GM 33443

PROGRESS REPORT

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Énergie et Ressources naturelles
Québec

AGUANISH URANIUM INC.

URANIUM AGUANISH INC.

PROGRESS REPORT

[redacted]....

Dennis Fairbairn, P.Eng.,
Aguanish, Québec,

October, November, 1977.

CONTENTS

SUMMARY

Our year's work, under the direct field supervision of the writer, which has effectively covered less than 15% of our claims, has been successful in locating, and partially exposing, three ore-grade deposits, believed to be among the first, if not the first, in the Johan Beetz camp.

The most significant of these discoveries is on Doran Two, is a Cross-Structure named X-NW, and has been exposed or traced for a length of 4,000 feet on the surface. For 2,400 feet, it averages about 50 feet in width, dips vertically, has a potential depth of 1200 feet, and possible tonnage of 12,000,000 tons. The indicated mined grade is in excess of 0.5 lbs. of U_3O_8 per ton -- a value of approximately $ 20.00 per ton. The deposit is easily accessible by foot some two miles from the Pashashibou River bridge, and is less than two, easy miles from deep, salt, water.

The potential for discovery of additional, mineralized, Cross Structures, in unexplored two miles of claims to the North of X-NW is considered to be very good.

At Doran Two, East Centre, east of the Pashashibou River, and immediately West of Noranda ground, significant tonnages of ore-grade material have been found. In places, outcrop rock with grades of from six to ten pounds of U_3O_8 per ton can be observed and sampled. Diamond-drill core from three short holes assayed, chemically, 6.4 , 6.4 , and 9.6 lbs. per ton. Bulk samples, taken after blasting two of the three drill-holes, assayed 5.0 and 9.2 lbs. per ton.

Interest by "majors" in the property is real and expressed. During the summer, the Doran Two Group has passed from the stage of being an interesting prospect to the stage of having good mine-making potential.

The Doran One Group, at Baie Pontbriand, has been partly covered by Spectrometer reconnaisance and has been detailed, at short spacing, along ten miles of base-lines in the area to the East of Baie Pontbriand. The writer considers there to be good potential for the development here of good tonnages of ore-grade material, but much, closer, detail work remains to be done before a realistic assessment can be made.

Due to shortage of time, people, and funds, almost no work has been done on the Doran Three Group.

SUMMARY, .. cont'd.

Assessment work for 1977 has been completed on the Doran Two and Doran One Groups. The work programme has been completed at less cost than originally budgeted; the content is somwhat different, there having been no airborne geophysical work attempted.

There is a strong possibility of the consummation before the end of 1977 of a satisfactory deal with a "major".

A progress report on the extraction tests being performed on the bulk samples from East Centre suugests that the metallurgy of our ore, (extraction costs and recovery), looks very good.

Dennis Fairbairn, P.Eng.,
Mount Hope, Ontario,
November, 1977.

PROPERTY.

Is comprised of three groups of staked claims on which 1977 assessment work requirements have now been substantially fulfilled.

	Number of Claims	Area	Township
Doran One Group	110	Baie Pontbriand	Drucourt
Doran Two Group	200	Pashashibou R.	Drucourt & Costebelle
Doran Three Group	74	Quetachu Bay	Johan Beetz

LOCATION.

On deep salt water, along the north shore of the Gulf of St. Lawrence, about 200 miles east of Sept Iles, 15 miles west of Aguanish, and 32 miles west of Natashquan. The claims extend inland from salt water a distance of up to 5 miles. Natashquan, Aguanish, and the Doran Two Group are linked by a surprizingly well-kept dirt road.

ACCESS.

Doran One Group.

a. Helicopter Havre St. Pierre or Aguanish.
b. Float plane from Havre St. Pierre.
c. Daily scheduled Québec Air flights to Natashquan plus power boat to the claims.

Doran Two Group.

a. Helicopter from Havre St. Pierre or Aguanish.
b. Daily scheduled Québec Air flights to Natashquan-Aguanish, and car, from Aguanish to the Pashashibou River and the southern half of the Group.

Doran Three Group.

a. Helicopter from Havre St. Pierre or Aguanish.
b. Float plane to Johan Beetz or Quetachu Bay.
c. Power boat from Johan Beetz or Aguanish.

ACCESS. .... Cont'd..

General.

a. There is a weekly, three-season, Steamer service to Johan Beetz and Natashquan for vehicles and heavy equipment. At Aguanish, there is only a shallow-water harbour.

b. There exists excellent accomodation and labour at Aguanish. French only is spoken.

c. The well-travelled snowmobile route from Aguanish to Johan Beetz traverses the three claim Goups.

TOPOGRAPHY.

On the Doran One and Doran Two Groups, relief is moderate, rarely exceeding 100 feet. Maximum elevations average 225 feet above sea-level. All mineralized areas of interest are comfortably above sea and river levels. Rivers and streams occupy steep gorges, up to 80 feet deep, but, other than the Pashashibou River, are only a few feet wide and no hindrance to foot travel. A bulldozer could be very easily driven from the road to any of the mineralized areas of present interest in less than two hours. 25% of Doran Two is exposed rock.

AREA ECONOMIC GEOLOGY.

1. Previous and current work by others in both the western, Johan Beetz, area, and in the eastern, Baie Pontbriand - Pashashibou River area, has been aimed at the development of large, low-cost, open-pit operations in the relatively low-grade mineralization found in the "sill-like"/in two of the three local metasediments:
structures

a. In the "Gneissic Biotite Granites", otherwise known as the "Turgeon Lake Granites", of the Johan Beetz area, and which are described by Marcelle Houseux, of Denison - Imperial Oil, in the C.I.M. Bulletin of April, 1977.

Operating in this area are, amongst others, Denison - Imperial Oil, Northgate, Canex, Aggressive, Urangesellschaft and Texas Gulf.

b. In the "Augen Gneisses" of the Baie-Pontbriand--Pashashibou Area, on the east and west flanks and at the nose of, the large, north-plunging anticline which dominates the Area. This Area is being actively explored by, amongst others, ourselves, U.S. Steel, Urangesellschaft, Canex, and Noranda-Northgate.

2. Some operators, possibly including Northgate, Denison-Imperial Oil and Agressive, have met with some encouragement in their endeavours, but, to the writer's present knowledge, none have as yet encountered mineralization of grade and tonnage sufficient to qualify it as "ore".

3. These low-grade, "sill-like" structures, which lie conformably with, and parallel to, the old sedimentary bedding, abound on most properties in the area. The Geological Survey of Canada's Airborne Radioactivity map of 1975 delineates these. Many millions of tons of this low-grade mineralization is visible in outcrops on the Doran Two Group. It is this low-grade material which has been, and is being picked up by low-level, private, airborne geophysical surveys. Within these low-grade zones, pods of higher-grade material are not uncommon, and, sometimes, are very exciting, but they are generally of only such frequency or in such quantity that it is unlikely that material with average mined grades exceeding 0.4 lbs. of U_3O_8 per ton will be developed. "Low-grade" refers to material which averages less than 0.3 lbs. per ton. With U_3O_8 priced at $ 40.00 per pound, a grade of 0.4 lbs. per ton will probably prove to be too low to be profitably operated.

4. The accurate determination of Uranium values, and hence the initial evaluation of these large, low-grade deposits, is not easy. It is rendered difficult and costly by factors such as the uncertainty of the depth of surface leaching, the unreliability of conventional diamond drilling and core analysis for grade determinations, the expense of, and the necessarily large number of deep exploration trenches prerequisite to representative sampling, and the uncertainty of results from trench sampling -- even large trench samples-- due to the wide general variation in mineral distibution throughout these masses.

5. It could develop that, somewhere in the general area, low-grade but commercial open-pit deposits will be located in these structures. However, an open-pit operation would be predicated, other than on grade, on:

   a. either thick, (30-100 feet), flat-lying structures, of a surface area and hence of sufficient tonnage, to permit extraction at the rate of from two to three million tons of ore per year for from ten to fifteen years, or,

   b. steeply-dipping mineralized zones of length, width and depth, to permit of economical open-pit mining,- i.e.- without requiring excessive removal of cap-rock or causing dilution of mined ore by barren wall-rock.

   With the data available at this date, however, the writer does not forsee the development or discovery of conformable deposits of sufficient grade and with the required geometry, either on the Doran or on other properties in the area, to support a profitable open-pit operation. This, in spite of earlier-expressed hopes to the contrary.

6. Uranium commonly occurs in association with Thorium. Both are radioactive, -- i.e.-- the daughter-products of their decomposition emit measurable Gamma radiation --. Some Uranium minerals are relatively soluble and are therfor "mobile". Thorium is not. It is therfor common and normal to expect, on surface, a zone from which the Uranium has been "leached". The radioactive Thorium remains on the surface, giving rise, frequently, to interestingly high surface radioactivity measurements which are accompanied by little, or no, Uranium content.

   The degree and depth of leaching varies very considerably, even within a few hundred feet of the same deposit, in accordance with such factors as the chemical composition of the leaching waters, the porosity of the host rock, the fracturing of the host rock, the time of exposure to leaching waters, the circulation of those waters, and, of course, the solubilty of the primary Uranium mineral. It is this which introduces the high degree of uncertainty into the evaluation of these deposits by surface assaying either of samples or by Spectrometer. The lower the grade of the deposit, the more uncertain the evaluation becomes. On Doran Two, surface sampling and chemical assaying is pointless.

In this preliminary evaluation phase of a deposit, it is simply not feasible to trench sufficiently to the unleached zones to provide an accurate evaluation, -- particularly in lower-grade deposits of irregular or non-uniform Uranium distribution.

Fortunately, and in spite of some of the uncertainty that surrounds its use, the Integrating Spectrometer does provide a reasonably accurate and useful information re Uranium content. When the instrument is properly calibrated and properly used by personnel who are experienced both with its use and with local conditions, the writer believes that it provides a greater degree of reliability in surface assaying than does sampling and assaying.

The estimation of unleached grades on the basis of surface assays can be made with reliability only after experience in the field. Repeated checks of Spectrometer assays against Chemical assays are necessary to establish confidence in the Spectrometer's indicated grades; repeated determinations with the Spectrometer of the ratios of U+Th to Th are necessary to establish the depth of leaching, and hence, in a trench, the level at which samples may be taken to determine mine-grades.

Thus, when the writer reports surface Spectrometer assays, they are believed to be relatively reliable measurements of surface Uranium values. When he reports "mine grades", they are those which, in his judgement, might be expected in the unleached zone during actual mining operations.

When reference is made to measurements of, say, 20 times background, it is to the multiple of the U+Th background count which the actual U+Th count is. (The background count is the non-terrestrial count).

As a very general rule, 20 times background would indicate 0.6 lbs. of Uranium per ton; 14 times background, 0.4 lbs. per ton. The chart on map no. 8 provides a more detailed relationship.

The purpose of the forgoing detail was to explain the total absence in our records of chemical assays of surface samples, as well as the paucity of chemical assays from trenches. This absence or paucity is looked upon with suspicion by the unenlightened.

DEVELOPMENT -- PAST.
URANIUM AGUANISH INC.

1. The subject areas have been geologically mapped by Cooper, (1957, Québec Department of Mines), and Blais, (1956, Québec Department of Mines).

2. An airborne radioactivity survey by the Geological Survey of Canada covered the area in 1947 . The results are recorded on Open File Map 271 of the G.S.C.. Flight lines were E-W, and at 5 km. spacing. This survey recorded definite Uranium anomolies on each of the three Doran Groups.

3. All three Groups were previously staked, but the only known physical ground work was minor trenching on the Doran Three Group.

   Our trenching and drilling on Doran Two was the first known ground-breaking, and our detailed Spectrometer surveying was the first ground work, in the anomolous area of that Group.

DEVELOPMENT -- CURRENT
URANIUM AGUANISH INC.

DORAN TWO GROUP

1. We were successful, during this year's field work, in discovering the existence of mineralized tension fractures. These fractures strike roughly at right angles both to the axis of the northerly-plunging anticline and to the strike of the meta-sediments.

2. These "cross structures", as the writer has termed them, are long, strong, and persistent, and are probably vertical in dip. They have a depth potential commensurate with their length and strength. They are narrower than the conformable sill-like structures, but appear to carry significantly higher and more consistent values.

3. Very limited exploration work has disclosed two such "cross structures". One is the "discovery" structure which lies about one-half mile West of

the Pahashibou River, has been named the Y-Z Zone; the other, which lies about one-half mile Northwest of Y-Z, has been named the X-NW Zone.

4. Spectrometer assaying, supported only by minimal sampling and chemical assaying, by the observable length and width of the mineralization, and by the possible depth, combine to suggest that we have discovered ore-grade mineralization.

5. Y-Z Zone ... Cross Structure.

The structure has been exposed for a length of about 1300 feet, is "open" at both ends, is from 20 to 30 feet wide, dips vertically, and strikes about S-80-E . Spectrometer assaying indicates grades, on surface, of about 0.3 lbs. per ton; shallow trenching and both Chemical and Sp ectrometer assaying, indicate mine-grades of over 0.5 lbs. per ton.

A representative sample,from the most westerly of the three trenches which were cut in the Zone,assayed, chemically, 0.54 lbs. per ton. A selected sample from the most Easterly of the three trenches assayed, chemically, 2.00 lbs. per ton. Assays were by Technical Service Labs. of Toronto; sampling was by Fairbairn.

Tonnage indications are about 300,000 tons per 100 feet of depth. At a depth equal to about one-half the exposed length, the possible tonnage would be about 2,000,000, and possible unit gross value would be about $ 20.00 per ton.

Because of its relatively narrow width, this "Discovery Zone" calls for underground mining. Alone, it would therefor be of little commercial interest, but, as a small contributor of mill feed to a nearby existing mill fed by several other such deposits, it would be of definite commercial interest.

The details of this Zone are covered in Map No. 4.

6. X-NW Zone ... Cross Structure.

This structure has been exposed intermittently, and otherwise traced, for a length of 4,000 ft., and is "open" at both ends. However, the Western 1600 ft., which lie largely in the older Banded Granitic Gneiss, varies in width from only 4 ft. where it is seen last on the East bank of the Grand Gaine River, to 10 ft.

some 900 ft. West of the discovery outcrop. (see the Location Map of the Principal Mineralized Areas).

The indicated surface grade along this narrow, Western 1600 ft., is 0.4 lbs. per ton.

The discovery outcrop has been traced and partially exposed for a length of 2,400 feet to the East. (See Map No. 8). The average width is estimated at 50 feet, the dip appears to be vertical, the mineralization and texture remarkably consistent, and the average indicated surface grade, by Spectrometer, is more than 0.4 lbs. per ton. It is very confidently expected that mined grade would exceed 0.5 lbs. per ton.

Underground mining would obviously be called for, but, with this geometry, 0.5 lbs. per ton could be profitably mined.

If further developments confirm our basic forgoing assumptions, and, if two additional zones of similar grade, tonnage, and geometry were located, a profitable mine could result.

In the unexplored two miles to the north of X-NW, the aerial photographs clearly show many cross-structures. Some may be recent lineaments of a type common in the explored southern section of Doran Two, but the likelihood of discovery there of two additional zones similar to X-NW is considered to be very good.

7. E Zone Centre.

About one mile north of the Pashashibou River bridge, and one-half mile East of it, the "E" Zone of good mineralization has been discovered. The structural geology is not yet clear, but appears to the writer to be composed of:

HILLTOP OUTCROP

a. A "Hilltop Outcrop", conformable with, and parallel to, the Augen Gneiss,(and to the Amphibolite). The outcrop has a true thickness of about 40 ft., dips about 30 degrees to the SE, and strikes about N-20-W . Its continuity along its strike to the North and to the South is uncertain. It appears to dip under the Gneiss, downhill, to the SE, and may continue down-dip to sufficient depth to generate a significant tonnage. Given tonnage, it is ore-grade.

Average surface grade across the exposed 110 to 140 feet of horizontal width are just under 0.4 lbs. per ton. The core from one two-foot deep drill hole, located on one of the better-grade spots on the top of the hill, ran 2.56 lbs. per ton in Chemical Assay. (See Map No.7).

The rock in this Hilltop Outcrop would mine at well over 0.5 lbs. per ton.

WEST SILL

b. In the wooded and marshy area to the west of the Hilltop Outcrop, beneath from one to two to three feet of wet"moss", a "Dyke", which appears to carry more than 1.0 lbs. per ton, has now been traced and partially exposed North and South for about 2,000 feet. In places, this "Sill", (for that is what it now appears to be), registers up to 30 times background on the Spectrometer through more than one foot of wet moss. There are significant "hot-spots" along its length which provide Spectrometer assays of over 5.0 lbs. per ton. The rock to the West of the Hilltop Zone has been exposed in several dozen places with shovel holes; it is typical, coarse-grained, granitic, ore. See Maps Nos. 7&11.

Initially, this Zone was a puzzle, but it now seems clear that it is a "Sill" of 10-12 feet true thickness, lying conformably with, and paralelling, the Augen Gneiss. Its dip appears to be 20 to 30 degrees to the SE. At one place, Amphibolite to the East overlies the the mineralized zone.

If this length, width, and apparent grade, (2,000 feet, 10-12 feet, and 1.0 lbs.), stands up under further examination, and if it it continues down dip for some distance,as it is expected to do, this bed, albeit thin, could prove to be most significant as a profitable source of mill-feed.

HOT SPOT

c. In an area about 40 feet in diameter, and which lies between the North extension of the Hilltop Outcrop and the just-described Sill to the immediate west, is an interesting "Hot Spot" which has been exposed by hand-stripping under a light moss cover. Three short diamond-drill holes were

HOT SPOT

put down in the Area, about 14 ft. apart. The cores assayed, chemically, 6.40, 6.40, and 9.60 lbs. per ton. Samples were taken by Fairbairn after blasting two of the diamond-drill holes and assayed, chemically, 5.0 and 9.2 lbs. per ton.

It is interesting to note that this small area, were it to be 40 ft. square and only 10 feet deep, would, at 7.0 lbs. per ton, hold over $ 350,000.00 worth of Uranium. See location and assays on Map No. 7 .

CROSS STRUCTURE

d. On August 27th., one of the last days of regular field work, the first cross-structure in the Eastern Zone was discovered. It was located with the Spectrometer, under light moss, about 900 ft. North of the Hilltop Outcrop. It is a relatively narrow 8 to 10 feet in width, and carries what is becoming the usual 0.4 lbs. per ton on the surface. It strikes N-10-E, which is about 30 degrees to the East of the Augen Gneiss. It may be related to tectonic activity which is quite eveident on aerial photos to the North and East of this discovery location. There may be more such structures in the unexplored vicinity. When last observed, after being followed from the discovery location towards the SW, it was striking towards the "Hot Spot", ("c", above), and was about 200 ft. NE of it. At this point, the Spectrometer surface assay was 1.2 lbs. per ton.

No work has been done on this discovery outcrop towards the open NE, nor has any work been done on its, or the "Hot Spot's" possible extension to the West of the "Sill".

See Map. No. 7 .

DORAN ONE GROUP

DEVELOPMENT -- PAST

Of the 110 claims in the Group, 55 were controlled in 1967 and 1968 by one E. Blackwood. The 55-claim Group was known " Blackwood Group 5 ".

A Scintillometer survey, which covered the southern portion of the claims only, was conducted in February and March, 1968 by H.M. Sutherland, P.Eng.. The survey disclosed, " over 100 readings of more than three times background ", and only a false pattern of mineralization. It was carried out, probably only to satisfy Assessment Work requirements, under winter conditions, in deep snow, and therefor produced little else than an outcrop survey of the higher, N-S-trending ridges in an area where mineralized zones are believed to trend E-W. The higher readings were 5 and 6 times background, and indicated Uranium mineralization, but, at the best, only the "usual Johan-Beetz" low-grade of less than 0.25 lbs. of U_3O_8 per ton.

DEVELOPMENT -- CURRENT

Our work was comprised, first, of Spectrometer reconnaisance, which covered some 75% of the 110 claims, and, second, of a semi-detailed Spectrometer Survey of part of the most encouraging area disclosed by the reconnaisance. Access to the claims was by power boat, along the Gulf, from the Pashashibou.

Using one-quarter-mile to the inch aerial photographs as a base reference, the reconnaisance proceeded with four men, the writer, two Spectrometers, and a Geiger Counter. Five areas of significant radiation were located and recorded. Each area warranted more detailed ground work which we did not perform because of shortage of time and personnel.

The semi-detailed Spectrometer Survey was conducted on a one-mile by one-quarter mile zone which was located on the immediate East of Baie Pontbriand. Base lines were at 100 foot centres, and readings along the base lines were at 50 foot centres. Over eleven miles of line were "cut" and run. Three interesting E-W-trending zones were located which were from one to two hundred feet wide, and carried scattered values of up to 2.30 lbs. U_3O_8 per ton. The most interesting zone was along the north boundary of Claim 3 of 364959; this is marked zone D-1-2 on Map No. D-1-1.

These zones fully warrant more detailed Spectrometer Surveying and Geological Mapping. Readings should be taken at 10-ft. centres, and the work followed up by trenching, sampling, and chemical assaying.