

MAR 19760012: WHALEBACK LAKE

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REPORT ON THE
1976
INVESTIGATION
OF
PERMIT #140543
WHALEBACK LAKE AREA
ALBERTA

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INTRODUCTION

During the summer field season of 1976, portions of Alberta Government permit #140543 were examined for possible uranium mineralization by a two man field crew. The area is part of the Western Canadian Shield and is covered by published Research Council of Alberta maps of scale 2" = 1 mile.

LOCATION AND ACCESS

Whaleback Lake is located 432 miles NNE of Edmonton, Alberta and 56 miles east of Fort Smith. The permit area is intersected by latitude 59° 41' and longitude 110° 18'. The physiography is typical of the Canadian Shield and is characterized by low relief with elevations ranging between 1000 and 1250 feet above sea level.

Access is by scheduled air service to Fort Smith and by float and ski aircraft to Whaleback Lake.

GEOLOGY

The permit area is underlain by metamorphic and igneous rocks of Precambrian age. Age determinations in northeastern Alberta have yielded dates ranging from 1.7 to 2.3 billion years (Godfrey and Baadsgaard, 1962; Baadsgaard et al., 1964).

The dominant feature of the area is the prevailing northerly trend and steep attitude of all major geological features.

The large infold of quartzite and schist on the east shore of Whaleback Lake is considered a very good target for several reasons. The belt lies within an area of detailed mapping and measures approximately $3\frac{1}{2}$ by $\frac{1}{2}$ miles in extent. The detailed geology is described in Godfrey's R.C.A. preliminary report 65-6. The north end of the quartzite - schist zone has been mylonitized and it is within this deformed area that most radiometric anomalies were found.

GEOLOGY Continued

At the south end of Whaleback Lake a unit mapped as Microsyenite is well exposed. Although not mapped by Godfrey, this unit also occurs in small patches along the east shore of Whaleback Lake and it was found that this rock type portrayed higher gross count backgrounds (2-3 times). These units as well as the quartzite-schist belt are the important targets for uranium exploration in this area.

RADIOMETRIC SURVEY

The radiometric survey consisted of ground radiometric sampling of the area immediately east of Whaleback Lake on a grid of 500' line spacing and 100' sample spacing.

Instrumentation consisted of a SPP2 scintillometer and an Exploranium Disa 300 gamma ray spectrometer. Systematic sampling giving total radiation, K, U, Th radiation was done with the spectrometer. Results are shown in Table 1 and 2.

Rock sampling was sporadic and only areas of high radioactivity were sampled. These areas are shown on Table 3 and the locations are noted on the accompanying overlays.

Results of assays from these sampled areas are shown in Appendix A. These results range from .001 to $.645\% \text{U}_3\text{O}_8$.

CONCLUSIONS

Work on the Alberta Government permit #140543 during the 1976 season has disclosed previously unknown uranium occurrences.

It is tentatively suggested that the quartzite-schist belt may be the host for uranium mineralization. Beneficiation of uranium is best in this rock type because two mechanisms may have been important in concentration of uranium: Firstly by original sedimentary processes and secondly by remobilization within this unit during metamorphism.

The microsyenite is also important in that it may contain low uranium concentrations but in great volumes.

RECOMMENDATIONS

The following work is now necessary to further evaluate the permit area:

- 1) Cut and chain lines at 200' intervals, to use as control in carrying out geological mapping and scintillometer surveying.
- 2) Trench and strip any anomalous area.
- 3) Carry out further prospecting of the remainder of the permit area.

COSTS

The expenditures from this program are not final because more assays and technical laboratory work has not yet been finalized. Therefore, an approximate cost is given and includes the following: Wages, transportation, equipment rental, camp supplies and food for a two man field crew. The approximate cost is \$6,000.00.

REFERENCES

Baadsgaard, H., Cumming, G.L., Folinsbee, R.E., and Godfrey, J.D. (1964):
Limitations of Radiometric Dating; Roy. Soc. Can. Spec. Publ. No. 8, p. 22-38

Godfrey, J.D. and Baadsgaard, H. (1962): Structural Pattern of the Precambrian
Shield in Northeastern Alberta and mica age dates from Andrew Lake district;
Roy. Soc. Can. Spec. Publ. 1V, p. 30-39.

Godfrey, J.D. (1966): Geology of the Bayonet, Ashton, Potts and Charles Lakes
District, Alberta; R.C.A. preliminary report 65-6.

Sample
Number

LINE NUMBER

	1N	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
000°	NT	55	42	103	99	176	98	194	NT	182	NT	216	140	289	155	352	477
100°	NT	47	106	65	103	70	174	230	NT	164	NT	144	138	144	170	144	109
200°	NT	116	81	92	103	113	154	189	219	287	NT	252	91	236	255	101	129
300°	NT	142	74	175	222	164	195	195	177	156	NT	184	190	182	204	175	110
400°	NT	168	118	144	99	122	80	242	187	145	116	255	107	162	228	NT	189
500°	NT	157	124	91	93	96	129	254	208	150	102	56	183	196	189	104	134
600°	143	107	126	166	151	172	137	299	184	240	61	169	262	137	229	139	143
700°	87	166	193	190	149	124	101	233	195	148	69	182	122	209	242	32	125
800°	100	158	243	75	97	175	160	139	124	207	78	130	173	224	164	34	31
900°	87	141	228	170	134	160	111	184	163	302	101	102	186	189	381	33	30
1000°	162	215	162	175	174	127	149	230	133	220	122	187	135	264	399	179	34
1100°	142	188	137	180	154	144	165	187	199	134	241	563	225	276	208	43	76
1200°	103	152	106	130	127	137	100	182	197	146	260	142	122	219	238	197	132
1300°	58	69	211	199	159	183	151	151	252	206	127	164	57	174	283	34	107
1400°	120	229	141	197	181	166	122	158	269	173	153	324	118	164	228	55	114
1500°	241	184	141	180	130	82	178	262	293	263	173	145	90	178	237	100	129
1600°	291	101	187	131	157	119	154	217	141	218	453	244	169	226	198	NT	NT
1700°	180	200	120	55	185	82	169	254	229	111	188	178	104	49	214	NT	NT

TABLE #1

LINE NUMBER

	1N	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
1800'	107	1300	206	146	145	147	107	125	304	79	230	106	121	55	182	NT	NT
1900'	151	223	179	193	147	101	211	210	283	93	166	119	140	127	192	NT	NT
2000'	169	286	173	149	179	123	131	231	278	133	72	111	184	76	215	NT	NT
2100'	101	221	205	197	142	154	167	255	180	118	112	101	65	100	183	NT	NT
2200'	124	117	180	61	141	44	122	110	167	221	192	96	99	172	97	NT	NT
2300'	187	187	123	65	163	43	184	154	183	204	213	104	84	63	164	NT	NT
2400'	1044	81	124	2063	141	83	78	333	254	122	167	90	107	208	147	NT	NT
2500'	174	134	125	206	108	185	177	299	212	217	196	102	127	163	92	NT	NT
2600'	121	293	184	187	168	168	247	317	247	117	237	99	149	153	142	NT	NT
2700'	87	191	134	216	190	201	310	323	147	193	130	148	124	166	213	NT	NT
2800'	267	192	114	254	197	196	139	335	147	189	130	123	117	184	197	NT	NT
2900'	NT	NT	99	273	129	180	236	179	253	115	181	98	130	134	114	NT	NT
3000'	NT	NT	109	134	189	196	159	443	350	231	129	179	103	179	170	NT	NT

TABLE #2

NT - sample not taken

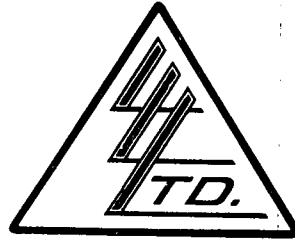
Numerical values - total counts per second

Sample
Number

TABLE #3

<u>Sample Number</u>	<u>Total</u>	<u>Counts per Second</u>		
		<u>K</u>	<u>U</u>	<u>Th</u>
7	3767	137	102	28
8	2063	74	58	11
11	961	37	26	10
12	1736	61	54	9
13	3405	*	*	*
14	2305	111	57	16
15	5149	144	82	5
16	3329	*	*	*
17	2023	*	*	*
20	1798	64	38	14
23	10981	*	*	*
24	14053	*	*	*
26	1300	*	*	*
27	1305	*	*	*
28	1203	*	*	*
29	5172	126	60	3
31	1807	*	*	*
32	1497	*	*	*
33	1215	*	*	*
35 (area 3'x30' over 5000 cps)	6505	222	168	39
	8250	377	250	61
	9104	361	249	58
37	5007	167	107	30
38	12603	454	308	62
40	2699	104	79	20
41	10899	523	356	68
Chip	18031	905	691	137

To PROBE EXPLORATION LTD.,
#2, 215A-10th St. N.W.,
Calgary, Alta.



File No. 11465
Date June 1, 1976
Samples Chips

ATTN: Bob Dales

Certificate of
ASSAY OF
LORING LABORATORIES LTD.

SAMPLE No.	% U308
# 7	.005
# 12	.002
# 15	.007
# 16	.002
# 23-24	.013
# 29	.645
# 35	.001
# 37	.078
# 38	.115
# 40	.005
# 41	.003

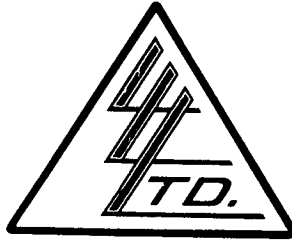
I *Hereby Certify* THAT THE ABOVE RESULTS ARE THOSE
ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
Pulps Retained one month
unless specific arrangements
made in advance.



Licensed Assayer of British Columbia

To: PROBE EXPLORATION LTD.,
#2, 215A-10th St. N.W.,
Calgary, Alta.



File No. 11425
Date May 27, 1976
Samples Chip

ATTN: Bob Dales

Certificate of
ASSAY OF
LORING LABORATORIES LTD.

SAMPLE No.	% U308
Chip Sample	.025

I *Hereby Certify* THAT THE ABOVE RESULTS ARE THOSE
ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
Pulps Retained one month
unless specific arrangements
made in advance.



Licensed Assayer of British Columbia

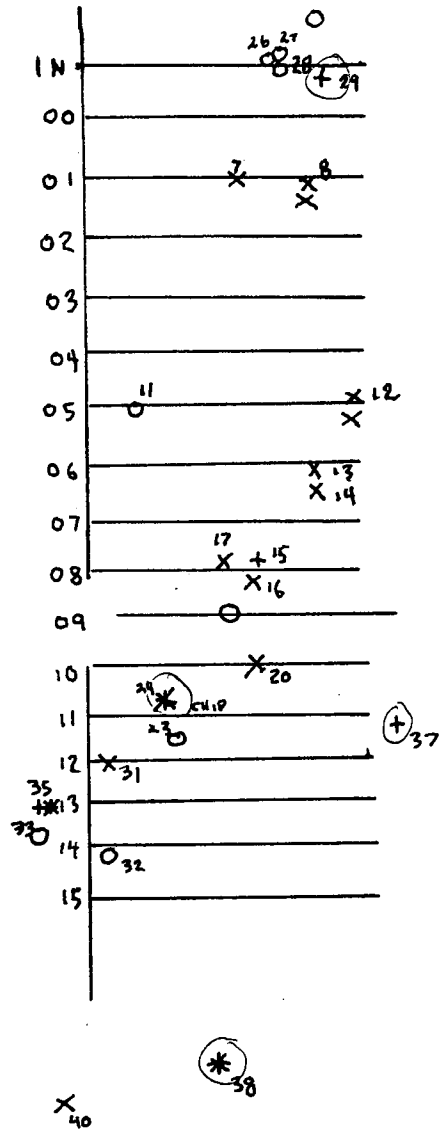
RADIOMETRIC SURVEY

LEGEND

- O 5X (900 - 1710) CPS
- X 10X (1711 - 4225) CPS
- + 25X (4226 - 8550) CPS
- * 50X (8551 -) CPS

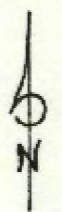
171 CPS. = BACKGROUND
 21 SAMPLE NUMBER

3000 feet



510299

GEOLOGY MAP



LEGEND

-  MICROSCHISTE.
-  QUARTZITE - SCHIST.
-  BIOTITE - SCHIST.
-  BIOTITE - granite - gneiss
-  HORNBLENDE - granite - gneiss
-  assumed contacts
-  faults.
-  FOLIATION
-  SHERRING
-  SWAMP

After GODFREY, J.D. RCA 65-6
with modifications

3000 feet

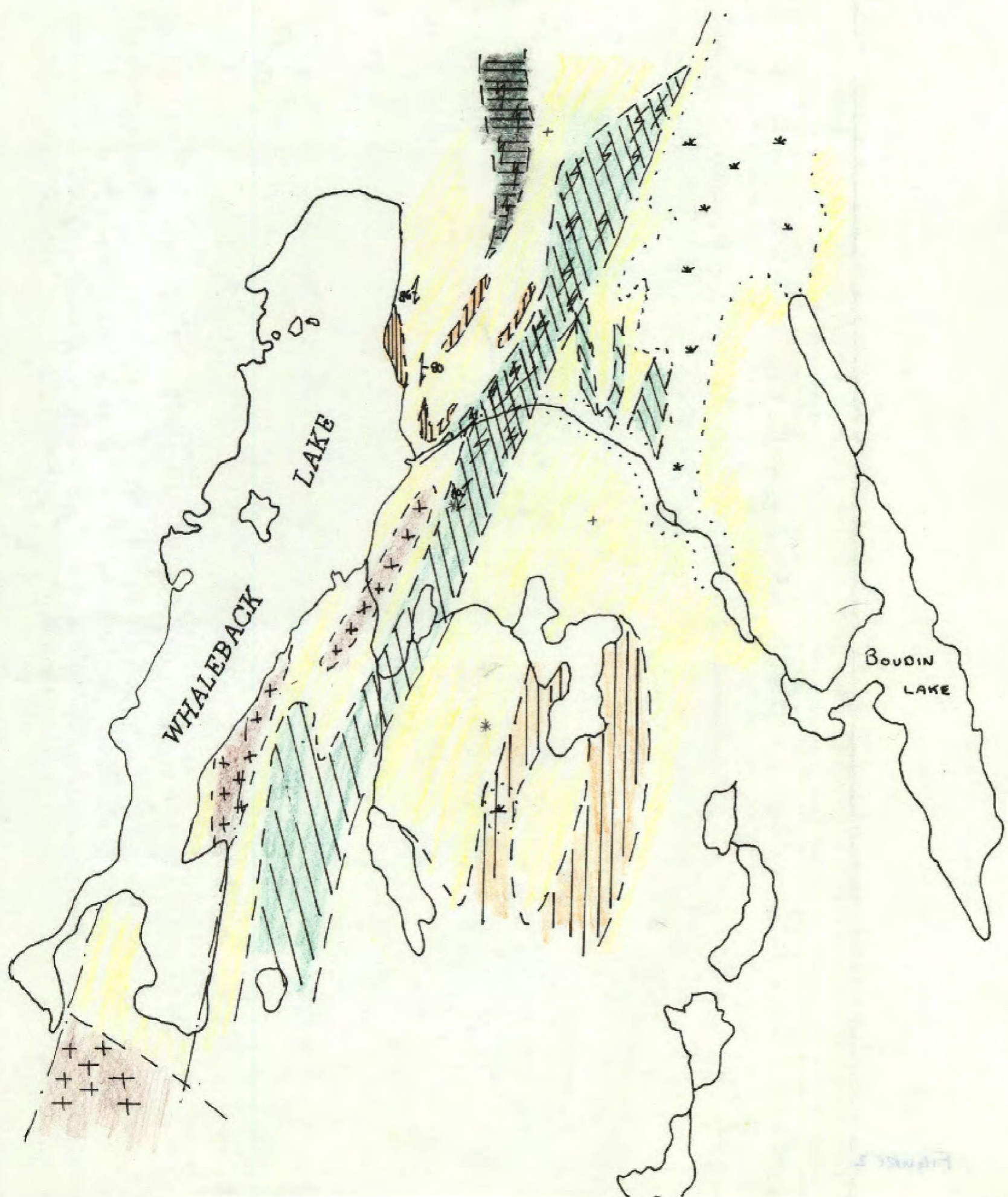
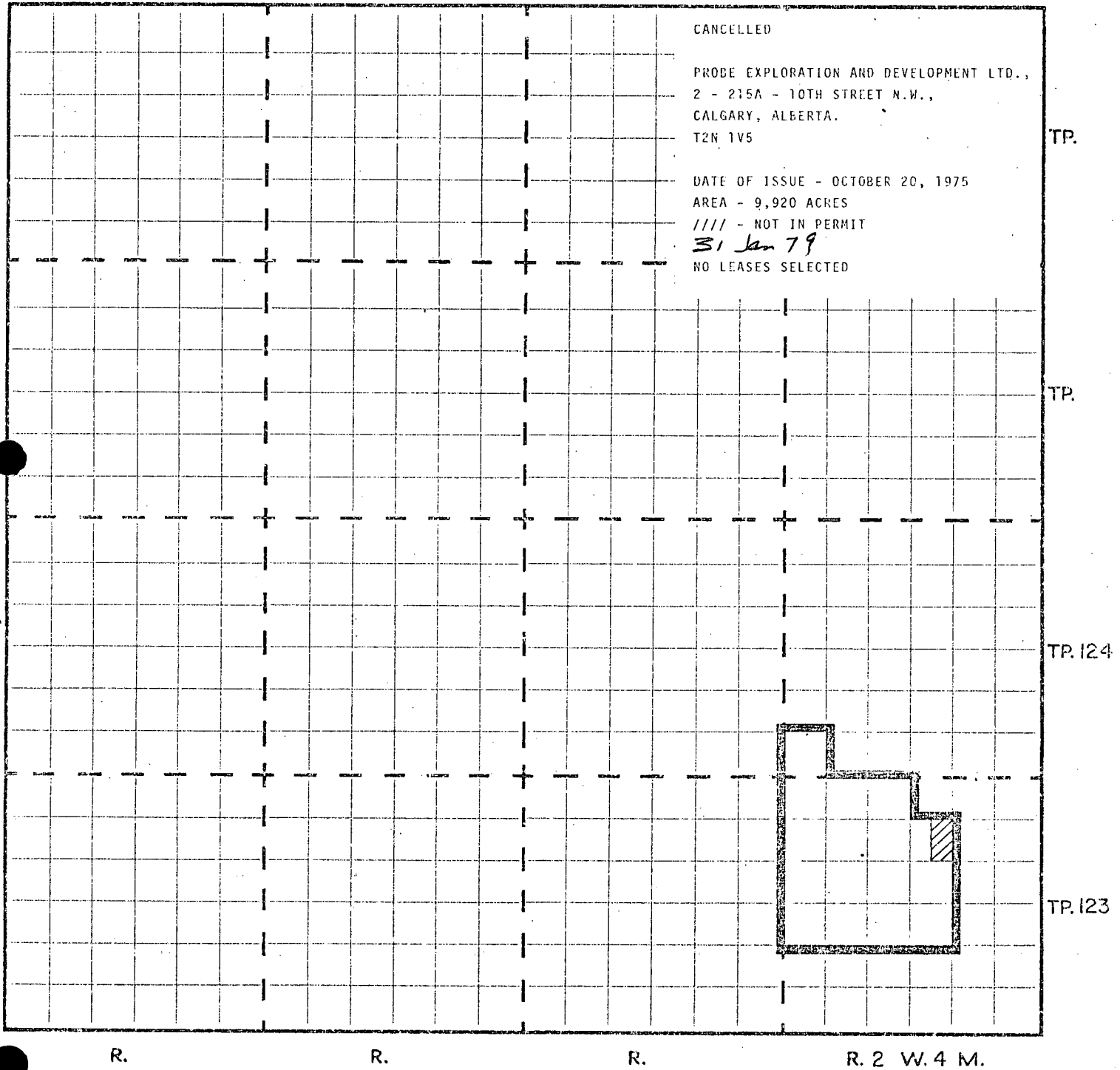
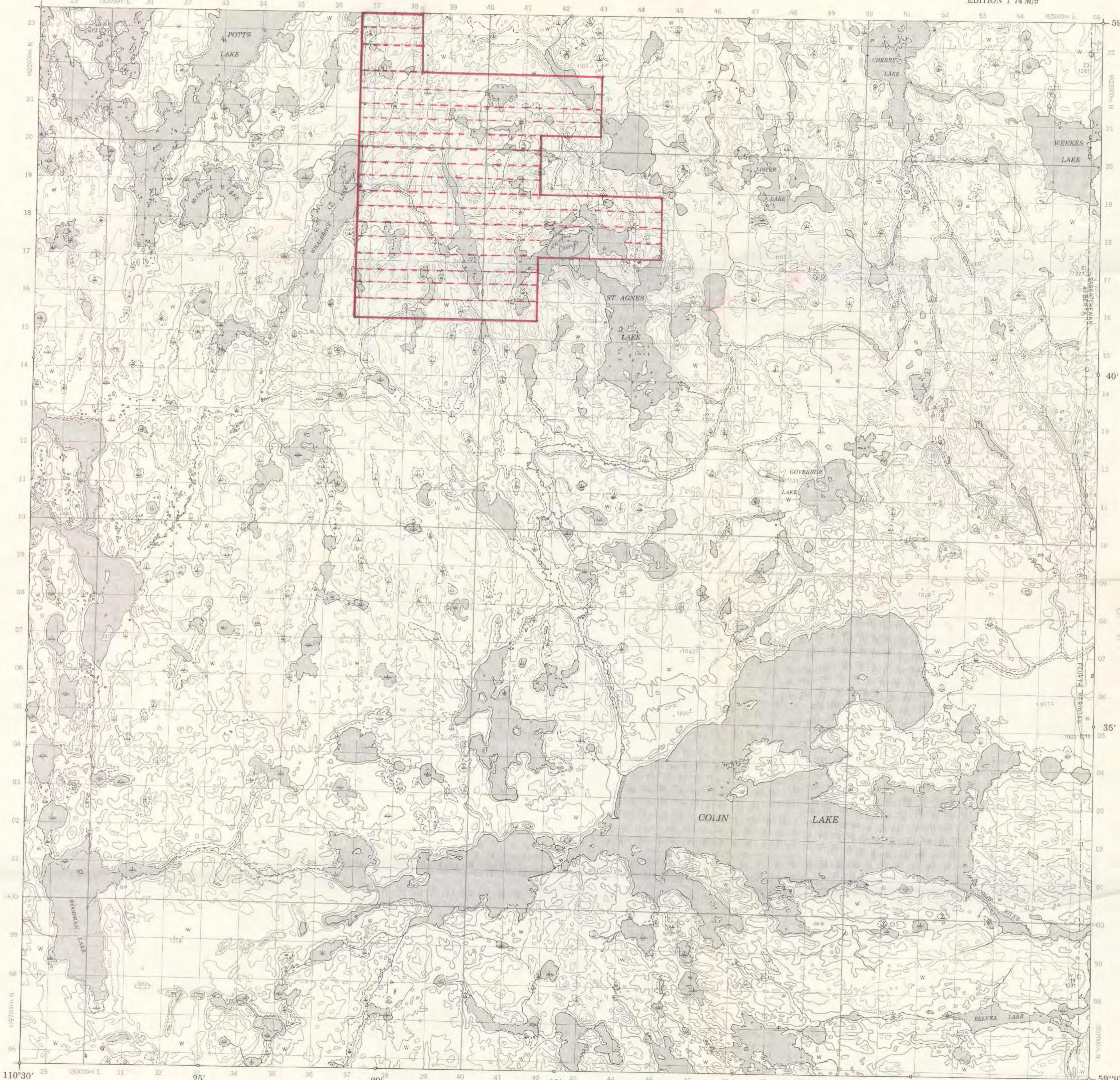


Figure 2

19760012

QUARTZ MINERAL EXPLORTION PERMIT NO. 248





ROADS AND RELATED FEATURES

- ROAD SURFACE ALL WEATHER
- GRAVEL
- DIRT TRACK, WETTER ROAD
- DIRT ROAD UNDER CONSTRUCTION
- TRAIL, DIRT LANE, PORTAGE
- RAILWAY, BOXCAR, STATION, STOP
- BRIDGE
- SEAPLANE BASE, ANCHORAGE

LANDMARK FEATURES

- HOUSE, BARN
- CHURCH, CH-100L
- POST OFFICE
- HISTORICAL SITE
- TOMB, FIRE, DUMPS
- WELL, CUL-DE-SAC
- TANK, DR., BATHROOM, WATER
- TELEPHONE LINE
- POWER TRANSMISSION LINE
- MINES
- CUTTING, EMBARCAMENT
- GRAVEL PIT

BOUNDARIES AND SURVEY CONTROL

- INTERNATIONAL, NATIONAL
- BOUNDARY MONUMENT
- COUNTY, DISTRICT
- TOWNSHIP, PARISH - SURVEYED
- UNDEVELOPED
- TOWNSHIP, U.S. - SURVEYED UNDEVELOPED
- SECTION CORNERS
- MUNICIPALITY
- WETLAND RESERVE, PARK, FIC
- HORIZONTAL SURVEY POINT
- TRANCH MARK
- SPOT ELEVATION, ELEVATION APPROXIMATE

DRAINAGE AND RELATED FEATURES

- STREAM AND CHANNEL, INTERMITTENT
- EMFICITON, ISLAND
- LAKE, INTERMITTENT
- WETLAND
- MAKED LAND
- MARSH, SWAMP, WOODED
- DRY RIVER BED WITH CHANNELS
- SAND, ABOVE, IN WATER
- STRUNG ROO
- TERRACE, POINTS, POLYGONS
- SHRUBS, PALLS, MARSH
- FORESHORE FLATS
- ROCK
- DAM
- WHARF
- DITCH

RELIEF FEATURES

- CONTOURS
- APPROXIMATE CONTOUR
- DEPRESSION
- ESKER
- FRISO
- SAND, SAND, DUNES
- PAI SA ROS
- WOODED AREA
- CLEARING AREA

LEGEND - LÉGENDE

ROUTES ET OUVRAGES CONNEXES

- SURFACE DUNE, TOUTES SAISONS
- GRAVEL
- CHEMIN DE TERRE, D'ÉTÉ
- OU CHEMIN EN CONSTRUCTION
- SANCTIER, PÉCAGES, PORTAGE
- AGLOMÉRATION
- QUÉMIN DE FER, VOIE D'ÉVÈNEMENT, SARE, ATRIE
- POST
- HYDROAÉROPORT, ANGLAIS

POINTS DE REPERE

- MAISON, GRANGE
- ÉGLISE, ÉCOLE
- BUREAU DE POSTE
- LIET HÔTEL
- TOURS, POU, RADIO
- PUITS, PÉTROLE, GAZ
- RESERVOIR, PÉTROLE, ESSENCE, EAU
- LIÈNE DE TÉLÉPHONE
- LIÈNE DE TRANSPORT D'ÉNERGIE
- MINES
- FRANCHISE, FRANCH
- FOSSÉ DE GRAVIER

FRONTIÈRES ET POINTS DE RÉFÉRENCES

- INTERNATIONAL, NATIONAL
- BORNES, TROUSÈRE
- COMTE, DISTRICT
- CANTON, PAROISSE, APPROX
- MUNICIPALITÉS
- CANTON, CENS, ARRÊTÉS, NON ARRÊTÉS
- SECTION, SECTION
- MUNICIPALITE
- RESERVE INDIENNE, PARC, ETC
- REPÈRE PLANIMÉTRIQUE
- REPÈRE DE NIVELLEMENT
- POINT COTE, ÉLEVATION APPROXIMATIVE

DRAINAGE ET OUVRAGES CONNEXES

- COURS D'EAU, RIVE, IMPRÉVU
- SÉDUCTION DU COURANT
- LAC, LAC INTERMITTENT
- TERRAIN INONDÉ
- MARSH, MARÉCHAGE, BOISÉES
- LIT DE COURTS D'EAU TARD AVEC CHENAUX
- SABLE, AU DESSUS DANS L'EAU
- MARÉCHAGES EN ENFILE
- TERRAINS, ÉTANGS, SOI, POLYGONAUX
- RAPIDES, CHUTTES, RAPIDES
- BOISÉES
- ROCK
- DAM
- QUAI
- FOSSÉ

RELIEF

- COURBE DE NIVEAU
- COURBE DE NIVEAU APPROXIMATIVE
- COURBE DE CONNETTE
- ESKER
- FRISO
- SABLE, DUNES
- PALSA ROS
- RÉGION BOISÉE
- RÉGION DÉBOISÉE

COMPLIATION	PHOTOGRAPHY	RESTITUTION
A-15152 C	A-15156	8/55
154 B-55	156	7
A-15152	8/55	158
19	A-15156	8/55
07	A-15159	8/55
107	A-15160	8/55
	A-15163	8/55
		174

REVISION	REVISION

74 M/15	74 M/16	74 N/13
74 M/10	74 M/9	74 N/12
74 M/7	74 M/8	74 N/5

CONVERSION SCALE FOR ELEVATIONS
ÉCHELLE DE CONVERSION DES ÉLEVATIONS

Meters 0 50 100 150 200 250 300 Mètres

Feet 100 200 300 400 500 600 700 800 900 1000 Pieds

ONE THOUSAND METRE
UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 12
QUADRILLAGE DE MILLE MÈTRES
UNIVERSAL TRANSVERSE DE MERCATOR

