

Geological map over the NE Disko Bugt (GEUS, 1995), showing the Egi-Qingaasaq-Ataa greenstone belt; the island Qeqertaa and areas covered by aero magnetic geophysical surveys in 2009 and 2010.

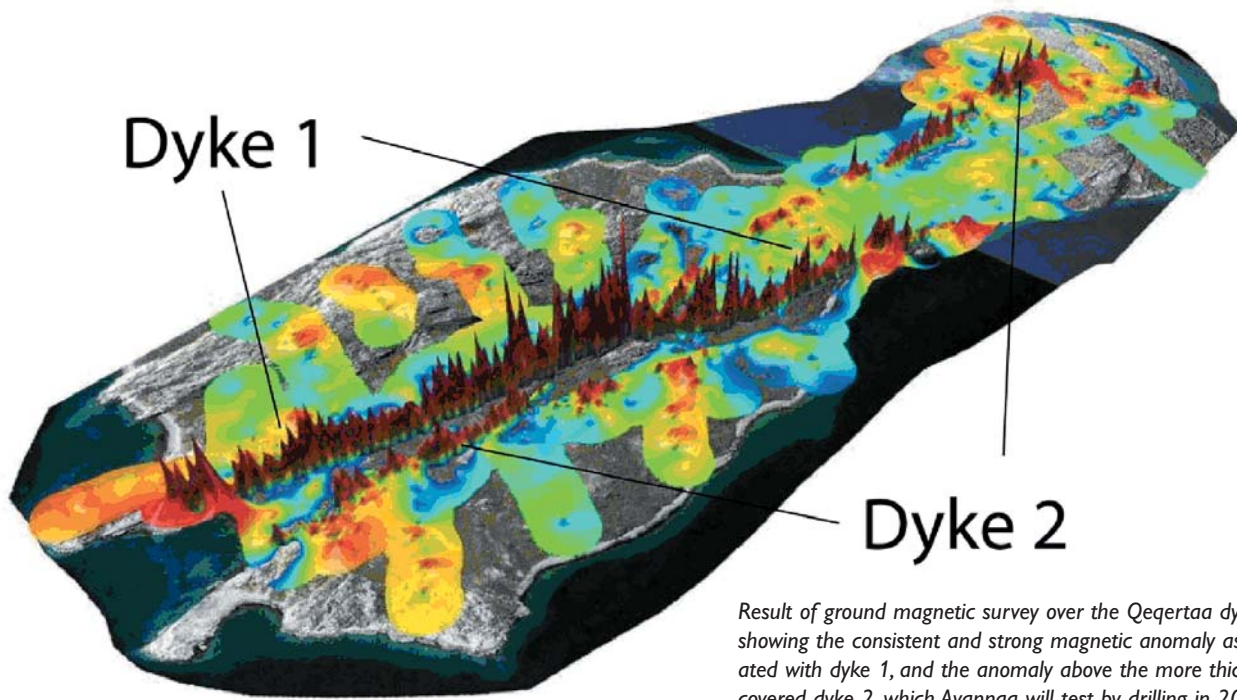
Avanna Resources advances gold and diamond projects – and initiates new base metal activities

Gold and diamond projects advancing in West Greenland

Avanna Resources reported 22 February 2010 that its exploration programmes since 2009 are expanding at Disko Bugt with a focus on gold mineralisations in the Archaean Ataa greenstone belt. The greenstone belt, which consists of an arcuate tract of mafic and ultramafic pillow lavas with subordinate metasediments and sills was intruded by the Ataa tonalite, and subsequently cut by a series of low-angle thrusts and suites of lamprophyre dykes. The Ataa greenstone belt displays all the characteristics of

classic gold camps such as at Abitibi, Canada and Kambalda, Australia.

During 2009, the main effort was directed towards Egi, which is situated at the edge of the icecap, only 5 km from deep fjords and in gentle terrain. In August 2009, Avanna Resources conducted a comprehensive soil sampling programme and sampled a series of channel and chip lines across a series of extensively carbonate-potassium-altered mafic lavas. One >100 m long continuous chip line in the eastern part of the area returned gold values of 1.2 g/t over 16 m and 1.2 g/t over 10 m. Chemistry on more than 400 soil samples reveals a number of gold anomalous areas, of which one area exceeds 500 m in length and 200 m in width, is open to the south and has elevated gold values in the



Result of ground magnetic survey over the Qeqertaa dyke, showing the consistent and strong magnetic anomaly associated with dyke 1, and the anomaly above the more thickly covered dyke 2, which Avannaa will test by drilling in 2010.

range 50–200 ppb with peaks at 2 and 5 g/t Au. A soil gas hydrocarbon (SGH) study on the same soil samples resulted in the identification of several anomalies with SGH ratings 4–5.5 for gold and 5–5.5 for VMS on a scale from 1–6. Several of these SGH anomalies coincide with gold bearing rock and soil samples.

In 2010 the field programme will employ combinations of soil sample chemistry, soil gas hydrocarbons, geological mapping, surface sampling and ground based geophysics to assess the potential for economic gold occurrences at Eqi with the aim of defining drill targets for 2011. Other portions of the greenstone belt will be prospected including the areas of Qingaasaq, Ataa Hills and the Proterozoic metasediments at Qeqertakassak by means of aeromagnetic surveys, systematic soil sampling and mapping. These other areas have a proven potential for VMS and lode gold mineralisation, with several sediment samples having gold in the 50–750 ppb range. One area, covering the historic Anderson's showing (polymetallic Cu-Au accumulation) on Arveprinsen Ejland, yielded a large SGH anomaly with a rating of 5.5 for VMS (scale 1–6), which will be followed up by ground geophysics in 2010.

Following the acquisition of >1800 line kilometres of aeromagnetic data in 2009 Avannaa decided to supplement this data with nearly 1500 line kilometres of an aeromagnetic survey over ground prospective for diamond bearing ultramafic lamprophyres and gold occurrences. The aeromagnetic data collected in the core block of Avannaa's Ataa licence area has resulted in >50 strong magnetic lineaments of which geologists were able to visit about 10 in the late field season of 2009. Nearly all the visited lineaments turned out to reflect the presence of ultramafic lamprophyres, of which 4 dykes were of signifi-

cant extent with widths up to 7 m and could be followed along strike for more than 1500 m. Several of the dykes contain altered ultramafic xenoliths, interpreted to be of mantle origin. None of the small number of samples that were collected in 2009 returned any diamonds after testing by caustic fusion. However, there still remains at least 40 primary targets to hit in 2010, plus the additional targets that are anticipated to appear from the aeromagnetic data to be acquired in 2010.

At Qeqertaa, Avannaa keeps expanding its diamond project on the Qeqertaa ultramafic lamprophyre dyke. The encouraging result from the caustic fusion test of a 435 kg bulk sample collected in 2008 (yielding 1487 diamonds, of which 35 were macro diamonds) was followed by the collection of one 10 t and one 3 t sample which were shipped to SGS Lakefield, Canada for DMS test. After running the 3 t test sample it became apparent that the unusual composition of the Qeqertaa dyke (containing >20% metamorphic magnetite) required special treatment and the DMS processing was replaced by a series of magnetic separation stages which in turn proved extremely efficient on this rock. The 10 t bulk sample yielded 32 diamonds larger than 0.85 mm with four stones sitting on the 1.7 mm sieve with the largest stone, a white translucent octahedral, measuring 2.5 x 2.3 x 2.0 mm.

The variation in width along strike of the Qeqertaa dyke was constrained by a detailed ground magnetic survey in June 2009, demonstrating the Qeqertaa dyke to have a width between 4 and 10 m and to be consistent along >2000 m strike length. The ground magnetic survey also confirmed the hypothetical presence of a second, unexposed dyke, with a strike length of nearly 3000 m and variable width of between 1 and 6 m, and covered by



Flammebjerg from the SW showing the proposed drill site and the intense argillitic alteration zone above the postulated stockwork-molybdenite orebody.

5–15 m of moraine. In the coming field season, Avannaa will collect and process a 40 t bulk sample of dyke 1 and to test both the thickness variation of dyke 1 and the unexposed dyke 2 by drilling and by caustic fusion diamond test on the drill core. For this purpose, about 1000 m of diamond drilling in 16 short holes has been planned for the month of July.

In addition to the activities in the Disko Bugt area, revolving around gold and diamonds, Avannaa is conducting a joint photogrammetric study with GEUS on the structural details of an occurrence of strongly folded and faulted Marmorilik Fm marbles in central Nuussuaq. The marbles host showings of high grade Zn-ore and the aim of the ongoing study is to define drill targets for a medium size orebody with high-grade sphalerite (20-30% Zn).

Avannaa expands into East and North Greenland

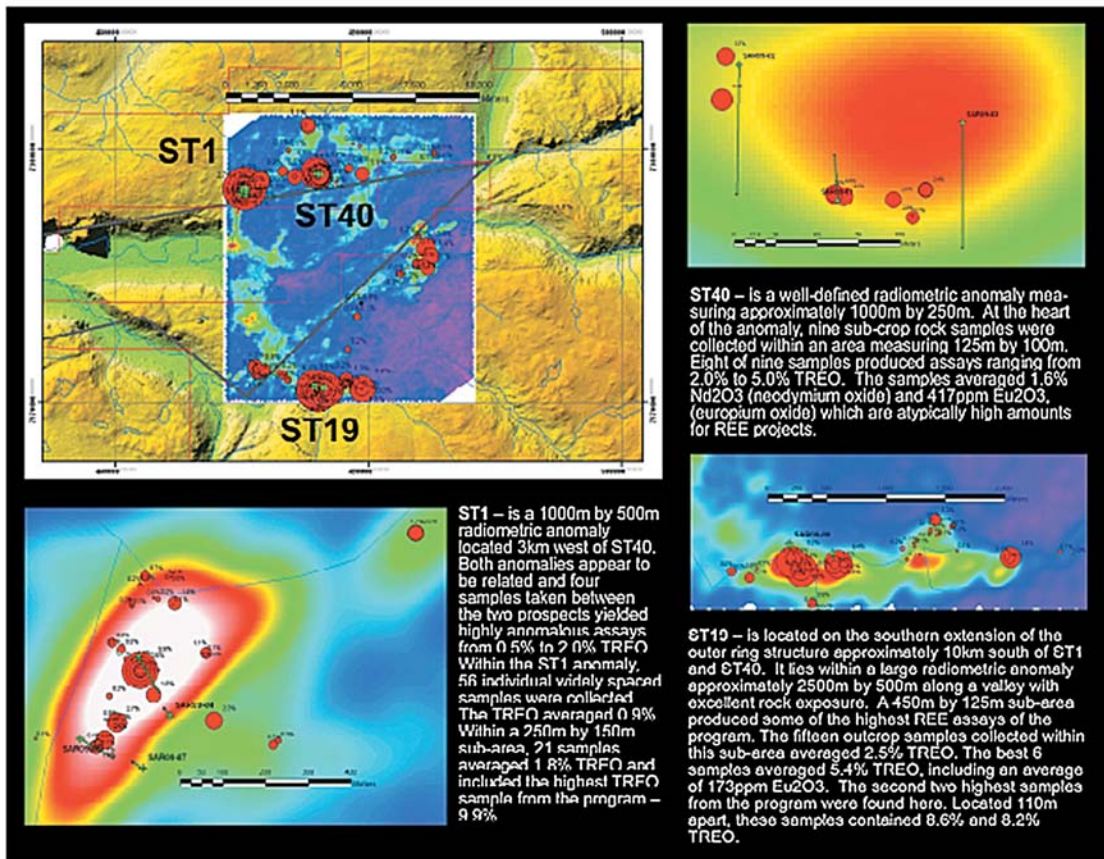
Following its acquisition of licence areas covering Flammebjerg and J.C. Christensen Land, Avannaa moved into the poorly explored North and East Greenland scene. The Flammebjerg licence, near the Skaergaard Intrusion in SE Greenland, hosts a potential Climax-type stockwork molybdenum deposit, and is a close analogue

to the Quadra Mining's Malmbjerg deposit. Fragments of the mineralisation in a late breccia pipe suggest grades up to 0.45% MoS₂, or nearly double the grade of Malmbjerg. Avannaa expects to follow up on the 2010 site visit to Flammebjerg with a drilling programme in 2011 to test the existence of a large tonnage, high-grade molybdenum occurrence. Flammebjerg is situated immediately adjacent to a deep-water fjord allowing for sea transport several months a year.

In J.C. Christensen Land, Avannaa will assess the potential for a large sediment-hosted Cu occurrence. GEUS geologists have reported the finding of chalcocite and bornite in Neoproterozoic sandstones of the Jyske Ås Fm with representative grab samples returning up to 3% Cu and 100 ppm Ag.

Hudson approves 2010 programme for rare earth project in Greenland

Hudson Resources Inc. announced 2 February 2010 that it has approved the first phase of an aggressive programme to advance the rare earth element (REE) project on the Sarfartoq Carbonatite in Greenland, which is 100% owned



Radiometric maps covering the drill sites at the Hudson Sarfartoq REE project.

by Hudson. The programme will commence in March and will include geophysical surveying, environmental baseline data collection, a minimum 3,000 metre drill programme, and bench-scale metallurgical test-work. This first phase of drilling is planned to start in April. It will focus on the expansion of the rare earth zones at ST1 and ST40, which yielded significant REE intercepts in the 2009 drill programme. The ST1 and ST40 zones are approximately 2.5 km apart and appear to be linked based on geophysics and rare earth mineralisation traced on surface. This initial phase of the 2010 work programme, including ground geophysics and 3,000 m of core drilling (approximately 20 holes), is fully funded by the company. The second phase of drilling, representing a minimum of 2,000 m, will be conducted later in the summer based on spring results. Drill core will be logged and split in the field and flown to Canada for assaying.

“We are very excited about the year ahead and have designed a programme which we believe will add significant value to our REE projects”, stated James Tuer, Hudson’s President. “One of our key objectives is to define a resource as quickly as possible and take advantage of the streamlined permitting process in Greenland to rapidly advance the project.”

In 2009, Hudson generated three exciting rare earth priority targets on the Sarfartoq Carbonatite: the ST1, ST40 and ST19 localities. Highlights of the 2009 drill programme include:

- **ST1** • 50.25 m of 2.19% TREO including 9.55 m of 3.98% Total Rare Earth Oxides (TREO) in Hole SAR09-04 of which neodymium oxide and praseodymium oxide average over 25% of the TREO;
- **ST40** • 10.22 m of 1.36% TREO in Hole SAR09-03 of which neodymium oxide and praseodymium oxide average over 54% of the TREO ; and
- **ST19** • 16.00 m of 1.02% TREO with several smaller intersections of more than 1% TREO.

ST40 is a particularly exciting region in that neodymium oxide and praseodymium oxide together average around 54% of the total distribution of rare earth mineralisation. This is highly anomalous compared to an industry average



Field look at the ST 1 anomaly.



Google view showing the location of the Minturn anomaly and the Inglefield Land magnetic anomaly (based on GEUS 1994).

of under 20%. Prices for neodymium have more than doubled over the past six months from \$15/kg to \$35/kg. Praseodymium can be used in place of neodymium and is priced similarly.

NunaMinerals is conducting follow-up on extensive linear magnetic anomaly in Inglefield Land

Initial assay data of magnetite float samples indicates high grade Kiruna-type iron mineralisation. NunaMinerals reported 18 January 2010 that the company commissioned GEUS to carry out mineralogical and analytical studies on a number of float samples collected by GEUS during field work in 1995 at the Minturn magnetite anomaly in Inglefield Land, North-West Greenland.

The Minturn anomaly occurs within a more than 80 km linear magnetic high, which is largely covered by overburden. Analytical work was carried out on nine float samples. The average iron content of the five samples is 62.4%. The content of other elements mostly fall within acceptable limits. In 2010 NunaMinerals is planning to conduct a combined gravity and magnetic fixed-wing survey covering approximately 800 km². The objective is to define drill targets.

NunaMinerals president and CEO Ole Christiansen comments: "The geological setting and the great strike extent of the recorded magnetic high are very encouraging for the project. The peak anomaly indicates a potential billion tonne target. The very high magnetite grades shown in the initial assays make the Inglefield Land project very attractive".

Table showing the assay results of the five magnetite float samples from Inglefield Land.

Sample No.	SiO ₂ Metal	Al ₂ O ₃ %	Fe ₂ O ₃ %	Fe total %	TiO ₂ %	P ₂ O ₅ %	P %	V ppm	S %
406952	7.74	1.91	83.66	58.50	0.35	0.18	0.08	1100	n.a.
406953	4.06	1.55	89.65	62.69	0.29	0.26	0.11	1456	0.03
406986	2.31	1.22	93.62	65.47	0.13	0.21	0.09	1323	<0.02
406987	1.48	0.60	92.01	64.34	0.17	1.41	0.61	1492	<0.02
425340	6.55	1.06	87.23	61.00	0.73	0.01	<0.01	2295	0.02
Average	4.43	1.27	89.23	62.40	0.33	0.41	0.22	1533	0.02



The Minturn magnetic anomaly with a peak anomaly of 15,400 nT was discovered by GEUS in 1994 during an airborne electromagnetic and magnetic survey (see MINEX 8, June 1995). GEUS conducted a follow-up programme in 1995 including an investigation of the peak magnetic anomaly. NunaMinerals conducted a limited helicopter-borne magnetic survey in 2008 and confirmed the presence of the Minturn anomaly with a peak anomaly of 36,000 nT. The peak anomaly can be seen to be part of an at least seven kilometres long and straight magnetic high. The eastern and western termination of the high seems to be controlled by faults. The reported mineralogical study was conducted using an optical microscope and electron microprobe analysis. These initial studies show that the iron mineralisation, although mostly covered by overburden, is probably a high grade Kiruna-type magnetite-apatite iron ore. For comparison, the Kiruna orebody in northern Sweden is 4 km long, 80 m thick and more than 2 km deep.

The average Fe content of the five float samples at 62.40% is high for magnetite ore. Apatite occurs interstitially to magnetite and as millimetre wide and centimetre long veins. Apatite often has numerous rod shaped inclusions of monazite. One of the float samples displays a massive magnetite which is pervasively altered to hematite.

Additional reading: 2009, Geology & Ore No.13: Iron oxide copper-gold (IOCG) mineralising systems in Greenland, 12 pp.

The Black Angel zinc-lead mine is preparing to go again

2009 was a transformational year for the Angel Mining Plc. The acquisition of the Nalunaq gold mine in Greenland, as first announced on 1 July 2009, has accelerated the point at which the company will be cash generative as production is now imminent. Authorisation permits by the Greenlandic authorities are well progressed and the export licence should be granted by the time the first doré bars are available for transfer to the refiner.

21 January 2010 the following news was released: At the Black Angel Mine, Maarmorilik, the company has completed the construction of the lower cable car terminal and work will recommence in the spring to construct the upper terminal, and the infrastructure for the mineral processing plant. In addition work will continue on expanding the existing project camp. Subject to the availability of finance, the company plans to build the cable car, underground processing plant and extend the camp during 2010 in order that production can commence in early 2011.

“Much was achieved in 2009 but 2010 presents new challenges and opportunities. Raising the funding for the Black Angel will be helped by cash being generated at Nalunaq and the much improved commodity prices. I expect the cash cost of production at both Nalunaq and Black Angel to be less than 50% of current market prices. Management looks forward to continuing the progress made by the company over the last 12 months as it looks to further develop its mining operation,” comments Nicholas Hall, Angel Mining CEO.



View to the 'Black Angel' cliff from the area of the lower cable car terminal in Maarmorilik.



Linking the mine entrance to the ground facilities at Maarmorilik is a substantial engineering challenge. The cable car will have to span 1.7 km and it has to rise 600 m to the adit which is located on a cliff face made of white marble.

Greenland Day at the PDAC in Toronto 8–10 March 2010

'Greenland Exploration and Opportunities' will be the theme for the presentation. The Bureau of Minerals and Petroleum has the pleasure to present a half-day presentation concerning the opportunities for mineral deposits in areas not yet covered by licences. The technical session aims to inform the exploration and mining industry about the mineral exploration opportunities in Greenland, licensing terms and conditions for operating in Greenland.

You are also invited to visit the Greenland booth (#417) at the Trade Show on March 8 to 10. The exhibit will focus

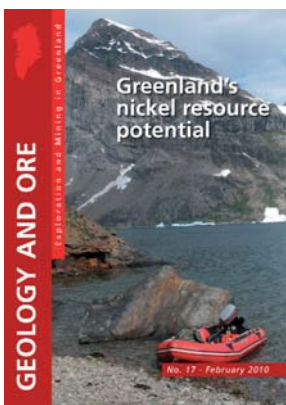
on geological environments and the possibilities of finding 'giants', Greenland Ni-potentials and new areas with a mineral resources potential. Stop by the booth and meet the experts, who will be ready to tell you about the 'hot' themes of Greenland resources.

To sign up for the presentation, please send your contact information to the BMP by e-mail (bmp@gh.gl) or fax (+299 32 43 02) to the Bureau of Minerals and Petroleum. A full programme can be viewed at the BMP homepage: www.bmp.gl. You are also welcome to visit our Booth # 417 and ask for Henrik Stendal.

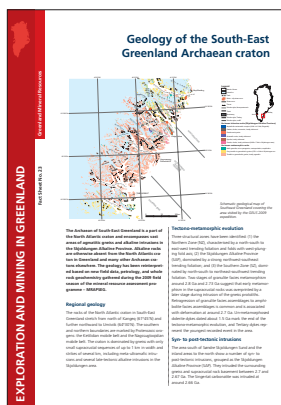
Inclusion on the MINEX News mailing list is free. Please sign up minex@geus.dk and tell us if you want the on-line version.

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New issues of the series 'Geology & Ore' and 'Fact Sheets' with themes on Greenland exploration and mining



2010, *Geology & Ore* No. 17: Greenland's nickel resource potential, 12 pp.



2010, *Fact Sheet* No. 23: Geology of the South-East Greenland Archaean craton, 2 pp.



Northern lights at the Hudson Base Camp in the Sarfartoq area.

GEOLOGICAL SURVEY OF DENMARK AND GREENLAND (GEUS)

Øster Voldgade 10 · DK-1350 Copenhagen K · Denmark
 Tel: +45 38 14 20 00 · Fax: +45 38 14 20 50 · e-mail: minex@geus.dk · homepage: www.geus.dk

BUREAU OF MINERALS AND PETROLEUM (BMP)

Government of Greenland · P.O. Box 930 · DK-3900 Nuuk · Greenland
 Tel: +299 34 68 00 · Fax: +299 32 43 02 · e-mail: bmp@gh.gl · homepage: www.bmp.gl

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