MINEX
GREENLAND MINERAL EXPLORATION NEWSLETTER

MINEX 25 · DECEMBER 2003

2003 - a year with growth in exploration and a gold mine to start

After several years with mineral exploitation at a standstill, Greenland witnessed in 2003 increasing exploration activity again. The year 2003 has demonstrated that the many years of work to establish a sustainable mineral resource industry in Greenland have fertilised the ground for recurrent exploration directed towards the wealth of mineral prospects.

At the end of the year final preparations were carried out for the opening of the gold mine at Nalunaq in South Greenland. Prior to mining the loading of stockpiled high-grade ore was successfully carried out when the bulk carrier MV Lake Erie departed 6 January* with *c.* 30.000 metric tonnes from Greenland to Spain for processing and gold recovery.

Independent of this development, the Bureau of Minerals and Petroleum (BMP) is currently preparing an updated strategy for minerals. The Strategy will contain new initiatives in three main areas: geology, licence terms, and promotion. Part of this work involves an assessment and possible modification of the current rules (standard terms) for minerals in order to ensure competitive conditions for Greenland. The differences between large and small companies must be taken into account, the terms should remain relevant through fluctuations in global economic conditions and the rules for exploration and production should still be simple and easy to administrate.

*(*Information received after stop press time)*

Fig 1: The bulk carrier M/V 'Lake Erie' loading gold ore at Nalunaq

Company New Years statements point to increased activity in 2004

In order to emphasise the importance of progressive co-operation and understanding among the Greenland authorities and operators in mineral exploration, a number of licensees were invited to contribute to this issue of Minex with a New Year's press release. The assembled statements reported on the following pages lend powerful support to our belief that increased industry activity is indeed to be expected.

Mine planning activities in the Nalunaq deposit, drilling in the Nanortalik licence area and aggressive development of the Seqi olivine deposit in South and West Greenland ('Crew')

Crew Development Corporation ('Crew') by its president & CEO, Jan A. Vestrum, is pleased to report the results of the season's exploration campaign in Greenland. The company has started an intensive exploration campaign and drilling in its 1,065 km2 Nanortalik license area following the completion of mine planning activities in the Nalunaq deposit. In addition, the Company has commenced an aggressive development of its olivine deposit in West Greenland.

NALUNAQ: Loading of the stockpiled high-grade ore will start immediately upon arrival of the bulk carrier MV Lake Erie at the Nalunaq port site, confirmed for end of December, 2003. MV Lake Erie has a cargo capacity of around 35.500 metric tonnes, and approximately 21,500 ounces will be shipped from Greenland to Spain for processing and gold recovery.

The remaining 2,500 tonnes of stockpile, which comprises the lowest grade material, will be included in the next quarterly shipment, along with ore that will be mined in the first quarter of 2004. The next shipment is estimated to take place in April 2004 and on a quarterly basis thereafter. Total annual volume to be shipped is estimated at 150,000-160,000 tonnes, which will result in a gold production of approximately 130,000 ounces per year from the Nalunaq gold mine.

No exploration work has been performed on Nalunaq in 2003 as focus has been on preparing the mine for production, completing permanent mining and mine site infrastructure, and on the shipping of ore to Spain. An aggressive exploration campaign is planned in Nalunaq for 2004 including work on the extension on levels 350, 400 and 450, the valley sector and in particular the high grade zone from level 600 to 800.

LAKE 410: The initial work on the Nanortalik exploration license in South Greenland was encouraging and will result in a follow-up campaign to delineate and better define the new discoveries within the license area. Widely spaced drilling in the 'Lake 410' target covering an area of 900 x 300 m demonstrated the presence of a mineralized structure in all four drill holes and with a similar geological setting and alteration patterns as found in the Nalunaq deposit, located only about 14 km further north. The drilling returned significantly anomalous intercepts of 2.2 g/t over 2 metres in drill holes one and two, and 0.2 g/t and 0.3 g/t in drill holes three and four. These results are in line with sparse outcrop samples, but require follow up work. Similar results were encountered in the initial drilling of Nalunaq and it is management's opinion that due to the substantial nugget effect of these deposits, the initial drilling results may not be representative of the potential average gold grade. The widely spaced drilling demonstrated a potentially continuous structure of nearly 300,000 m^2 and, with visually mineralised intervals of about 6 m width in the best intercept and an average of 3 m, the structure is considered promising and will be subjected to further sampling and drilling. Additional surface sampling to follow and extend the structure, which is open in all directions, with supplementary in-fill drilling is being planned for the coming season.

NIAQORNAARSUK: In the Niaqornaarsuk peninsula extensive prospecting has lead to the delineation of three highly prosperous areas, which warrant immediate follow up and further exploration work. 21 rock samples returned in-situ gold values between 1-7 g/t and the best grab samples assayed 33 g/t to 56 g/t. More importantly, these samples were collected in narrow, elongated areas that align in NE-SW direction. One particularly interesting cluster occurs in the valley adjacent to the Nanisiaq gold occurrence, extending across the ridge to the southwest into the main Niaqornaarsuk valley, where the two high-grade rock samples were collected. This structure is more than 5 km long and open ended, projecting into glacial overburden along strike. Other occurrences have similar strike length and are presented in sporadic out-

Fig 3. The mining camp at Nalunaq, December 2003.

crops along the slope and across the Niaqornaarsuk glacial valley. The steep alpine terrain and the high amount of glacial debris complicate the exploration work, and represent a challenge in the identification of mineralised structures in the Niaqornaarsuk area. The three areas identified to date, however, are quite accessible and a systematic follow up will be conducted in the coming field season.

SEQI: In the Seqi Olivine project, which was acquired in the spring of 2003, systematic drilling has been completed from 22 drill holes to a depth of 100 metres each, with a single hole to 133 metres. All holes ended in massive olivine and the drilling demonstrated that the deposit is substantially larger and of a better quality than previously assumed. The olivine deposit consists of more than 95% olivine with substantial parts more than 98%. The materials show very limited alteration and appears to be an exceptionally equigranular product. Geological mapping has outlined the surface expression of the deposit, which indicates a potential resource of one million tonnes per vertical metre. Assaying of more than five tonnes of material from 998 samples is currently being completed, which will form the basis for a full resource evaluation. Previous assay tests show that the deposit has a composition well within specifications for industrial olivine products. A 50-tonne bulk sample has been extracted and shipped to LKAB's pelletizing facility in Northern Sweden for detailed test work.

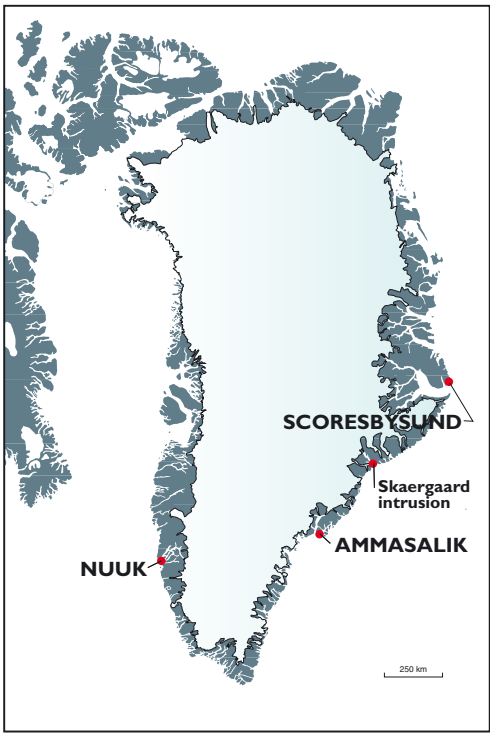
A detailed land survey has been completed allowing for open pit planning as well as design of the necessary infrastructure, including a shipping facility. In November, a detailed marine survey and seabed mapping was completed and the data are currently being processed for the preparation of new nautical charts for the fjord. Environmental baseline data has been gathered showing that the water quality was good, with no parameters in excess of any threshold values, and that the deposit accordingly can be considered environmentally passive.

Fig 4: Channel sampling of mineralised layers within the Skaergaard intrusion

The company is currently completing a scooping study on Seqi, including detailed plans for an early start of production. It is estimated that the deposit will supply about one million tonne per year from an open pit mining operation, and the partners are scheduling the shipping of a substantial industrial bulk sample in the coming season subject to the authorities' approval.

Review of all previous data has indicated the existence of an extensive (1.8 billion tonne) zone with recoverable values of gold, palladium, platinum, titanium and vanadiferous magnetite in the East Greenland Skaergaard indtrusion ('SMC')

Skaergaard Minerals Corp ('SMC'), a wholly owned subsidiary of AIM listed Galahad Gold Plc, is continuing its exploration activities on the Skaergaard Mineral Concession in East Greenland reports company representative Morris Beattie. The geology of this intrusion has been the subject of academic research for many decades. It is only relatively recently that the precious metal potential of the intrusion was identified.



This past summer SMC conducted surface sampling, including three bulk samples for metallurgical test work, and completed a shallow drill hole. The analysis of these samples, in addition to a review of all previous drill and surface sampling data, has indicated the existence of an extensive (1.8 billion tonne) zone containing recoverable values of gold, palladium, platinum, titanium and vanadiferous magnetite. A preliminary metallurgical flow sheet for the recovery of these products into saleable concentrates has been developed. An underground mining concept has also been developed for the project and preliminary cost studies indicate that the project should prove viable as additional studies are completed.

As the next stage in its ongoing development program at Skaergaard, SMC intends to conduct a 6,000-metre in-fill drill programme during the summer of 2004 to provide data for resource calculations. This programme will be followed by a more comprehensive drill programme in 2005, leading to a feasibility study for the project.

NunaMinerals form a Joint Venture with Greenland Resources to explore the Storø Gold Project close to the capital of Greenland, Nuuk ('NunaMinerals')

NunaMinerals A/S is by its president, Ole Christiansen, pleased to announce that NunaMinerals has signed a Letter of Intent with Greenland Resources A/S to form a Joint Venture to explore the Storø Gold Project, Nuuk Fjord region of West Greenland, 40 km east Nuuk, the capital of Greenland. Greenland Resources A/S intends to spend up to DKK 12 millions (USD 2 millions) on exploration. Ove Rosing Olsen, chairman of the board of NunaMinerals, said: "An alliance between NunaMinerals and Greenland Resources is of great importance for the continued development of the exploration business in Greenland. The logistical abilities of Greenland Resources highly compliment the exploration expertise of NunaMinerals."

The Storø exploration licence covers 222 km^2 of the central part of the Archaean Nuuk Fjord supracrustal belt. Exploration over the past 10 years has resulted in the recognition that it may be a gold province on the scale of Timmins or Kalgoorlie. The known gold occurrences extend over a 150 km long trend controlled by a late Archaean regional suture and are localised by fault splays near this major suture. The Storø area is located at a major flexure in the regional suture.

Fig 6: Rusty Archaean greenstones with gold mineralisation, located adjacent to a major Archaean terrane boundary, Storø, Godthåbsfjord.

Gold mineralisation is hosted by *c.* 2840 Ma old supracrustal and amphibolite rocks, which suffered amphibolite facies metamorphism and deformation at 2634+/–8 Ma. Gold mineralisation occurred between 2634–2539 Ma. This is concurrent with intrusion of the nearby Qooqqut granite and penecontemporaneous shearing.

Gold occurrences in this terrane have been discovered at several structural settings and in several rock types including quartz veins as well as banded ironstone, garnet-amphibolite, garnet-mica schist and fractured quartzitic gneiss, all of which contain pervasive quartz stringers. There is a strong gold-arsenic association in all these rock types.

At Storø, four drill targets have been identified along a strike length of 6 km. At the Qingaaq prospect, the Main Zone (MZ) structure is up to 50 m wide and has been traced over a strike length of 850 m at elevations between 500 and 1030 metres before disappearing under cover. The MZ structure is open to depth. Drill intersections on the MZ structure include 6 g/t gold over 18 m, including 37 g/t over 1.8 m. Other gold bearing structures at the Qingaaq prospect include the Claus Break, the Tom Break and the brittle-ductile transition zone (BD-zone).

Fig 8: A view of Nuuk with the central part of Godthåbsfjord in the distance

NunaMinerals plans a 2004 exploration programme that will include ground magnetic and IP surveys, channel sampling and diamond drilling.

'Titan 24' system allows Vismand to effectively explore to depths of up to 1km in search for a Noril'sk style nickel-copper-PGE deposit in the West Greenland Disko Bay Area ('Vismand')

Vismand Exploration Ltd. completed three 'Titan 24' transects on its exploration licence in the Disko Island area of West Greenland during the summer of 2003. The traverses were completed, along the Avfarssuaq Valley, through the Kuugannguaq Valley and NW-SE along the Northeast coast of Disko Island near Illukunguaq. The geophysical inversions and interpretation of the results are still in progress. The exploration target is a Noril'sk style nickel-copper-PGE deposit that would be associated with sills and feeder dykes to overlying picritic and tholeiitic flows of the West Greenland Flood Basalt province. Crustal contamination and nickel depletion in the picritic flows have been demonstrated by geochemical studies by the GEUS and previous exploration companies. However,

Fig 9: The beach at Asuk with a rusty layer of iron basalt, northern coast of Disko Island. Photo: A.K.Pedersen.

Fig 10: Aerial view of the edge of Sukkertoppen Icecap near Kangerlussuaq Fjord.

it was concluded that the exploration target was too deep to continue exploration efficiently with the techniques available. The use of the 'Titan 24' system allows Vismand to effectively explore to depths of up to 1km, which was not practical in the past. Vismand is a private Ontario based exploration company, which plans to go public during 2004, reports company representative Richard Moore.

Diamonds from three samples recovered from the Kangerlussuaq area in West Greenland, and geothermal setting within the region is judged equivalent to that of the prolific diamond areas in Canada's North West Territories ('Hudson')

Hudson Resources Inc. ('Hudson') completed its initial exploration program on 3 July 2003 reports director James Tuer. Hudson targeted structural settings where prior kimberlite occurrences were known to occur in conjunction with superior kimberlite indicator minerals ("KIM"). Hudson collected approximately 600 kilograms of material from a variety of spatially separate sources and shipped this for kimberlite processing to the Saskatchewan Research Council ("SRC"). The SRC processed 18 samples weighing a total of 246 kilograms for microdiamonds by caustic fusion analysis. Diamonds from three of the samples were recovered, as shown in the table. These samples, as well as a number of other kimberlitic samples, have also been submitted to R.L Barnett Geological Consulting Ltd. of London, Ontario, for thin section and microprobe analysis. The total program size was in the order of C$250,000.

In the fall of 2003, Hudson contracted Dr. Herman Grütter, of Mineral Services Canada Inc., to calculate the geotherm related to Hudson's tenements in the Sarfartoq re0gion. He demonstrated that the geothermal setting within the region is equivalent to that of the prolific Lac de Gras area in Canada's north, host of the Ekati and Diavik mines.

Hudson is very encouraged by these results and plans to undertake a geophysical survey in the early spring of 2004. Upon identifying appropriate targets, and in conjunction with the areas of superior mineral chemistry, Hudson plans to conduct a drill programme in the spring/summer of 2004 to test for larger bodies of kimberlite.

Sample	Sample weight (kg)	+0.106 mm sieve	+0.150 mm sieve	+0.212 mm sieve	+0.300 mm sieve	Total micro diamonds
03MDP019	16.00	2	5	2	0	9
03MDP022 (A)	16.00	2	3	1	1	7
MDP022 (B)	24.65	4	0	0	0	4

Navigator acquires 'Fossilik' ultramafic breccias in West Greenland

Navigator Exploration Corp. by its company representative, Robin Hopkins, reports that the company is pleased to have been granted an exploration licence in West Greenland. The 137 km^2 licence covers specific areas of interest for diamondiferous kimberlites, some 130 km north of Nuuk, Greenland's capital.

The 'Fossilik' showing consists of numerous frost heaved ultramafic breccia boulders situated around the shore of a small lake within Navigator's licence. Boulders comprise xenoliths of Paleozoic limestone and gneissic country rock entrained within an intrusive rock consisting of phlogopite, ilmenite, olivine, clinopyroxene and eclogite macrocrysts in a groundmass of carbonate, altered olivine, titanium magnetite and phlogopite. A drill hole collared during a 1965-1968 nickel exploration program intersected a similar breccia unit beneath the lake. Phases of the ultramafic breccia are being investigated for potential kimberlitic affinities. BMP and GEUS publicised this occurrence at the 2003 Prospectors and Developers Annual Convention in Toronto.

During the 2003 field season, Navigator's geologists confirmed the presence of additional occurrences of ultramafic breccia (including a boulder showing encircling a second small lake), followed-up elevated diamond indicator mineral results from historical exploration records (e.g. 262 pyrope garnets and 70 chrome diopsides in a single till sample) and investigated the gold potential of several sites. Three known kimberlitic bodies were also sampled. A total of 158 samples were collected: 28 rocks; 47 tills and 83 'soils'. Final results of this work are not anticipated until early 2004, but initial chemistry from indicator minerals recovered to date is consistent with derivation from a potentially diamondiferous source body.

Diamond exploration boosted by BMP and GEUS

The joint BMP and GEUS initiative on the diamond potential in West Greenland through the issuing of a DVD with compilation of known company information was completed early in 2003 (MINEX 24). The initiative was continued with fieldwork in the region of Maniitsoq-Kangerlussuaq in West Greenland in 2003, now with a focus on the delineation of potential diamondiferous rocks. GEUS and BMP continue to give attention to the work on kimberlitic rocks and a broad analytical programme was a part of the 2003 campaign. Additionally recent Survey research on the distribution and magnetic signature of kimberlitic dykes were poster presented at the 8*th* International Kimberlite Conference in Victoria, B.C. in June 2003.

Fig 12: Field work during the BMP/GEUS diamond exploration 2003

'The mineral hunt 2003' winners are picked - Gold is in the lead

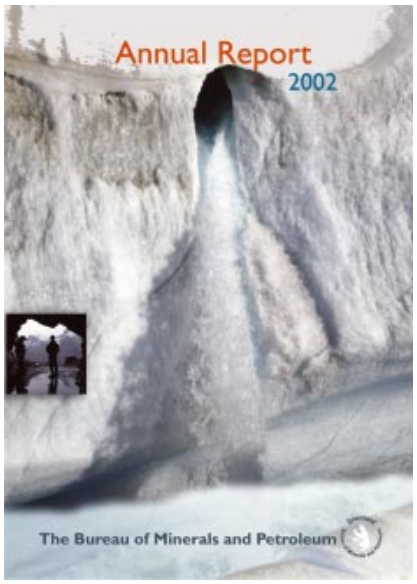
The domestic mineral hunt programme, 'Ujarassiorit', has now existed for 15 years. The programme with the name meaning 'go out and look for rocks' is a popular yearly competition, and Greenland Resources A/S in Nuuk, on behalf of BMP, organizes the activity. Prizes are given to those samples that hint of promising mineral potential, seen in relation to their location and ability to add new information to the knowledge of the mineral resource distribution in Greenland. In other words, samples collected at known mineral deposits are not awarded.

Samples from the year 2003, in total 1279, were especially honoured by the evaluation committee for promising contents of gold and copper in South Greenland. The 1st prize was awarded for a sample found near the village of Alluitsup Paa of quartzitic gneiss with 109 g/t gold assayed and with increased contents of silver, bismuth copper and tungsten. The 2nd prize went to a sample of mineralised gneiss outcropping not far from the town of Nanortalik, with a silver content of 227 g/t and enlarged values of gold, bismuth, copper, tungsten, REE and radioactive elements. For further information see press release at www.bmp.gl under 'News Desk'.

Mail to:

BMP Annual Report 2002 with a new look - now released as hard copy and on-line

The Annual Report 2002 from the Bureau of Minerals and Petroleum is now available. The Minister introduces the report and concludes in his foreword that significant interest persists from international industry to exploit Greenland's natural resources. This interest applies to minerals, hydrocarbons and the large resources of ice and water in Greenland. The Annual Report also illustrates that good co-operation between authorities, industry, and research institutions are an important factor for success. The Minister sincerely hopes that this co-operation will continue and that it will be developed further to the benefit of Greenland.



The report also pictures the highlights of exploration activities in 2002, illustrated and with brief overviews of major fields of operation. A list of relevant publications rounds up the 16-page report, which can be obtained free of charge from BMP. E-mail bmp@bmp.gl to get your own copy.

New issues of Greenland Mineral Resources Fact Sheet: Nos. 6 and 7

No. 6: Gold in the Nuuk area of West Greenland
No. 7: Diamond exploration in Greenland

Two new fact sheets will be available at end of January 2004 with status on two subjects of much interest these days. They can be obtained free of charge from GEUS.
E-mail minex@geus.dk to get a copy.

Mineral Exploration Roundup 2004 Trade Show - Greenland welcomes visitors

The Greenland tradition to participate in the yearly Roundup conference and trade show in Vancouver, Canada continues in 2004 with more presentations and activities. You are kindly invited to visit our booth (No C11 and C12), 26–29 January 2004. Exhibition and material will focus on the gold geology and diamond exploration in Greenland as well as on general information on the mineral resources potential. Look in for a chat with the experts, who are ready to tell you about geology, licensing and logistics in Greenland.
We will also be at our booth (0414) on the PDAC trade show in Toronto in March 2004.

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