

Qeqertaa diamond deposit, West Greenland

In 2007 and 2008, Avannaa made new diamond discoveries in ultramafic lamprophyre dykes in North Eastern Disko Bay in Central West Greenland, thus defining a new diamond province in Greenland. The most promising of the diamond bearing bodies is a large lamprophyre dyke on Qeqertaa island in license 2007/52. The dyke is at a highly accessible fjord-side location some 50 km north of Ilulissat (Greenland's second largest town) and 22 km from the Pakitsoq hydropower plant. The location enjoys year round access by ship. The proximity to a workforce and power supply together with simple logistics makes this one of Greenland's most favourable location for a potential mine development.

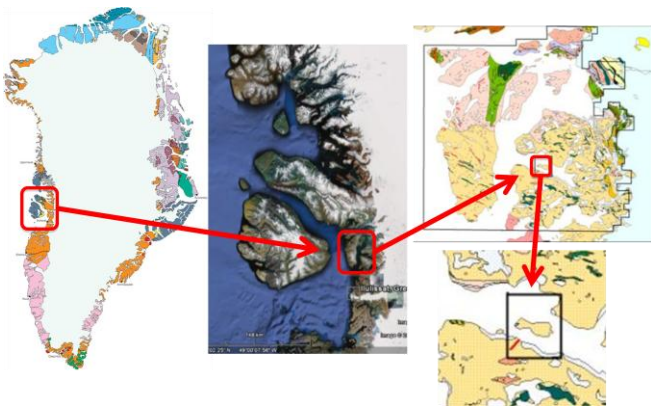


Figure 1. Location



Figure 2. Qeqertaa island viewed from west



Figure 3. Aerial photograph of Qeqertaa, Dyke 1 in pink

Ground magnetic data showed the presence of two dykes and these have been verified by sampling. Only Dyke 1 is diamondiferous.

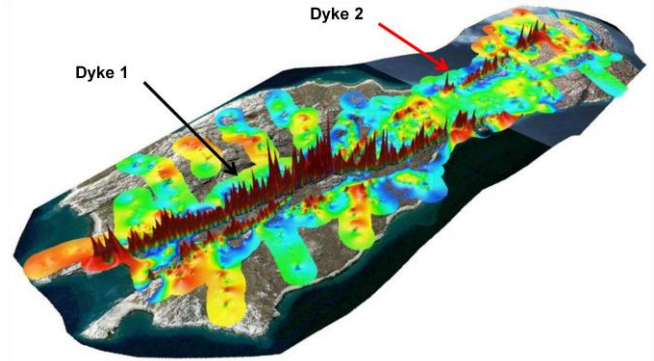


Figure 3. 2009 ground magnetic data viewed from northeast

In the 2007, 2008 and 2009 field seasons Avannaa collected a 39 kg, 443.5 kg and 10.2 tonne sample respectively from Dyke 1. The diamond results are tabulated below and an interpretation presented in the following graph.

Diamond recovery from Qeqertaa samples, 2007-2009											
year	wt kg	0.106	0.15	0.212	0.3	0.425	0.6	0.85	1.18	1.7	total
2007	39.0	44	34	11	12	1					102
2008	433.5	688	451	215	98	25	7	3			1487
2009	10,183.0						5	16	12	4	37

Table 1. Diamond recovery from Qeqertaa samples 2007-2009

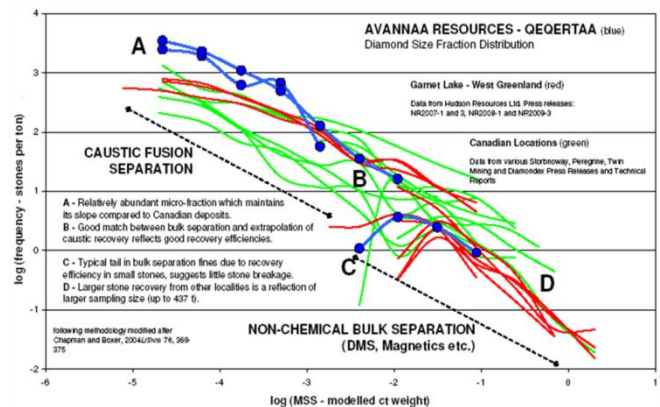
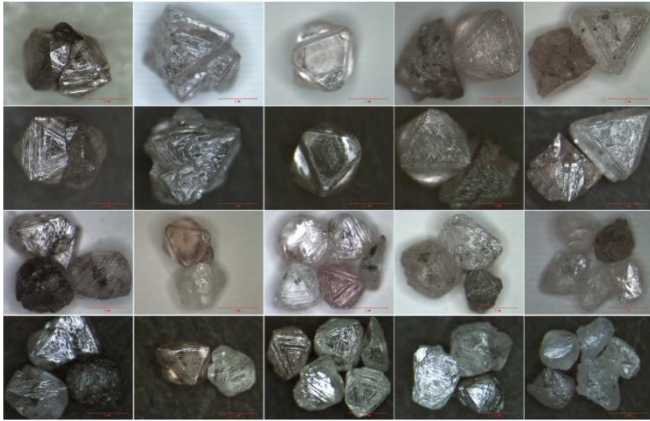


Figure 4. Diamond size fraction distribution, Qeqertaa 2007-2009

The assay indicated high stone quality; clear, translucent and excellent cut together with good stone recovery. The size distribution compares favourably with more advanced diamond projects in Canada.

Selection of diamonds recovered from 10t bulk sample from Qeqertaa dyke, August 2009



Encouraged by this success Avannaq conducted a diamond drilling programme in 2010. A total of 1130 m of core was taken from 14 drill locations along the strike of the Qeqertaa dyke. The dyke intersections collected by drilling were sent to SGS in Canada for analysis by caustic fusion. In addition to the core data a 62 tonne sample was collected during 2010. 12 tonnes will be stored for future analysis and 50 tonnes is currently undergoing diamond assay.

The Qeqertaa dyke is sub-vertical and drill intersections indicate an ore body thickness ranging from 1-20 m with an average of 5 m. The potential tonnage is estimated to be in the range 10-20 million tonnes and the target grade is 1 carat per tonne.

The host rock contains a high proportion of magnetite (10-20 wt%) and as a consequence conventional dense media separation techniques have proved ineffective. New procedures have been developed to process the rock; these are initial separation using high voltage current performed by SelFrag in Switzerland followed by magnetic separation and dense media separation conducted by GTK in Finland. A 100 kg test run was successfully completed in Q4 2010 and the main processing of 50 tonnes is underway. Final results are anticipated by March 2010. The possible application of magnetic separation to this rock type makes promises for an inexpensive processing line in any future mining operation.



Figure 4. Dunite nodules in the core of Dyke 1



Figure 5. Bulk sampling

In the advent of a positive diamond size distribution and quality from the 50 ton bulk sample, a pilot processing plant will be constructed on a barge to process in the order of 1000 ton lamprophyre in 2012.

For further Information

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