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RADEX MINERALS LIMITED

EXPLORATION - 1969
QUARTZ MINERAL PERMIT NO. 31
POTTS LAKE, ALBERTA

Trigg, Woollett & Associates Ltd.

September, 1969

R. A. Olson

RADEX MINERALS LIMITED

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CONTENTS

TABLES

ILLUSTRATIONS

RADEX MINERALS LIMITED

EXPLORATION - 1969

QUARTZ MINERAL PERMIT NO. 31

POTTS LAKE, ALBERTA

SUMMARY

Radex Minerals Limited Quartz Mineral Permit No. 31 is underlain by Archean metasedimentary and igneous rocks. One hundred and five radioactive occurrences were discovered within Permit No. 31. The majority of these occurrences were caused by radioactive pegmatites. None of the occurrences discovered are economically important. Reported occurrences of molybdenite and arsenopyrite are also unimportant. Areas of interest located by the geochemical water survey should be re-prospected for possible concentrations of uranium and other metallic minerals indicated.

INTRODUCTION

Location and Access

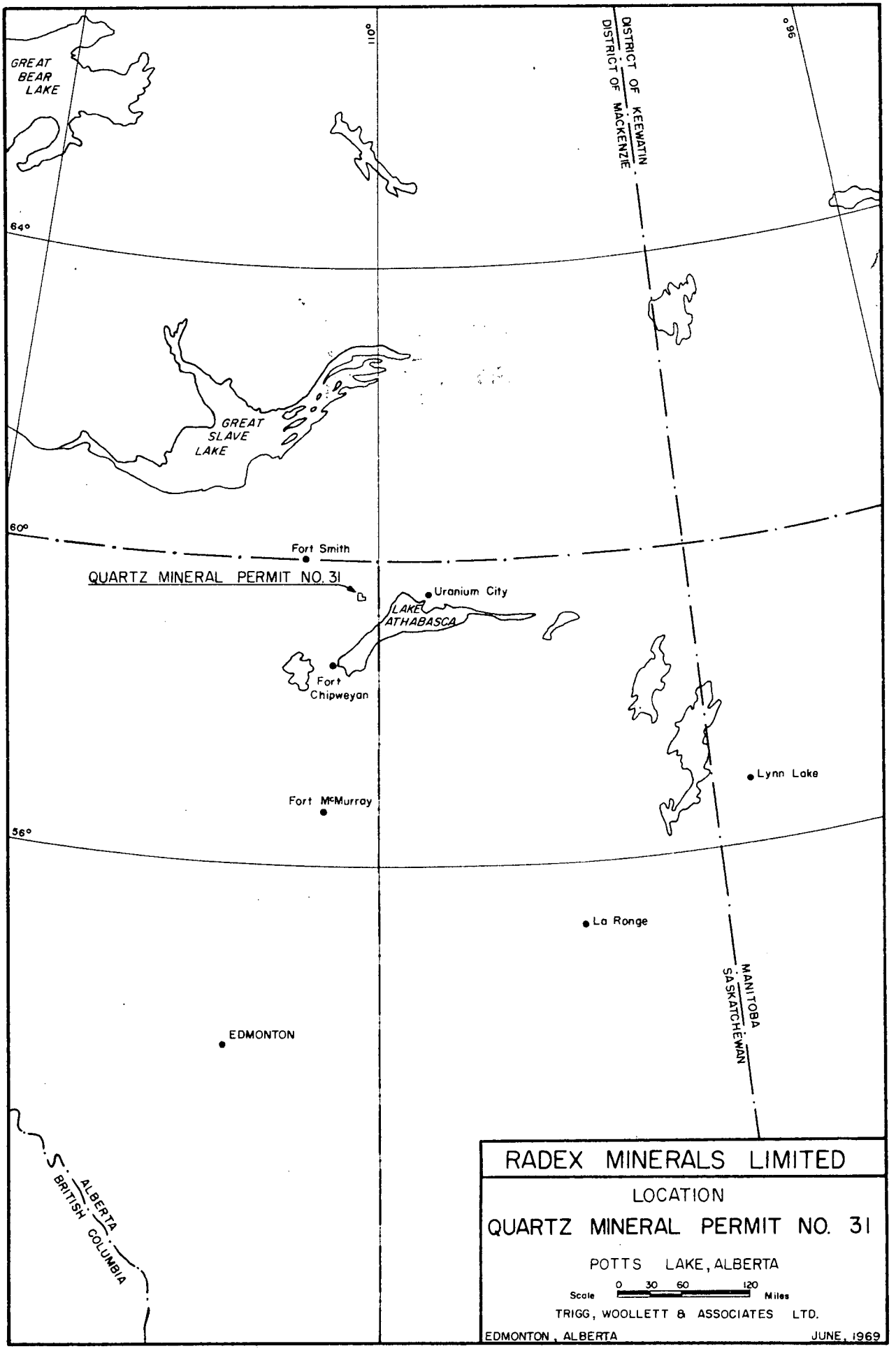
Radex Minerals Limited Quartz Mineral Permit No. 31 is centered at approximately 110°30' west longitude and 59°45' north latitude (Dwg. 9R31-1). The region is accessible by float- or ski-equipped aircraft from Uranium City, 60 miles to the east or Fort Smith, 45 miles to the west. The permit encompasses an area of approximately 60 square miles.

Physiography

Pleistocene glacial scouring has left numerous rock-basin lakes, low-rounded hills and a locally rugged surface having a maximum relief of about 250 feet. The elevation ranges from 950 to 1300 feet above sea level. Bedrock is exposed over about fifty per cent of the map-area and only a small proportion of the covered area is muskeg.

Previous Work

In 1958, 1959, 1960, 1961 and 1963, the Research Council of Alberta (Godfrey, 1963, 1966) carried out a mapping program on a scale of one inch equals one-half mile in the northeastern corner of Alberta adjacent to the Saskatchewan boundary. Traverses were run at one-third to one-half mile intervals and metallic mineral occurrences and radioactivity greater than three times background were recorded (Godfrey, 1963).



19690010 DWG. 9R31 – 1

Previous Work (cont'd)

Godfrey (1966) reported nine occurrences of radioactivity, two occurrences of molybdenite, one occurrence of arsenopyrite and two gossans within Permit No. 31.

GENERAL GEOLOGY

General

Radex Minerals Limited Quartz Mineral Permit No. 31 is underlain by a complex of igneous and metamorphic rocks, all of which are Archean in age (Godfrey, 1966). Six rock groups have been distinguished: metasedimentary and associated rocks, porphyroblastic biotite granites, granite-gneiss, amphibolite, massive to foliated granites and pegmatites, and mylonites. Biotite and hornblende granite-gneiss with scattered bands and lenses of metasedimentary rocks and amphibolite are predominate in Permit No. 31.

Lithology

Due to their relationship to mineralization in other areas, the following rock types are of interest. The rock types are listed in order of decreasing geologic age (Godfrey, 1966).

Metasedimentary Rocks and Granite-Gneiss Complex

The metasedimentary rocks consist mainly of pure to impure quartzite, biotite schist and phyllite. Granitic material is common in most of the metasedimentary bands, locally making up to twenty per cent of the total rock in outcrop. Quartzo-feldspathic pegmatitic bodies ranging in size from a few inches to up to 100 feet frequently occur as lenses or stringers and are usually elongated in the direction of the foliation or, more rarely, cross-cutting the foliation.

Biotite and hornblende granite-gneisses are the principal rock types in the region; they underlie approximately seventy-five per cent of the map-area.

The granite-gneisses consist mainly of orthogneiss and paragneiss with minor amphibolite and metasedimentary bands and lenses. The granite-gneisses are massive to foliated to banded rocks and often exhibit a variety of small scale structures related to extensive plastic deformation.

The metasedimentary rocks occur as bands and lenses within the granite-gneisses. Both rock types have been strongly folded and Godfrey (1966) believes them to be the oldest rocks exposed.

Biotite Granite F and Mylonite P

Biotite granite F and its closely related cataclastic derivative, recrystallized mylonite P occur in a north trending belt along the eastern shore of Charles Lake. These rocks are erosion resistant and tend to form ridges, headlands and islands.

Biotite granite F typically occurs with white to grey subhedral to euhedral feldspar megacrysts, one to four inches in size and averaging two inches, in a coarse grained, massive matrix of quartz, feldspar and biotite.

Recrystallized mylonite P typically is dark coloured with white to grey anhedral feldspar porphyroclasts and euhedral feldspar porphyroblasts, one-half to two inches in size, in an aphanitic locally medium grained matrix. It generally has a foliated or locally gneissose texture.

Structure

Regionally, the metasedimentary rocks and granite-gneisses have a dominant northerly structural trend and a nearly vertical foliation. In local areas, minor folds, saddle fold structures and domal structures can be observed.

Faults, breccia zones and mylonite belts occur throughout the region. A major mylonite belt is present along the western edge of Permit No. 31 and parallels a topographically inferred, north trending fault zone through Charles Lake. A belt of less intense mylonitization occurs on the east side of Whaleback Lake. Faults generally parallel the regional northerly trend but two northeasterly trending transverse faults occur north and south of Camsell Lake.

AREAS OF INTEREST

Four general areas, each containing metasedimentary rocks, were chosen as areas of particular interest in Permit No. 31 and are illustrated in Dwg. 9R31-2 (Trigg, 1969). These areas were:

(1) The mylonite belt and bordering quartzite bands along the eastern side of Charles Lake. The apparent relationship of the faulted and mylonitized belt with radioactive occurrences reported by Godfrey (1966) indicated a favourable environment for possible uranium concentrations.

(2) A belt located along the eastern side of Whaleback Lake, particularly in the central and northern part of this belt. Mylonitized metasediments and a northeasterly trending transverse fault occur in this area.

AREAS OF INTEREST (cont'd)

(3) The south end of Potts Lake. This area contains metasedimentary rocks, a north-northeast trending fault, and three reported radioactive occurrences (Godfrey, 1966).

(4) The region between Boudin and St. Agnes Lakes. Metasedimentary rocks and faulting parallel to the foliation of the country rocks occur in this area.

All four areas were thought to exhibit favourable environments for the occurrence of uranium deposits.

METHOD OF EXPLORATION

A geologist, prospector, senior assistant, two junior assistants and a cook established a base camp on the west arm of Potts Lake on May 23, 1969. Time spent on the property by field personnel is tabulated in Table III.

Crew movement within Permit No. 31 was assisted by canoe and by helicopter. The helicopter was also used to conduct the airborne radiometric survey. Aviation fuel and camp supplies were obtained from Uranium City by Beaver and Otter aircraft.

An airborne radiometric survey (Lipsett, 1969) was conducted initially over Permit No. 31. Two two-man prospecting crews, equipped with SPP2N scintillometers, ground checked and prospected the areas of anomalous radioactivity. All radioactive occurrences discovered were tabulated and are listed in Table I.

Prospecting was also conducted in the areas of major interest and to some extent in the less favourable areas. All occurrences of radioactivity greater than 500 counts per second (SPP2N) were noted by the prospectors; results are tabulated in Table II. Anomalies of greater interest were examined by a geologist to determine whether further detailed work was warranted. This detailed work included a tape and compass survey, geological mapping and a detailed ground radiometric survey.

Prospecting and geological evaluation were also carried out in the area of radioactive and mineral occurrences reported by Godfrey (1966); results are summarized in Table II.

GEOCHEMICAL SURVEY

A geochemical water survey was conducted within Permit No. 31 by Bondar-Clegg & Company Ltd. on June 30, 1969.

Sixty water samples were collected from lakes and analyzed for radon, uranium, copper, nickel and zinc.

GEOCHEMICAL SURVEY (cont'd)

At the writing of this report only a few analytical results have been received and it has not been possible to draw any definite conclusions as to anomalous areas. A preliminary interpretation of results for radon content of lake water indicates two possible anomalous areas west of the south end of Potts Lake.

AIRBORNE RADIOMETRIC SURVEY

An airborne radiometric survey was carried out over Permit No. 31 from May 25 to May 27, 1969 (Lipsett, 1969).

Twenty-six radioactive anomalies were discovered. Ground checks of the anomalies and prospecting of these immediate areas were conducted (Table I).

The anomalies were found to be caused by areas of higher than normal background radioactivity.

RADIOACTIVE AND MINERAL OCCURRENCES

One hundred and five radioactive occurrences with radioactivity greater than 500 counts per second (SPP2N) were located in Permit No. 31 (Dwg. 9R31-4, Table II). Ninety-five of these were new discoveries. The other ten were occurrences of radioactivity or gossans reported by Godfrey (1966).

The majority of these radioactive occurrences were found to be caused by radioactive pegmatite lenses or stringers in the metasedimentary rocks and gneisses or by radioactive mafic layers in biotite and hornblende granite-gneiss. A small number of occurrences were caused by biotite-rich shear zones in mylonites or in metaquartzite.

Forty occurrences had radioactivity between 1000 - 3000 counts per second and three occurrences had radioactivity between 3000 - 5000 counts per second. The maximum count rate obtained within Permit No. 31 was 4000 counts per second at occurrence M44. This was obtained from a pegmatite over an area measuring four inches by four inches.

None of the radioactive occurrences discovered thus far within Permit No. 31 are economically important.

Two reported occurrences of molybdenite, one of arsenopyrite and two gossans (Godfrey, 1966) were checked by a geologist and found to be unimportant. Molybdenite occurred in very minor amounts and over a very limited area in both molybdenite occurrences. Arsenopyrite occurred in minor amounts in a chloritic gneiss. No other sulphide minerals or native metals were associated with arsenopyrite. Only minor radioactivity was associated with both gossans; no important sulphide minerals were observed in the gossans.

LEGEND

LITHOLOGY

- Mg — PINK QUARTZITE WITH AMPHIBOLITE BANDS
- Mgn — BIOTITE GRANITE GNEISS
- Mam — AMPHIBOLITE
- Peg — BIOTITE FELDSPAR QUARTZ PEGMATITE

SYMBOLS

- CONTACT (Definite, assumed)
- FOLIATION (Vertical, inclined)
- GNEISSOSITY (Vertical, inclined)
- MINERAL LINEATION
- MINOR FOLD, ANTICLINE (Axial plane: vertical, inclined; plunge)
- MINOR FOLD, SYNCLINE (Axial plane: vertical, inclined; plunge)
- DRAG FOLD (Axial plane: vertical, inclined; plunge)
- OUTCROP LIMIT
- 20' — CONTOUR LINES AT FIVE FOOT INTERVALS

19690016

RADEX MINERALS LIMITED

GEOLOGY

A17 SHOWING

PERMIT NO. 31

POTTS LAKE, ALBERTA

SCALE 0 20 40 80 FEET

TRIGG, WOOLLETT & ASSOCIATES LTD.

EDMONTON, ALBERTA JUNE, 1969

DWG. 9R31-6

DETAILED GEOLOGICAL MAPPING

Geological mapping (Dwg. 9R31-6) at a scale of one inch equals forty feet was carried out on the A17 showing which is located 7000 feet west of the south end of Whaleback Lake and 1300 feet north of a small lake (Dwg. 9R31-5).

The A17 showing was mapped to provide an example of the radioactive occurrences found within Permit No. 31.

Radioactivity occurs in a coarse grained, non-foliated biotite feldspar quartz pegmatite which is present as lenses of varying size in meta-quartzite and biotite granite-gneiss. The major pegmatite lens is approximately 100 feet in length and 20 feet wide at its maximum width. It occurs in medium to coarse grained pink biotite granite-gneiss close to the contact of the gneiss with the meta-quartzite. The trend of the major pegmatite lens parallels the axis of an anticline plunging 50 degrees to 030 degrees in the country rock. No radioactive minerals are visible and radioactivity probably is due to small grains of uraninite occurring in biotite in the pegmatite.

GROUND RADIOMETRIC SURVEY

A detailed ground radiometric survey (Dwg. 9R31-7) was conducted on the A17 showing. Readings were taken at intervals of five feet along the grid and at closer intervals and between the tie lines where necessary.

Radioactive highs occur in two zones which closely correspond to the outcrop pattern of pegmatite lenses. The average radioactivity is 150 to 500 counts per second with a maximum of 1400 counts per second occurring as a spot high.

More widely spaced radiometric surveys were conducted over the immediate surrounding area and a few spot highs with radioactivity between 1400 and 2900 counts per second were located but none are considered to be important.

CONCLUSIONS

Radioactivity occurs largely in pegmatite lenses or in mafic bands in granite-gneiss; no important occurrences of uranium were found. The A17 showing was mapped as an example of the radioactive occurrences discovered within Permit No. 31. Results from the geochemical water sampling survey are incomplete at this time and therefore no conclusions can be drawn.

RECOMMENDATIONS

Any anomalous areas indicated by the geochemical water survey should be thoroughly prospected, otherwise no further exploration for uranium is recommended.

[redacted]

R. A. Olson, B.Sc.

C. M. Trigg, Ph.D., P.Eng.

September 3, 1969.
Edmonton, Alberta.

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Godfrey, J. D. and Peikert, E. W. (1963) — Geology of the St. Agnes Lake District, Alberta. Research Council of Alberta, Prelim. Report 62-1.

Lipsett, E. (1969) — Airborne Radiometric Survey of Quartz Mineral Permit No. 31, Potts Lake, Alberta.

Trigg, C. M. (1969) — Proposed Exploration - 1969, Quartz Mineral Permit No. 31, Lake Athabasca Area, Saskatchewan.

TABLE I

AIRBORNE RADIOMETRIC ANOMALIES EXAMINED

Anomaly No.	Location	Comments
P31-7A	3/4 mile north of Potts Lake.	Anomaly attributed to high background.
P31-7B	3/4 mile north of Potts Lake.	Hornblende granite-gneiss; 125 to 150 cps (SPP2N).
P31-9A	1/4 mile north of Potts Lake.	Anomaly attributed to high background.
P31-25A	1 mile north of Whaleback Lake.	Pink pegmatite lenses in granite-gneiss; 150 - 350 cps (SPP2N).
P31-26A	2 miles northeast of Whaleback Lake.	Pink pegmatite; 150 - 200 cps (SPP2N).
P31-26B	1 mile north of Whaleback Lake.	Ridge of granite-gneiss; 100 - 175 cps (SPP2N).
P31-27A	Northeast of Whaleback Lake.	Anomaly attributed to high background.
P31-27B	Northeast of Whaleback Lake.	Anomaly attributed to broad area of high background.
P31-28A	Northeast of Whaleback Lake.	Anomaly attributed to broad area of high background.
P31-28B	Northeast of Whaleback Lake.	Anomaly attributed to high background.
P31-29A	Northeast of Whaleback Lake.	Anomaly attributed to broad area of high background.
P31-29B	Northeast of Whaleback Lake.	Anomaly attributed to high background.
P31-30A	Northeast of Whaleback Lake.	Anomaly attributed to broad area of high background.
P31-31A	West of Camsell Lake.	Anomaly attributed to broad area of high background.
P31-31B	East of Camsell Lake.	Anomaly attributed to high background.
P31-31C	East of Whaleback Lake.	Anomaly attributed to high background.

Anomaly No.	Location	Comments
P31-31D	East of Whaleback Lake.	Anomaly attributed to broad area of high background.
P31-32A	East of Whaleback Lake.	Anomaly attributed to broad area of high background.
P31-32B	East of Camsell Lake.	Anomaly attributed to high background.
P31-33A	East of Whaleback Lake.	Anomaly attributed to high background.
P31-33B	East of Whaleback Lake.	White and pink granite-gneiss; 125 - 150 cps (SPP2N).
P31-34A	East of Whaleback Lake.	Anomaly attributed to high background.
P31-34B	West of Whaleback Lake.	Anomaly attributed to high background.
P31-37A	East of Whaleback Lake.	Biotite granite-gneiss; 175 - 450 cps (SPP2N).
P31-41A	South of Whaleback Lake.	Mesocratic biotite granite-gneiss; 100 - 150 cps (SPP2N).
P31-41B	Southwest of Potts Lake.	Anomaly attributed to high background.

TABLE II

RADIOACTIVE OCCURRENCES

Showing Number	Location	Nature	Radioactivity
M1	Approx. 3/4 mile east of base camp.	Pegmatite in mesocratic gneiss, small.	Max. 1200 cps
M2	1/8 mile north of peninsula on Camsell Lake.	White pegmatite in mesocratic gneiss, small.	Max. 750 cps
M3	Approx. 1/3 mile south-southwest of Boudin Lake.	Pegmatite, 6"x6".	Max. 900 cps
M4	Approx. 1000' east of south end of Whaleback Lake.	Fracture in granite, few inches.	Max. 1100 cps
M5	1000' east of Whaleback Lake, 1000' north of M4.	Fracture in granite, very small.	Max. 2000 cps
M6	Near edge of little lake, 3000' east of centre of Whaleback Lake.	Fracture in granite, few inches.	Max. 900 cps
M7	2000' east of Whaleback Lake, approx. 1/2 mile south of north end.	Pegmatite, small.	Max. 750 cps
M8	500' west of Potts Lake, approx. 1/4 mile north of south end.	Pegmatite, 3'	Max. 3000 cps
M9	North shore of Prince Lake.	Boulders, 6".	Max. 1100 cps
M10	750' north-northwest of Prince Lake.	Pegmatite, 6".	Max. 1100 cps
M11	3500' west of Potts Lake.	Pegmatite, 6".	Max. 1100 cps

Showing Number	Location	Nature	Radioactivity
M12	750' west of Potts Lake, 750' north of M8.	Pegmatite, 3".	Max. 750 cps
M13	Approx. 1 mile east-southeast of south end of Potts Lake.	Fracture in granite, 3".	Max. 700 cps
M14	7/8 mile south of Camsell Lake.	Pegmatite in fracture, 2'.	Max. 900 cps
M15	3/4 mile south of Camsell Lake.	Pegmatite in fracture, 1'.	Max. 1400 cps
M16	5/8 mile south of Camsell Lake.	Pegmatite in fracture, 3".	Max. 1100 cps
M17	1/2 mile south of Camsell Lake.	Pegmatite in fracture, 2".	Max. 2300 cps
M18	Approx. 1500' northwest of north end of chain of lakes, about 2 miles north of Boudin Lake.	Pegmatite in fracture, small.	Max. 700 cps
M19	Approx. 10,000' northwest of base camp.	Undefined mylonite, 2".	Max. 750 cps
M20	Approx. 6000' east-southeast of south end of Whaleback Lake.	Pegmatite, 2".	Max. 750 cps
M21	Approx. 6000' at 060° of south end of Whaleback Lake near small lake.	Pegmatite, small.	Max. 1200 cps
M22	Approx. 6000' at 060° from south end of Whaleback Lake, near small lake, north of M21.	Pegmatite, small.	Max. 1400 cps
M23	Approx. 6000' northeast of south end of Whaleback Lake.	Pegmatite, small.	Max. 1700 cps

Showing Number	Location	Nature	Radioactivity
M24	Approx. 5200' northeast of south end of Whaleback Lake.	Pegmatite, small.	Max. 2300 cps
M25	Approx. 5200' northeast of south end of Whaleback Lake.	Pegmatite, small.	Max. 2000 cps
M26	Approx. 5500' northeast of south end of Whaleback Lake.	Pegmatite, small.	Max. 900 cps
M27	Approx. 3000' west of Boudin Lake.	Pegmatite, small.	Max. 750 cps
M28	Approx. 6500' north of north end of Boudin Lake.	Pegmatite, 2'.	Max. 750 cps
M29	Approx. 4000' north of north end of Boudin Lake.	Pegmatite, 2'.	Max. 750 cps
M30	Approx. 3500' at 060° from north end of Boudin Lake.	Pegmatite, 3".	Max. 1300 cps
M31	Approx. 2800' west of north end of Whaleback Lake.	Pegmatite, small.	Max. 700 cps
M32	Approx. 2500' east of northeast end of Camsell Lake.	Pegmatite, 2".	Max. 750 cps
M33	Approx. 1000' north of north end of Camsell Lake.	Pegmatite, 3".	Max. 1600 cps
M34	Approx. 1500' north of north end of Camsell Lake.	Pegmatite, 3".	Max. 1500 cps
M35	Approx. 2000' north of north end of Camsell Lake.	Pegmatite, 2".	Max. 2150 cps

Showing Number	Location	Nature	Radioactivity
M36	Approx. 10,000' southwest of north end of Potts Lake.	Pegmatite, 2".	Max. 600 cps
M37	Approx. 6000' at 210° from north end of Potts Lake.	Pegmatite, 2".	Max. 3500 cps
M38	Approx. 6000' at 200° from north end of Potts Lake.	Pegmatite, 2".	Max. 700 cps
M39	Approx. 5500' at 190° from north end of Potts Lake.	Pegmatite, 2".	Max. 750 cps
M40	Approx. 5000' south of north end of Potts Lake at western shoreline.	Pegmatite, small.	Max. 750 cps
M41	Approx. 1 mile east of base camp.	Pegmatite, 2".	Max. 750 cps
M42	Approx. 1 mile east of base camp, 700' southeast from M41.	Pegmatite, 2".	Max. 750 cps
M43	Approx. 7500' at 100° from base camp.	Pegmatite, 2".	Max. 700 cps
M44	Approx. 6000' at 110° from base camp.	Pegmatite, 4".	Max. 4000 cps
M45	Approx. 1-3/4 miles north-northeast of Camsell Lake.	Granite-gneiss, 2'.	Max. 700 cps
M46	Approx. 2 miles northeast of Camsell Lake.	Granite-gneiss, 2".	Max. 750 cps
M47	Approx. 1-1/2 miles northwest of Whaleback Lake, near small lake.	Pegmatite, very small.	Max. 700 cps
M48	Approx. 1 mile northwest of north end of Whaleback Lake.	Pegmatite, 2".	Max. 1450 cps

Showing Number	Location	Nature	Radioactivity
M49	Approx. 1/2 mile east of north end of Whaleback Lake.	Pegmatite, 2".	Max. 850 cps
A1	South shore of St. Agnes Lake.	Pegmatite in mesocratic hornblende biotite gneiss, 1'.	Max. 1500 cps
A2	South shore of St. Agnes Lake.	Undefined in mesocratic hornblende gneiss, 50'x20'.	Max. 500 cps
A3	Approx. 1 mile south-southwest of camp on south shore of Potts Lake.	Undefined in mesocratic quartz, feldspar, biotite gneiss, 2'.	Max. 1000 cps
A4	Approx. 1 mile at 170° from camp.	Pegmatite in mesocratic hornblende gneiss, 2'x1'.	Max. 700 cps
A5	Approx. 1 mile at 180° from camp.	Pegmatite in mesocratic hornblende gneiss, 3'x3'.	Max. 900 cps
A6	Approx. 3/4 mile west of south end of Potts Lake.	Undefined in mesocratic hornblende gneiss, 2'x1'.	Max. 700 cps
A7	Approx. 3/4 mile west of south end of Potts Lake.	Undefined in mesocratic hornblende gneiss, 2'x3'.	Max. 750 cps
A8	West shore, 1/2 mile from south end of Potts Lake.	Pegmatite, 2'x3'.	Max. 900 cps Avg. 200-300 cps
A9	Approx. 2-1/2 miles north of camp, 1000' north of small "kidney" shaped lake.	Pegmatite, undefined, small.	Max. 600 cps

Showing Number	Location	Nature	Radioactivity
A10	Approx. 2-1/2 miles at 340° from north end of western arm of Potts Lake, north of small lake.	Two spots, in garnet hornblende gneiss, 12"x8" & 4"x6".	Max. 960 cps Max. 650 cps
A11	Approx. 1 mile northwest of north end of west arm of Potts Lake.	Undefined in garnet hornblende gneiss, 6"x8".	Max. 900 cps Avg. 200 cps
A12	Approx. 6500' west of north end of west arm of Potts Lake, north of small lake.	Undefined, mylonite and quartzite contact, 1'x8".	Max. 1500 cps Avg. 150-300 cps
A13	Approx. 800' southwest of A12.	Undefined, hornblende gneiss, 4"x8".	Max. 700 cps
A14	Approx. 6500' west of north end of west arm of Potts Lake, near the north edge of small lake.	Undefined, pegmatite.	Max. 3500 cps Avg. 100-600 cps
A15	Approx. 6000' west of north end of west arm of Potts Lake, near A14 and at the edge of small lake.	Undefined, pegmatite, small, 2"x4'.	Max. 2800 cps Avg. 500 cps
A16	Approx. 8000' southeast of south end of Potts Lake.	Pegmatite lens in folded biotite gneiss, 4"x6".	Max. 750 cps Avg. 150-300 cps
A17	300' north-northeast of A16.	Pegmatite lens in folded biotite gneiss, in north-northeast direction, 100' long, width varies from 2' - 20'.	Max. 1400 cps Avg. 500 cps
A18	80' north of A17.	Pegmatite lens in folded biotite gneiss, 2'x4'.	Max. 700 cps Avg. 200 cps

Showing Number	Location	Nature	Radioactivity
A19	8000' southeast of south end of Potts Lake, 150' northwest of A17.	Pegmatite lens in folded biotite gneiss, 15'x8'.	Max. 1200 cps Avg. 500 cps
A20	50' northwest of A17.	Pegmatite lens, 3'x2'.	Max. 2900 cps Avg. 500 cps
A21	Approx. 8000' southeast of south end of Potts Lake, 50' south of A20.	Pegmatite lens in biotite gneiss.	Max. 1000 cps Avg. 500 cps
A22	40' northeast of A17.	Pegmatite lens in folded biotite gneiss.	Max. 1500 cps Avg. 700 cps
A23	Approx. 7500' southeast of south end of Potts Lake.	Folded biotite gneiss.	Max. 1200 cps
A24	300' north of A23.	Pegmatite lens in folded biotite gneiss.	Max. 600 cps Avg. 150 cps
A25	260' east of A24.	Quartzite	Max. 1000 cps Avg. 150-500 cps
A26	Approx. 7500' southeast of south end of Potts Lake, 300' east of A25.	Folded biotite gneiss	Max. 1250 cps Avg. 250 cps
A27	Approx. 5000' west of Whaleback Lake.	Folded biotite gneiss.	Max. 800 cps Avg. 100-150 cps
A28	Approx. 1500' west of western shore of middle of Whaleback Lake.	Quartz-feldspar lens in biotite schist, very small.	Max. 750 cps Avg. 150 cps
A29	Approx. 1500' west of western shore of middle of Whaleback Lake.	Schistose biotite gneiss with pegmatite, small.	Max. 500 cps

Showing Number	Location	Nature	Radioactivity
A30	Approx. 3500' southeast of south end of Whaleback Lake.	Quartz-feldspar lens in hornblende gneiss, very small.	Max. 650 cps
A31	Approx. 4000' east of south end of Whaleback Lake.	Pegmatite, very small.	Max. 1250 cps
A32	Approx. 1000' north of south end of west arm of Potts Lake.	Pegmatite lens in quartzite, very small.	Max. 1100 cps Avg. 100-150 cps
A33	Approx. 700' northwest of south end of west arm of Potts Lake.	Feldspar porphyry, 16'x18'.	Max. 600 cps Avg. 300 cps
A34	Approx. 1000' northwest of south end of west arm of Potts Lake.	Pegmatite lens in quartzite, 8'x10'.	Max. 1400 cps Avg. 150-500 cps
A35	Approx. 400' west of north end of west arm of Potts Lake.	Pegmatite lens in hornblende gneiss, 8'x3'.	Max. 2000 cps
A36	Approx. 2500' west-southwest of north end of west arm of Potts Lake.	Pegmatite lens in mylonite, 3'x6'.	Max. 1800 cps
A37	Approx. 1100' northwest of north end of west arm of Potts Lake.	Several pegmatite lenses in mylonite, 2 lenses 20' apart, each 4'x3'.	Max. 1000 cps Avg. 150-500 cps
A38	Approx. 4000' northwest of base camp on Potts Lake.	Pegmatite lens in hornblende gneiss, 6"x4'.	Max. 600 cps
A39	Approx. 2 miles north-northeast of base camp on east shore of west arm of Potts Lake.	Pegmatite lens in biotite gneiss, 10'x2'.	Max. 650 cps Avg. 400-500 cps
A40	500' northeast of A39.	Pegmatite lens in biotite gneiss, 6'x4'.	Max. 1400 cps Avg. 400-500 cps

Showing Number	Location	Nature	Radioactivity
A41	120' north of A40.	Pegmatite lens in biotite gneiss, 6'x2'.	Max. 900 cps
A42	Approx. 4000' south-southeast of north end of Potts Lake on the east shore.	Pegmatite lens, 1'x8".	Max. 600 cps Avg. 100-150 cps
A43	Approx. 4000' southwest of south end of south arm of Potts Lake.	Pegmatite lens in quartzite, 6"x8".	Max. 500 cps Avg. 100-150 cps
A44	Approx. 1-1/2 miles southwest of south end of south arm of Potts Lake.	Pegmatite lens in quartzite, 1'x6".	Max. 550 cps
A45	Approx. 2500' at 260° from south end of south arm of Potts Lake.	Pegmatite lens in quartzite, 14"x10".	Max. 750 cps
01	Approx. 3/4 mile north of west end of St. Agnes Lake.	Pegmatite in mesocratic hornblende gneiss, 5'x30'.	Max. 2000 cps Avg. 500-1000 cps
02	Approx. 1000' south of 01.	Pegmatite lens in mesocratic biotite feldspar gneiss, 1'x5'.	Max. 1400 cps Avg. 500 cps
03	Approx. 1/2 mile west of Whaleback Lake.	Pegmatite veins and lenses in amphibolite or along contact of amphibolite with mesocratic biotite gneiss, 5'x20'.	Max. 800 cps Avg. 200-400 cps
04	One-half mile east of south end of east arm of Charles Lake.	Pegmatite lenses and stringers along contact of biotite granite-gneiss with quartzite, 5'x25'.	Max. 250 cps Avg. 150-200 cps
05	Approx. 1/4 mile at 025° from 04.	Pink pegmatite in granite, 10'x15'.	Max. 450 cps Avg. 250-350 cps

Showing Number	Location	Nature	Radioactivity
06	Approx. 7/8 mile west of north end of west arm of Potts Lake.	Pink pegmatite lenses, veins and stringers in mesocratic biotite hornblende gneiss, occurs over an area 2000' by 1000'.	Max. 1700 cps Avg. 300-750 cps
07	In northwest corner of Permit No. 31, approx. 1/4 mile from Charles Lake.	Pegmatite lenses in dark, fine grained mylonite, 1'x10'.	Max. 250 cps Avg. 150-200 cps
08	Approx. 1/2 mile west of south end of Potts Lake.	Pegmatite lenses in mesocratic biotite granite gneiss, small.	Max. 600 cps Avg. 200-400 cps
09	Approx. 3/4 mile at 260° from south end of Boudin Lake.	Fracture with biotite in sheared iron stained amphibolite, 2'x6'.	Max. 700 cps Avg. 500 cps
010	Approx. 1 mile northwest of Camsell Lake.	Radioactivity along edge of gossan in mesocratic hornblende gneiss, 20'x3'.	Max. 2200 cps Avg. 500-1000 cps
011	North end of small lake lying approx. 3/4 mile at 200° from north end of Potts Lake.	Pink pegmatite in mesocratic hornblende granite gneiss, 1'x2'.	Max. 850 cps Avg. 500 cps

TABLE III

FIELD PERSONNEL

Name	Position	Time Spent on Property
R. Olson	Geologist	May 23 to June 9, July 14, 1969
S. Ahuja	Senior Assistant	May 24 to June 9, 1969
G. Mathews	Prospector	May 25 to June 9, July 14, 1969
B. Aaquist	Junior Assistant	May 23 to June 9, July 14, 1969
B. Prince	Junior Assistant	May 23 to June 9, July 14, 1969
K. Griesser	Cook	May 24 to June 9, 1969

CERTIFICATION

I, C. M. TRIGG, OF [redacted], EDMONTON, ALBERTA, CERTIFY AND DECLARE THAT I AM A GRADUATE OF THE UNIVERSITY OF BRITISH COLUMBIA WITH A B.A.SC. DEGREE IN GEOLOGICAL ENGINEERING AND A GRADUATE OF MCGILL UNIVERSITY WITH A PH.D. DEGREE IN GEOLOGY. I AM REGISTERED AS A PROFESSIONAL GEOLOGIST AND A PROFESSIONAL ENGINEER WITH THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ALBERTA, AND I AM LICENSED TO PRACTISE AS A PROFESSIONAL ENGINEER WITH THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF SASKATCHEWAN.

MY EXPERIENCE INCLUDES SERVICE AS MINE GEOLOGIST, ELDORADO MINE, GREAT BEAR LAKE, N.W.T.; CHIEF MINE GEOLOGIST AND CHIEF GEOLOGIST IN CHARGE OF EXPLORATION, ELDORADO NUCLEAR LTD., BEAVERLODGE, SASKATCHEWAN; MANAGER, EXPLORATION, IRWIN ENGINEERING, EDMONTON, ALBERTA.

I HAVE NO INTEREST DIRECT OR INDIRECT IN RADEX MINERALS LTD. OR ANY OF THEIR PROPERTIES NOR DO I EXPECT TO RECEIVE ANY SUCH INTEREST.

R. A. OLSON PERFORMED THE WORK DESCRIBED IN THIS REPORT UNDER MY SUPERVISION. HIS REPORT IS BASED ON HIS PERSONAL KNOWLEDGE OF THE AREA AND UPON A COMPILATION OF PUBLISHED AND UNPUBLISHED INFORMATION.

C. M. TRIGG, PH.D., P.ENG.

110°30'
59°50'

Charles Lake

Potts Lake

Camsell Lake

Whitebeck Lake

St. Agnes Lake

6623675.7
528098.8

6623713.9
532781.9

6614434.0
532863.5

6619395.6
528168.7

110°10'
59°45'

59°40'
110°30'

110°20'

59°40'
110°10'

N

LEGEND

- OUTLINE OF MAJOR AREA OF INTEREST
- PROSPECTOR TRAVERSE; INITIALS OF PROSPECTOR AND DATE OF TRAVERSE
- RADIOACTIVE OCCURRENCE AND NUMBER
- Mo MOLYBDENITE OCCURRENCE
- Asp ARSENOPYRITE OCCURRENCE
- Gos GOSSAN OCCURRENCE

NOTE: DRAWING TAKEN FROM UNCONTROLLED AIR PHOTO MOSAIC

1969 0010

RADEX MINERALS LIMITED

RADIOACTIVE OCCURRENCES & PROSPECTOR TRAVERSES

QUARTZ MINERAL PERMIT NO. 31

POTTS LAKE, ALBERTA

SCALE 0 1/4 1/2 1 1 1/2 MILES

TRIGG, WOOLLETT & ASSOCIATES LTD.

EDMONTON, ALBERTA JULY, 1969

DWG. 9R31-4

110° 35' 00"

110° 15' 00"

59° 45' 00"

CHARLES LAKE

ASHTON LAKE

ANDREW LAKE ARM

McINNES L.

PANS LAKE

POTTS LAKE

POTTS LAKE

CAMSELL LAKE

WHALEBACK LAKE

BOUDIN LAKE

ST. AGNES LAKE

CHARLES LAKE

ALEXANDER LAKE

CORNWALL LAKE

RAD.

Mo.

Asp.

Gos.

Mo. Cu.

110° 52' 30"

110° 15' 00"

LEGEND

- BOUNDARY OF PERMIT No. 31
- AREA OF PARTICULAR INTEREST.
- DIRECTION OF FLIGHT LINES OF PROPOSED AIRBORNE RADIOMETRIC SURVEY
- RAD. RADIOACTIVE OCCURRENCE
- X MINERAL OCCURRENCE
- Mo. MOLYBDENITE OCCURRENCE
- Cu. COPPER OCCURRENCE
- Asp. ARSENOPYRITE OCCURRENCE
- Gos. GOSSAN OCCURRENCE

19690010

RADEX MINERALS LIMITED

PROPOSED EXPLORATION — 1969

QUARTZ MINERAL PERMIT No. 31

LAKE ATHABASCA AREA, ALBERTA

SCALE 0 1/4 1/2 MILES

TRIGG, WOOLLETT & ASSOCIATES LIMITED

EDMONTON, ALBERTA JANUARY, 1969

Note : THIS DRAWING IS AN OVERLAY OF MAPS 65-6E & 65-6F, "GEOLOGY OF THE CHARLES LAKE SOUTH AND POTTS LAKE DISTRICT" GODFREY, J.D. (1966).

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