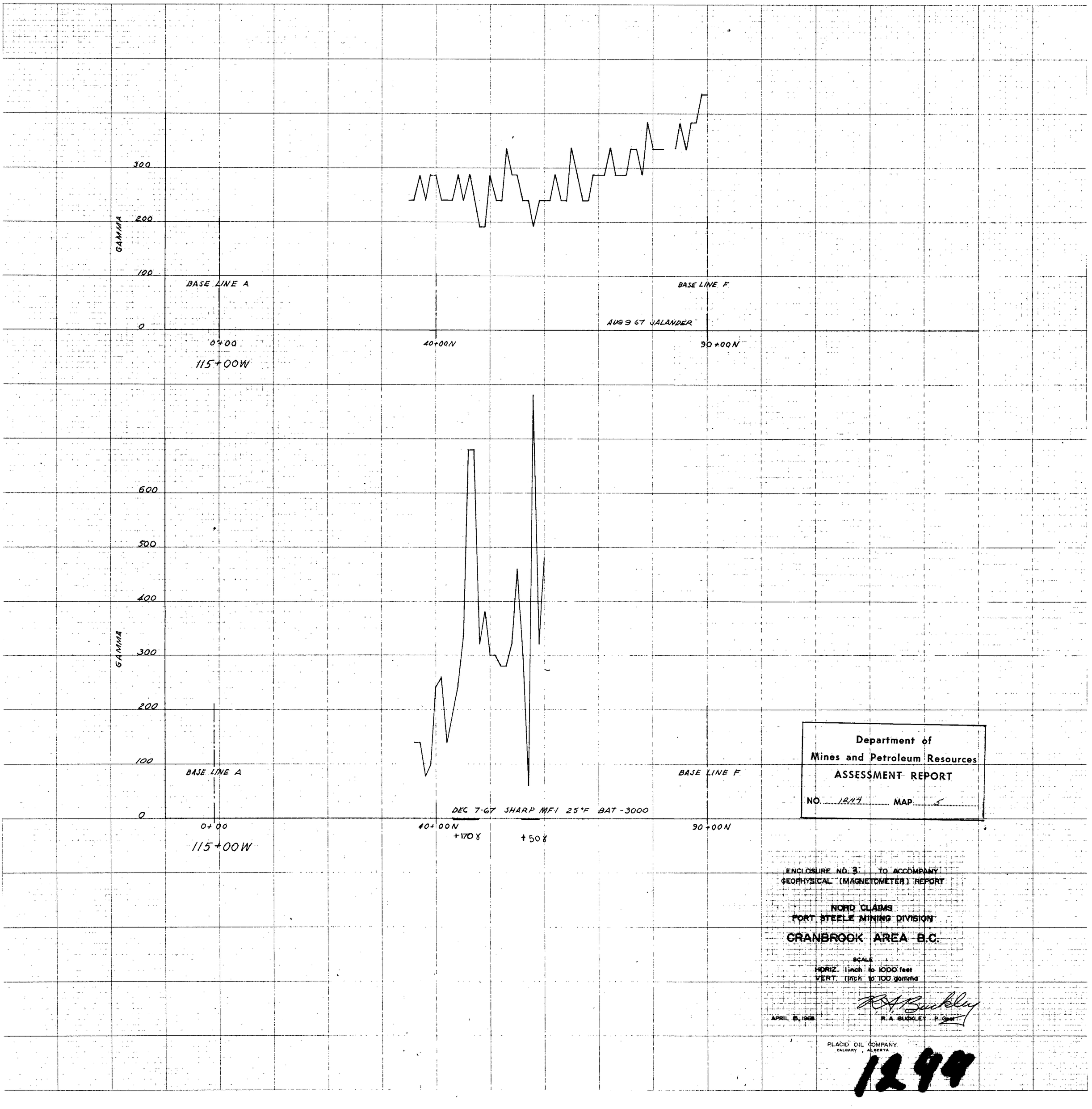
SCALE
HORIZ. 1 inch to 2000 feet
VERT. 1 inch to 100 gamma

APRIL 16, 1968

R.A. BUCKLEY, P. Geol.

PLACID OIL COMPANY
CALGARY, ALBERTA

1244



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Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 1247 MAP 5

ENCLOSURE NO. 3 TO ACCOMPANY
GEOPHYSICAL (MAGNETOMETER) REPORT

NORD CLAIMS
PORT STEELE MINING DIVISION

CRANBROOK AREA B.C.

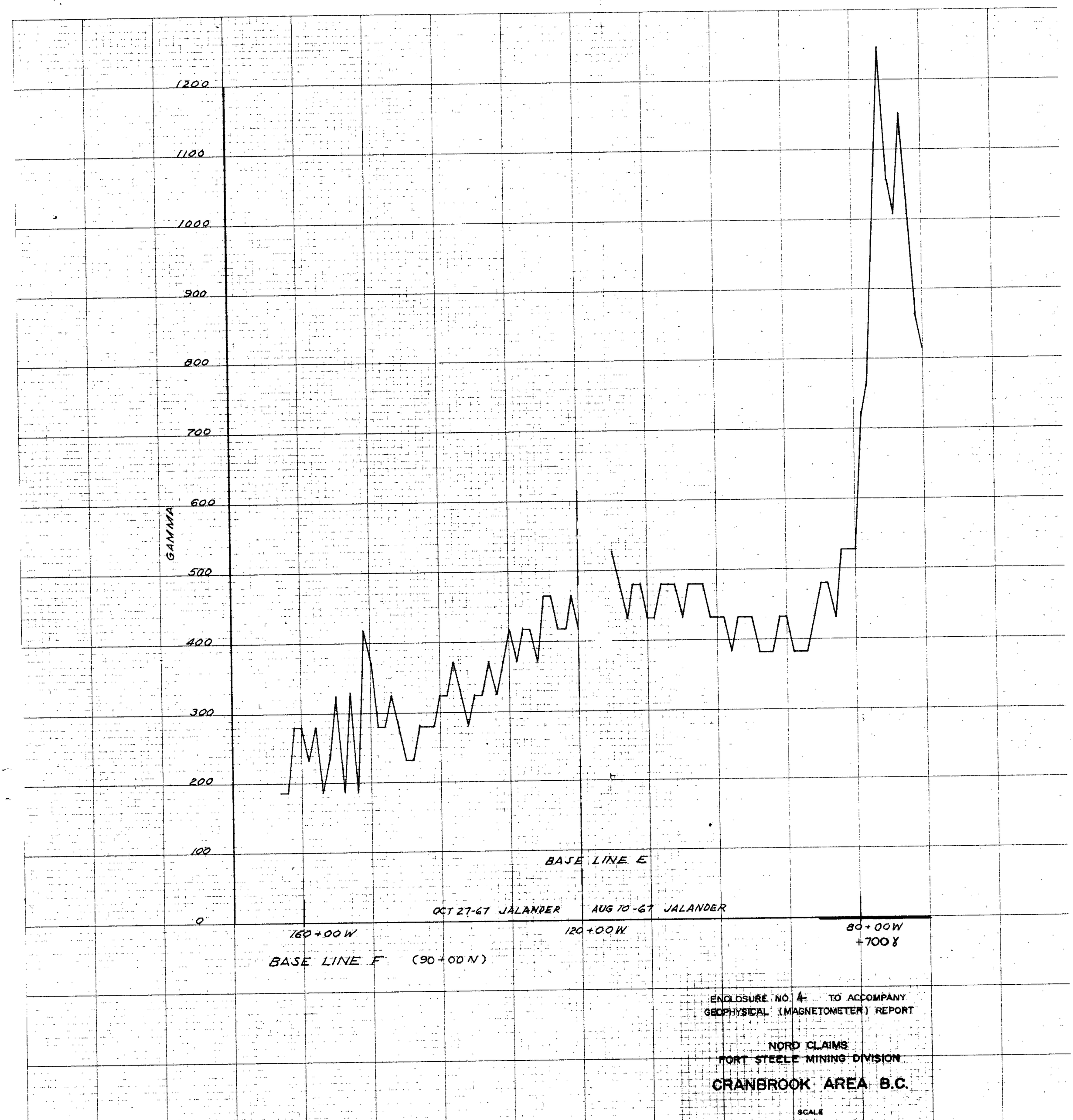
SCALE
HORIZ. 1 inch to 1000 feet
VERT. 1 inch to 100 gamma

APRIL 15, 1968

R.A. Buckley
R. A. BUCKLEY P.Geol.

PLACID OIL COMPANY
CALGARY, ALBERTA

1247



ENCLOSURE NO. 4 TO ACCOMPANY
GEOPHYSICAL (MAGNETOMETER) REPORT

NORD CLAIMS
FORT STEELE MINING DIVISION

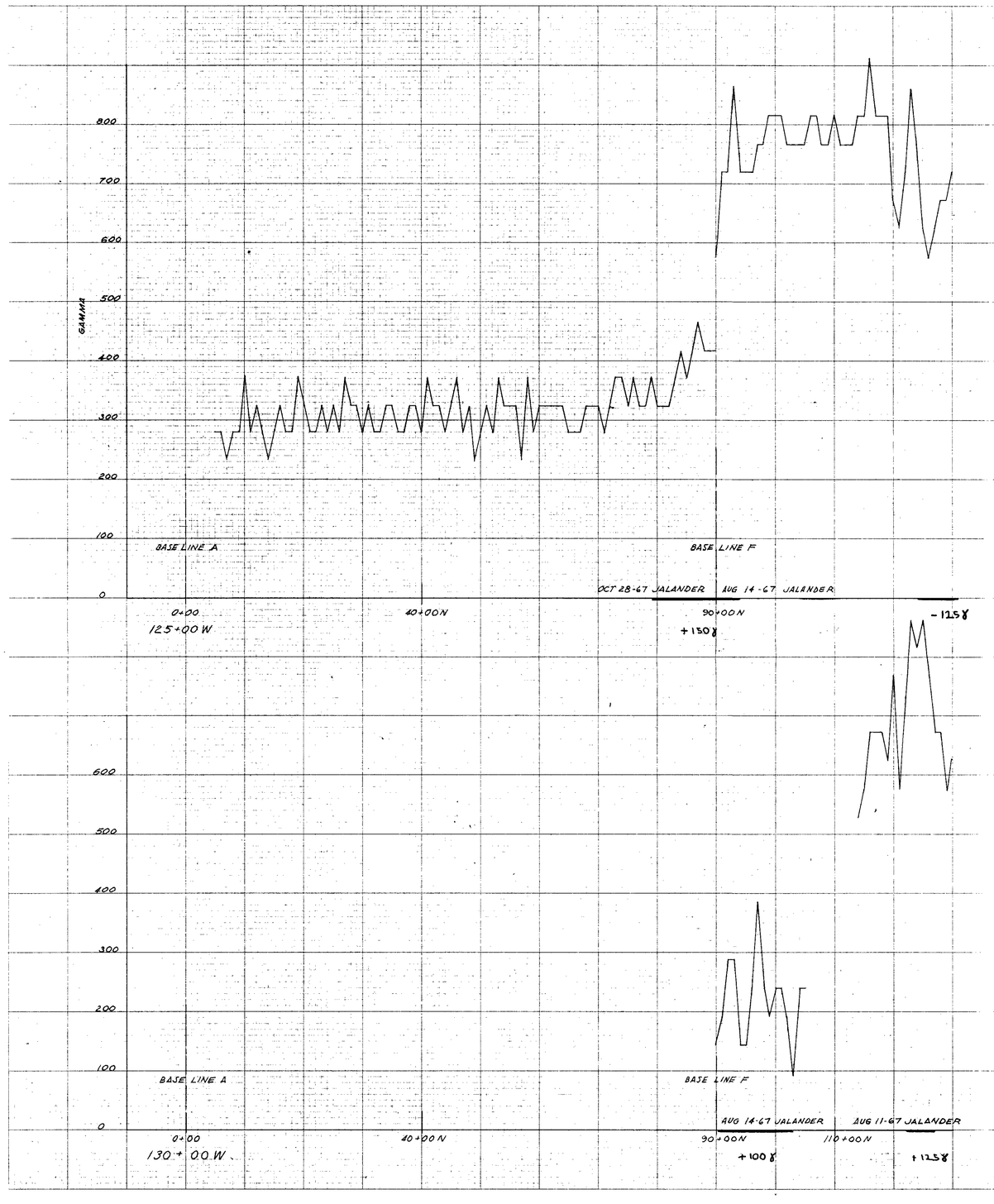
CRANBROOK AREA B.C.

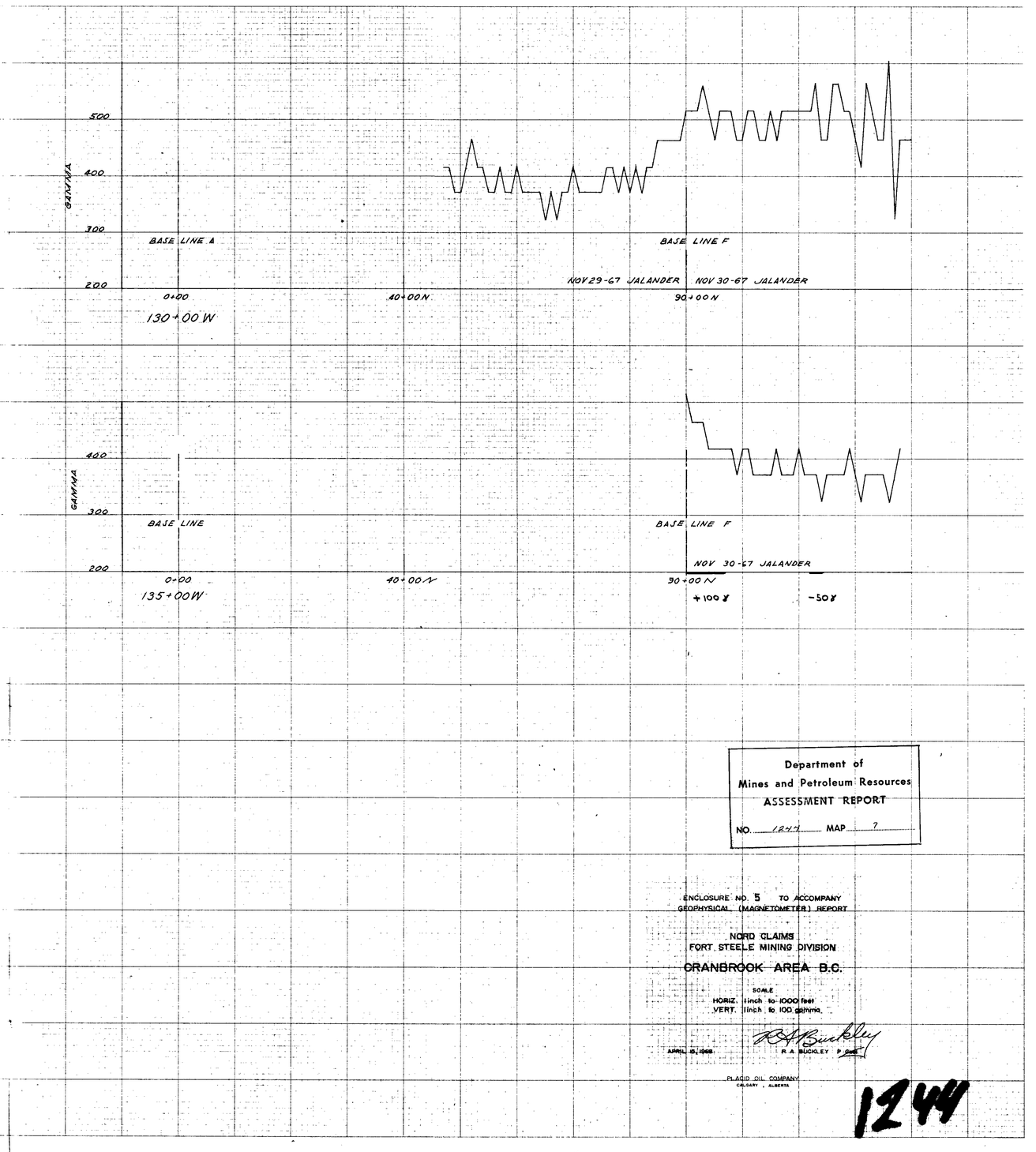
SCALE
HORIZ. 1 inch to 1000 feet
VERT. 1 inch to 100 gamma

APRIL 15, 1968

R.A. Buckley
R. A. BUCKLEY P. Geol.

PLACID OIL COMPANY
CALGARY, ALBERTA





Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1244 MAP ?

ENCLOSURE NO. 5 TO ACCOMPANY
GEOPHYSICAL (MAGNETOMETER) REPORT

NORD CLAIMS
FORT STEELE MINING DIVISION
CRANBROOK AREA B.C.

SCALE
HORIZ. 1 inch to 1000 feet
VERT. 1 inch to 100 gamma

APRIL 15, 1968

R. A. BUCKLEY P. Geol.

PLACID OIL COMPANY
CALGARY, ALBERTA

1244