

Please review all of the following information, including the gear allocations and field team information, to ensure accuracy. This plan is an agreement between VPR and your group, documenting the logistics support you will receive.

• Project Information •

Lead Principal Investigator	Dr H.A.J. Meijer
Institute	CIO-RuG (Centre for Isotope Research, University of Groningen)
Project Title / Grant #	On-site isotope diffusion experiments conducted by Netherlands Arctic Program (NAP) / ALW-NAPSP/07-03
NSF Program and Manager	NL\Federal\NWONAP, Ms Renee Crain
VPR Project Manager	Dr Sandra Starkweather

• Logistics Summary •

For this isotope study funded by the Netherlands Arctic Program (NAP) of the Netherlands Organization for Scientific Research (NOW), researchers will conduct shallow ice-core sampling in Greenland.

From 2007-2011, project researchers will work each year at two sites in Greenland: Summit Station and site "S10" about 150 km east of Kangerlussuaq. At the latter, researchers laid down an isotopically enriched snow layer in 2005; with this project, they will continue studying the layer. They will establish an enriched layer at Summit (and at a third site in Antarctica) for comparative analyses.

In August of 2007, 2 researchers will spend several days at Summit Station where they will produce a ~6 x 6 meter isotopically enriched labeled layer in undisturbed snow using a snow maker that draws enriched water from a small inflatable swimming pool. The researchers will also travel via helicopter to the S10 site, 150 km east of Kangerlussuaq, to revisit the experiment they set up in 2005.

Thereafter the researchers will return to both sites annually to sample the enriched layer. The development of the isotope-labelled layer will give experimental validation to isotope diffusion models that are in use to correct ice core measurements.

VPR will support this project with cost-reimbursable transport to and from Summit Station, Summit user days, and access to the Summit infrastructure. All other expenses, including helicopter supported work east of Kangerlussuaq, will be arranged by the PI and paid with grant funds.

For the complete VPR online project record for this grant, including science objectives, go to: http://www.vecopolar.com/arlss_reports/arlss_projectsdetail.asp?cbPropNum=NAP-ISO

For up-to-date information on the project's schedule, please view the online [Greenland calendar](http://www.vecopolar.com) (www.vecopolar.com > Greenland > Calendars/Schedules).

• Outstanding Issues •

Issue	Responsibility	Date Completed
Review support plan for accuracy and distribute to all field team members	PI	June 2007
Obtain all necessary permits for fieldwork	PI	(Per PI: Danish authorities said no permits needed)
Visit all hyperlinks and review all documents referred to in the support plan	Field Team Members	June 2007
Contact the GEOSummit Science Coordination Office (SCO) mailto:sco@summitcamp.org regarding your project's plans for the season	PI	May 2007, ongoing
<ul style="list-style-type: none"> - Provide cost estimate for billable support (see Appendix) - Develop a Purchase Order with VPR prior to field work - Provide bill for actual support 	VPR PI VPR	May 2007 June 2007
<i>Please note this important information for your field team: Bring 2 different forms of picture ID. Passports are mandatory for entry into Greenland.</i>	Field Team Members	
Complete Critical Success Factors	PI	6/25/2007

• Allocations & Services •

This support will be provided by VPR on a direct billable basis. Please see Appendix for an estimated cost.

Allocations from Inventory

Quant/Unit	Item
2 ea	Arctic Over Sleep Tents
4 ea	Sleep Pads
2 ea	Snow Machine
2 ea	Nansen Sled
1 ea	Large "fish tanks" (1000 liters of water)
1 ea	Trash pallet bag liner
1 ea	GPS
1 ea	VHF Radio
1 ea	Survival Bag
4	4 meter length, Bamboo stakes/poles for marking the snow field and tracking the annual snow fall

Other Services

Project Allocations	Comments
1000 liters untreated water	This water must be untreated by chemicals. The PI has reviewed the Summit filtration system and approves of post-filtered water. PI will provide "swimming pool" for 1000 l storage at the work site. Water will be transferred to the site in "fish tanks" or the water pig. The PI will provide the isotope enrichment for the water.
10-20 l Mogas	Normal vehicle gasoline rated "Euro 95 octan" in Europe
Shop space	For overnight storage of our snow machine

Experiment Site	It is provisionally recommended that the PI set up a work site to the North of the skiway. The VPR PM will be on site during this visit to fine tune or review the location. The location must be undisturbed for the next 10 years. The researchers do not request a work tent since they will be relatively close to station >10 minute snow machine ride.
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• Location Information •

Please visit <http://www.vecopolar.com> and navigate to the Greenland menu for en route and location-specific Greenland information. Prior to deployment, your entire field team should be familiar with the content of the *Greenland Guide* and, if traveling to Summit, with the guidelines provided in the *Summit Users' Guide*. Both are available electronically via our web site's Greenland menu.

• Cargo and Customs •

All cargo arrives in Kangerlussuaq from Copenhagen

- ✓ Customs instructions are available on our website at <http://www.vecopolar.com> (go to Greenland > Customs)
- ✓ For Customs requirements please refer to the *Greenland Guide*, also available at <http://www.vecopolar.com> under Greenland.

The following is our current understanding of your overall cargo requirements for shipment from **Kangerlussuaq to Summit**

Items	Weight/Cube
Gasoline motor-generator-water pump combination (on wheels)	≈ 100 kgs / 120 x 70 x 100 cm
Additional, smaller equipment in two metal boxes	2 x ≈ 20 kgs / 80 x 50 x 40 cm
Personal belongings in ruck sack / suitcase / sleeping bag, 1 per person	

• Field Team Information •

Name	Location	Date In	Date Out	Email
Harro Meijer	Kangerlussuaq -> CPH	8/3/2007	8/12/2007	h.a.j.meijer@rug.nl
Harro Meijer	Summit	8/7/2007	8/9/2007	
Gerko van der Wel	Kangerlussuaq -> CPH	8/3/2007	8/12/2007	L.G.van.der.Wel@rug.nl
Gerko van der Wel	Summit	8/7/2007	8/9/2007	

• Project Contact Information •

Research Team

Role	Name	Email	Phone / Fax
PI	H.A.J Meijer	H.A.J.Meijer@rug.nl	+31-50-363-4739

VPR Team Members

Contact for	Name	Email	Primary Phone(s)
Greenland operations	Jason Buenning	jason@polarfield.com	Denver: 303-638-6669 Greenland: 011.299.524218
Greenland operations	Mark Begnaud	mark@polarfield.com	Denver: 720.320.6160 Greenland: 011.299.524281
Summit operations	Sandy Starkweather	sandy@polarfield.com	Denver: 303.518.8714
Sat phones & comms	Roy Stehle	roy.stehle@sri.com	Menlo Park: 650.859.2552
Denver operations	Jill Ferris	jill@polarfield.com	Denver: 720.320.6155

Scotia Operations & Customs	Earl Vaughn	earl.vaughn@gmail.com vprscotia@hughes.net	Scotia: 518.331.3103
Purchase Orders	Jan Zanetell	Janet.Zanetell@veco.com	303.268.3553

VPR Offices

Denver	Kangerlussuaq	Scotia
VECO Polar Resources Western Office 8110 Shaffer Parkway Suite 150 Littleton, CO 80127 Tel: +1 303.984.1450/1439 Fax: +1 303.984.1445	VECO Polar Resources Attn: Name of Employee/Researcher Postboks 1015 DK-3910 Kangerlussuaq, Greenland Tel: 011.299.841598 Fax: 011.299.841599	Earl Vaughn C/O 109 th Aerial Port Bldg. 20 Stratton Air Base Scotia, NY 12302-9752 Tel: 518.331.3103 Fax: 518.334.2537

Other

Organization	Internet	Phone
Medical Advisory Services	http://www.mas1.com	410.257.9504 / 410.257.9505 / 410.257.9506
Summit Science Coordination Office	http://www.geosummit.org sco@summitcamp.org	John Burkhart 011.479.6825011 (Norway) 1.209.658.7142 (USA, messages checked weekly)

• Safety, Environment, Health, and Permitting •

Permits

All science teams planning to conduct research in Greenland must complete an **annual application** in order to obtain approval from the Danish Polar Center (DPC). The application forms are available from the DPC at <http://www.dpc.dk>. Applications are submitted directly through the DPC, rather than through the U.S. State Department. For assistance with the application process, contact:

Poul Henrik Sorensen

E-mail: phs@dpc.dk

Telephone: +45 3288 0100

• Critical Success Factors •

Please list the factors that are most important for the success of your science. We track these factors in order to measure the success of VPR's support. Examples might be the availability of the helicopter or camp gear.

Factors
Availability of a spot, marked by stakes, that has been undisturbed for the last two-three years
Possibility to measure the depth of our deposited layer year after year
Availability of 1000-1200 liters of water
Availability of 10-20 liters of gasoline (normal vehicle gasoline rated "Euro 95 octan" in Europe)

• Government Performance and Reporting Act of 1993 (GPRA) •

NSF/OPP requires your help in complying with the Government Performance and Reporting Act of 1993 (GPRA). One measure of VPR's performance is a "facility-performance metric" which counts the number of productive days your project has in the field while relying on VPR facilities or support. Please keep track of any "lost days" and report these to us at the end of the season.