

SITE MANUAL

Villum Research Station

Station Nord

2015



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Site manual for Villum Research Station, Station Nord

Version 2015

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2 Introduction

The Villum Research Station is located at 81°36N, 16°40W in the very north-east of Greenland next to the Danish Military Station Station Nord, where five persons are stationed throughout the year with the main purpose of maintaining and clearing a runway.

2.1 About the Site Manual

This manual will provide information about conducting fieldwork in the Station Nord area with the Villum Research Station as your base.

The manual is divided into five sections:

1. General introduction to Station Nord
2. Practical information concerning travels to Villum Research Station (VRS)
3. Information on safety issues at VRS
4. Cargo
5. Applications, administration and appendices

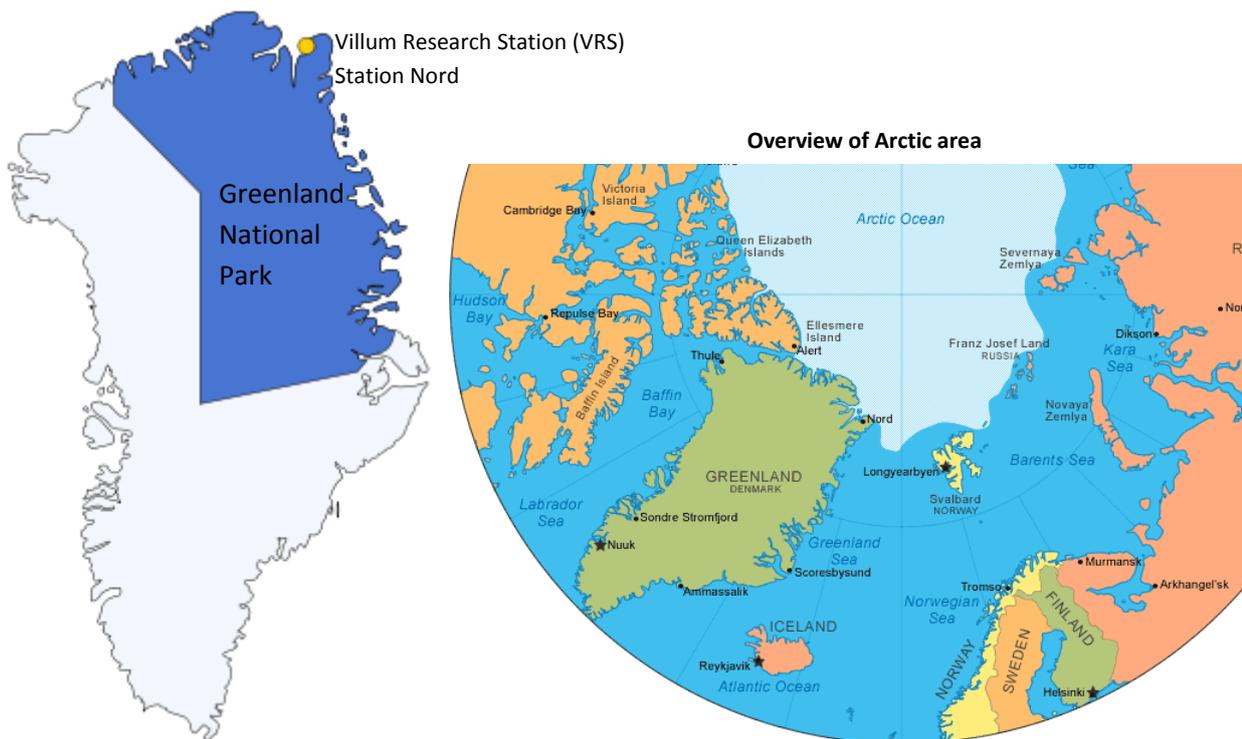
Section 1

General introduction to the Station Nord area

3 Where to find Villum Research Station, Station Nord

Villum Research Station is located on the military outpost Station Nord at 81°36N, 16°40W on Prinsesse Ingeborg Peninsula at the very north-eastern corner of Greenland. The station is situated in the National Park of North and Northeast Greenland, the largest national park in the World. The nearest town in Greenland is Ittoqortoormiit (Scoresbysund) ? km to the south, while the nearest town outside Greenland is Longyearbyen on Svalbard (Norway) ? km to the east. Northern Greenland is among the most remote wildernesses on the northern hemisphere. Villum Research Station is owned by the Greenland Government and is being run and maintained by Aarhus University. The station is situated on Station Nord and part of the logistics (e.g. power and water supply, handling of garbage, supply of provisionrelating to the run of the station is being operated in cooperation with the Danish Defence. Villum Research Station has different staff, including a scientific director, a station manager and different logistics assistants. The ASP projects are guests at Villum Research Station, and should follow the rules set by the station and any advice on use of the station given by the station staff.

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4 Climate and Wind Chill factor

Station Nord features a very cold polar tundra climate with average temperatures just a few degrees above the freezing point in the midst of the sort summer.

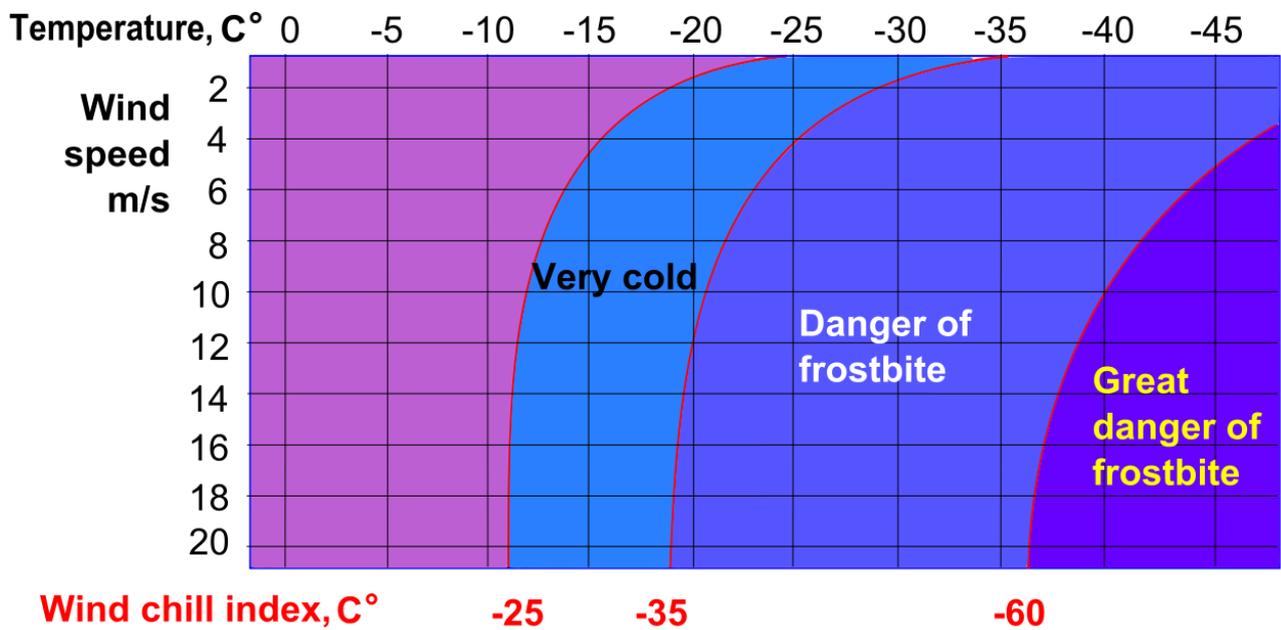
In the Table below the climate data for Station Nord is given.

Climate data for Nord													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	-5 (23)	-5 (23)	-2 (28)	2 (36)	6 (43)	10 (50)	14 (57)	13 (55)	5 (41)	1 (34)	1 (34)	2 (36)	14 (57)
Average high °C (°F)	-27 (-17)	-26 (-15)	-27 (-17)	-18 (0)	-6 (21)	2 (36)	6 (43)	4 (39)	-6 (21)	-18 (0)	-22 (-8)	-24 (-11)	-13.5 (7.7)
Average low °C (°F)	-32 (-26)	-32 (-26)	-33 (-27)	-23 (-9)	-12 (10)	-1 (30)	1 (34)	1 (34)	-10 (14)	-21 (-6)	-27 (-17)	-29 (-20)	-18.2 (-0.7)
Record low °C (°F)	-51 (-60)	-47 (-53)	-46 (-51)	-37 (-35)	-24 (-11)	-10 (14)	-2 (28)	-13 (9)	-30 (-22)	-32 (-26)	-45 (-49)	-42 (-44)	-51 (-60)

Source: Weatherbase ^[2]

The combination of very low temperatures and wind can be very dangerous, and the wind chill factor must be taken in account to avoid frostbite.

WIND CHILL

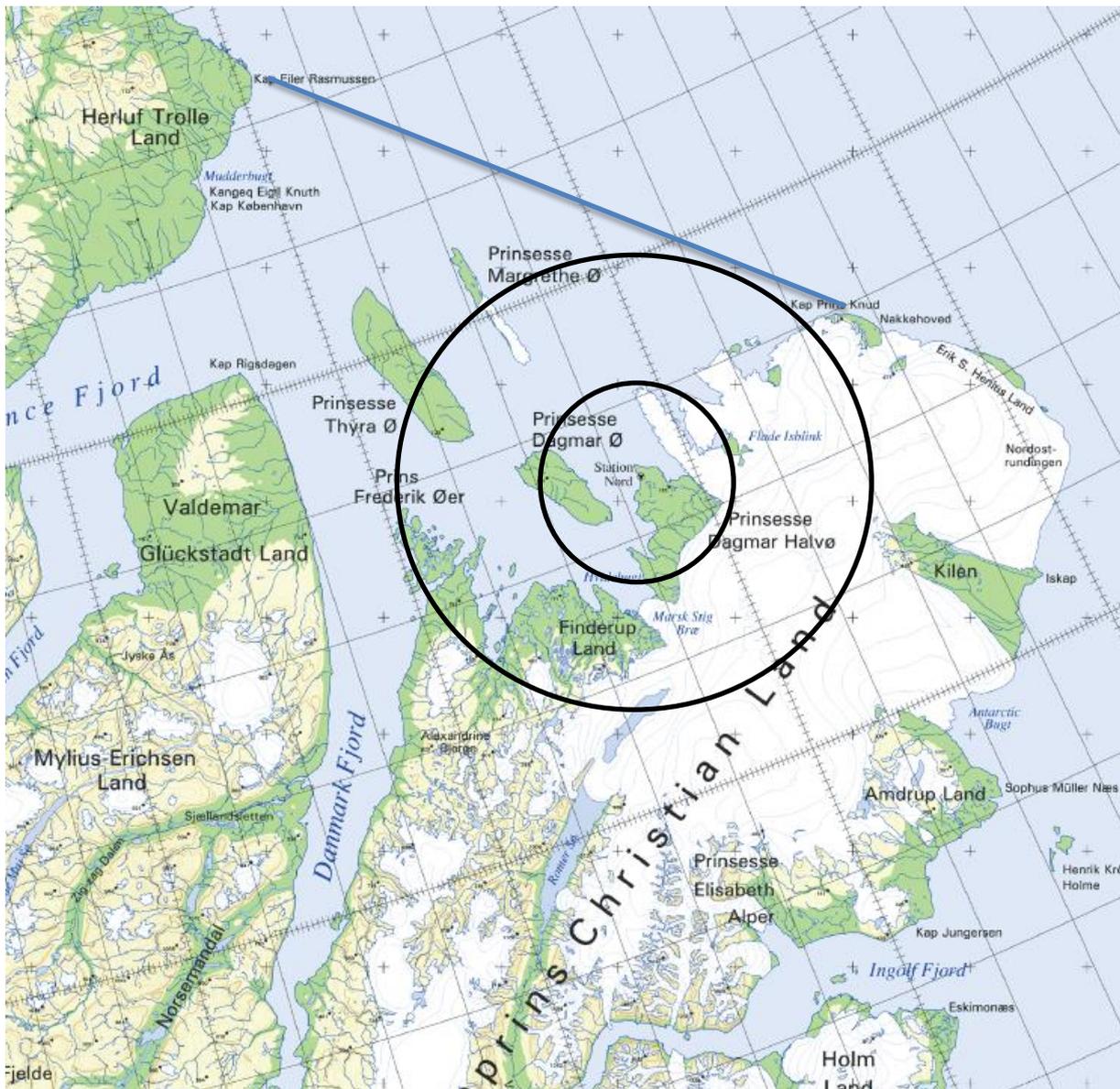


Wind Chill factor illustration from Wikipedia

5 Station Nord – field site



Photo: Egon Frandsen, September 1, 2014



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- The blue line indicates the approximate position of the ice edge in August 2014 according to a satellite image
- Circles on the map are approximately at 20 and 50 km distance from Station Nord

The primary working area will be within the 20 km radius line. For work between 20 and 50 km distance from the station you will need special permission from the VRS/ASP logistics team and the military staff at station Nord.

Working outside the 50 km line is not supported by VRS station or the ASP/VRS logistic team and you have to plan everything on your own. Outside the 50 km circle you will not be rescued by the Station Nord Military Staff in case of an emergency. You will therefore need to wait for assistance by external operators (Search and Rescue). In all cases of SAR emergency you must expect several hours before the rescue team will be able to arrive, due to the remote area, and due to weather it can take days before you can expect any help.

5.1.1.1 Ice conditions 2014 May, 17th



From <http://ocean.dmi.dk/arctic/nord.php>

5.1.1.2 Ice conditions 2014 august, 26th



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From <http://ocean.dmi.dk/arctic/nord.php>

5.2

5.2.1.1 Ice conditions close to Station Nord on 28 August 2014 – Station Nord is in the front of the picture and the sight is towards North

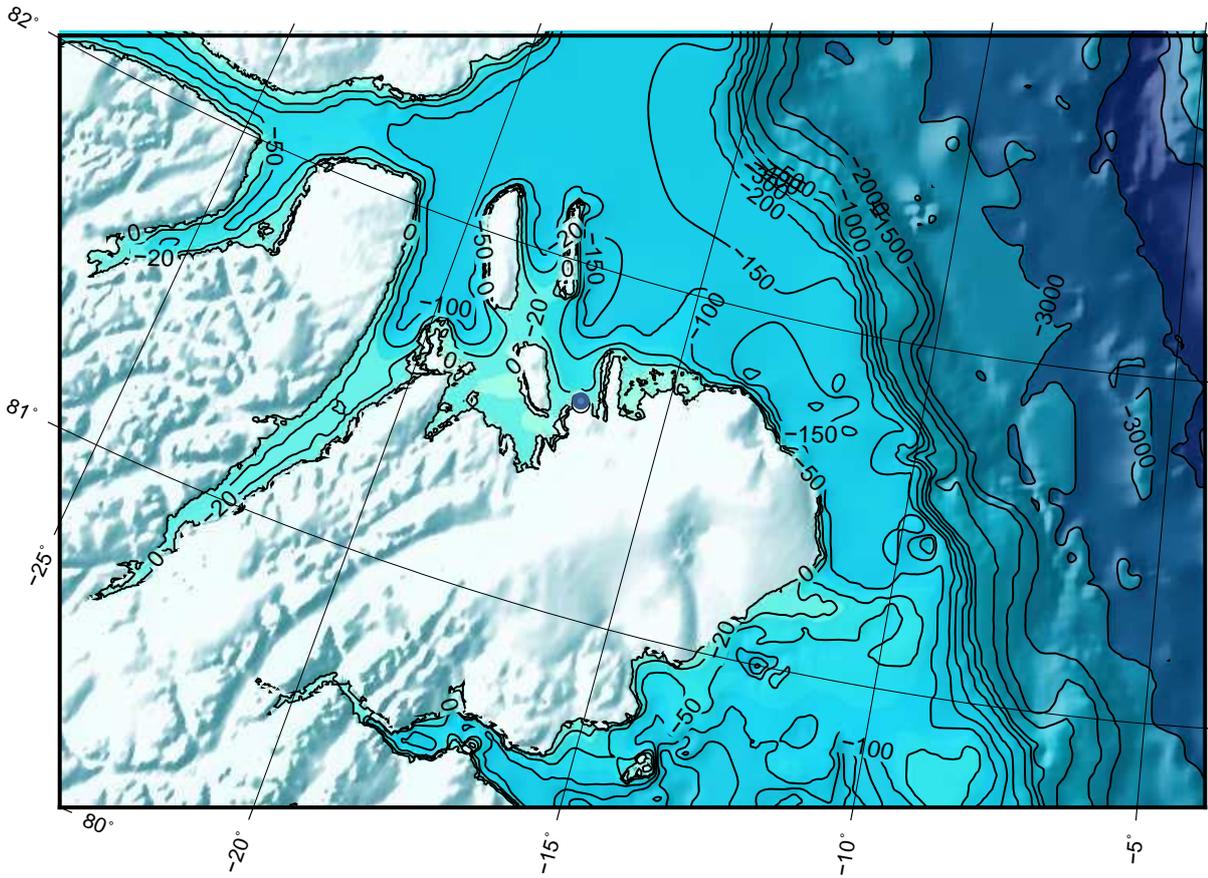




6 Tide

The tide at Station Nord is between **expected to be around 0,8-1,5 meter** depending of the phases of the moon. A tide table will be available in the residential house at the station.

7 Water depths



Section 2

Practical information for going to Villum Research Station (VRS)

8 Access to Station Nord

To access Station Nord you require permission from the Greenlandic authorities and the Danish Military. The administration of this goes through the Villum Research Station secretariat.

If you are going on an ASP project the application will be made by Egon Frandsen, who will ask you for the information requested in appendix A.

Other projects must contact the VRS secretariat for an application form to be filled in and send to the secretariat. Further information is available on the VRS website:

<http://envs.au.dk/en/research/facilities/villumresearchstation/>

The deadline for submission of applications for access in 2015 is on 25 January.

We will follow the plan below, which means that we also need to have the names for each leg at this time:

Leg	Start date on leg	End date on leg	Deadline for filling out application
ASP-1	11 April	2 May	25 January
ASP-2	2 May	23 May	25 January
ASP-3	1 August	22 August	25 January

9 Overview of Projects in Station Nord 2015

Leg	Start date on leg	PI	Project
ASP-1	11 April	Marit Solveig Seidenkrantz	Sediment cores
ASP-1	11 April	Zou Zou Kuzyk	
ASP-1	11 April	Lise Lotte Sørensen	
ASP-1	11 April	Kai Finster	
ASP-1	11 April	Nicolas-Xavier Geilfus	
ASP-1	11 April	Igor Dmitrenko	
ASP-2	11 April	David Barber	
ASP-2	2 May	Erik Jeppesen	
ASP-2	2 May	Lise Lotte Sørensen	
ASP-2	2 May	Brian Sorrell	
ASP-2	2 May	Feiyue Wang	
ASP-2	2 May	Igor Dmitrenko	
ASP-3	2 May	David Barber	
ASP-3	1 August	Signe Normand	
ASP-3	1 August	Lise Lotte	

		Sørensen
ASP-3	1 August	Jens Ehn
ASP-3	1 August	Virginie Galindo
ASP-3	1 August	Virginie Galindo
ASP-3	1 August	Virginie Galindo

10 Courses and training you need to have

Before going to Station Nord you need to have some courses and training on the following issues:

- Valid first aid course – and if possible extra knowledge on first aid in the Arctic
- Shooting course – Ask Emmelia/Egon if you haven't a valid course (Max 2 years old)
- Training on how to work and survive in cold conditions
- Knowledge on how to use snow mobiles, incl. the fundamental use/function/repair (change of sparks, refueling, check oil etc.). Ask Emmelia/Egon if you haven't this course

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11 Visa

If you are not Danish, EU, US or Canadian citizen you may have to apply for Visa to the Schengen area (Norway) and to Greenland. Ask Christina (levisen@biology.au.dk) for more information on the procedure. For Canadian citizens, please contact the CEOS office (Irene.Zhao@ad.umanitoba.ca) for assistance with the timeline and procedures.

12 Insurance

The Greenland Government requires that you have SAR (search and rescue) insurance to get a permission to enter the National Park of North and Northeast Greenland.

If you are currently employed at the Institute of Natural Resources in Nuuk you already have a SAR insurance.

If you are employed at Aarhus University or any other Danish or foreign public institution with self-insurance, you will have to fill out appendix C at the Villum Research Station homepage: <http://envs.au.dk/en/research/facilities/villumresearchstation/>, and include this form in your Station Nord application.

All other visitors to Station Nord need to buy a SAR insurance from an insurance company. Request further information on this from Linda/Emmelia/Egon.

13 Travel to Station Nord

It is only possible to access Station Nord by air with chartered aircrafts.

At the moment we are expecting to fly almost all cargo with the Danish Military in a C-130 Hercules transport aircraft to Station Nord from Aalborg in Denmark. But since the Danish military can not promise to carry everything we need (all transport to Station Nord with the Danish military is on "space available" conditions) we are heading for chartering an Antonov 12 or 26 in February to bring cargo to Station Nord from Aalborg or sending cargo to Svalbard by boat and fly it from there.

The participants in the field campaigns must go with a commercial airline company to Oslo in Norway and continue from there with Scandinavian Airline System or Norwegian to Longyearbyen on Svalbard. In Longyearbyen we will charter a Dornier 228 for the lift from Svalbard to Station Nord (about 2 hours flight)

The runway at Station Nord is a 1,800 m long gravel runway. In a few months during the spring, the runway may however be too soft to allow for especially larger aircrafts to land.

On the map below you can see the routes:



Map from NOAA

13.1 Travel plan for each leg

Leg	Latest arrival in Longyearbyen	Longyearbyen – Station Nord	Field period	Station Nord - Longyearbyen	Earliest out of Svalbard
ASP-1	10 April	611 April, 6 th	3 weeks	2 May	3 May
ASP-2	1 May	2 May	3 weeks	23 May	24 May
ASP-3	31 July	1 August	3 weeks	22 August	23 August

Since we are chartering the Dornier DO228 you are limited in the amount of luggage you can bring to Station Nord. You can bring 20 kg of luggage + 5 kg hand luggage. What you need to bring besides this, must be send ahead as cargo.

Look in the sections below to see what to find at the station and what you need to bring by yourself.

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14 Staying in Station Nord

Once at Station Nord, there will be a mandatory introduction to the station from the staff at the Station Nord and the scientific or logistics leader at Villum Research Station. After the introduction, you will be able to start unpacking your research equipment.

During your stay in Station Nord, there will be a scientific leader to coordinate the different projects and to coordinate with the staff at Station Nord to enable everyone to carry out their projects in a safe manner and positive cooperation.

Leg	Start date on leg	Scientific leader	Logistic leader
ASP-1	11 April		Kunuk Lennert
ASP-2	2 May		Ivali Lennert
ASP-3	1 August		Ivali Lennert

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In the case of bad weather, the scientific leader takes decision on whether or not it is safe to work on the ice or from the airboat/boat.

Prior to the end of your stay in Station Nord, you will have to finish your project two days prior to leaving. The last day of your stay is reserved for packing and labeling your equipment for return (see the section on sending cargo back to DK/Nuuk/Canada).

On the day you are leaving Station Nord, you cannot plan to do anything else other than waiting for the aircraft to arrive with your personal luggage packed and ready to go. It is not possible to give exact time of arrival and departure of the aircraft to take you out of Station Nord.

15 Station fee

While you are in Station Nord your project has to pay a station fee for staying at the station – in 2015 this fee is 1,700 DKK/person/day. This station fee covers:

- Living in the accommodation building or in other buildings at Station Nord
- Use of the safety equipment at the station (signal pistols, rifle's, PLB's, VHF radio's etc.)
- Use of the laboratories.
- Use of electric power and water
- Food – there will be a cook at the military station and you will have to go there for the meals
- Sheets, bedding and towels

16 Personal packing list

You need to bring the following personal luggage to Station Nord:

16.1 Clothing

- Clothing that are versatile, durable and comfortable
- Warm jacket – Canadian Goose or similar
- Warm pants
- Warm sweater or fleece (windblock)
- Gloves, hats, balaclavas and neck warmer
- Warm socks
- Sunglasses

- Boots – warm
- Rubber boots
- Normal clothing and underwear
- Indoor footwear to use inside the residential house (boots are not allowed)
- Mukluks between September and June

16.2 Tickets, papers and good to have

- Tickets to Svalbard
- Passport and Visum – if needed – see section about Visa
- Insurance card
- Credit card – for use on the way to/from Svalbard – you cannot use credit card at Station Nord
Mobile Phone for your travel – cannot be used at Station Nord
- Relevant papers and documents for your project
- Personal computer – Do not turn it on immediately after you have returned from the cold into the warm. It will die due to condensation of moisture on the motherboard. Therefore, wait at least 20 minutes before turning it on.
- Necessary personal toiletries
- Ski goggles
- Sunblock
- Multitool (Victorinox or Leatherman) – good to have but not a must – remember not to bring it in the hand luggage on commercial flights.

16.3 Security clothing

See the section “Safety on Station Nord field station” below

16.4 Things you don't need to bring

- Sleeping bag
- Sheets, bedding
- Towels

Section 3

Information on the Villum Research Station (VRS)

17 Introduction to Villum Research Station

The first day at Villum Research Station, Station Nord, you will need to attend in the general introduction to the station

18 Safety at the Villum Research Station

18.1 At the station

- At the station, there are smoke alarms in all sleeping rooms, in the laboratories and in the living room
- There are fire extinguishers in the living room, in the corridors, in the laboratories and in the storage rooms (water)
- Fire blanket in the kitchen
- In the garage, there are powder fire extinguishers

18.2 In the field

In the Arctic you need to take precautions in relation to climate and wildlife.

Never leave the station area without the following equipment in the team:

- Signal pistol
- Rifle
- GPS
- VHF radio
- Handheld Iridium telephone
- PLB (personal locator) beacon
- Emergency Camp Box

The logistics personal will introduce you to the use of this safety equipment and let you shoot a few shots with the rifle and the signal pistol for learning to know the specific weapon .

Be aware that you are only allowed to shoot animals in self-defense. Any shooting at animals shall be reported to the military staff at Station Nord and a lot of paperwork for explaining that it was self-defense must be done. Only polar bears and muskoxen are dangerous to your safety. However, also avoid encounters with polar foxes since they might be infected with rabies.

18.3 You need to bring

- Survival suit (if you are going to work on the ice outside the Station Nord station)
- Warm clothing or weather appropriate clothing, depending on the time of year
- Portable GPS

18.4 We already have on the station

- Signal pistols (five in total)
- Rifles (five in total)
- VHF radio (five in total)
- Portable Iridium telephones (five in total)

18.5 Weapons

Shortly after arrival, everyone must practice shooting with the signal pistols and rifles to familiarize themselves with the weapons. This is just to get familiar with the specific weapons at the station. Everyone must attend a shooting course before they go to Station Nord.

When you go into the field the rifle must be loaded with bullets in the cartridges, **but the chamber must be empty (Half-load)**. The rifle must be ready to use only by loading before shooting. When you are reentering the station perimeter of Station Nord, your rifle must be emptied and have open chamber to indicate to everyone that it is not ready for shooting.

When not in use, rifles and signal pistol will be kept in a locker by the station staff. When you leave for field work you should therefore ask the station staff for a rifle and immediately after your return to the station, you should deliver your rifle and signal pistol back to the station staff.

The rifles and signal pistol must not be loaded when they are stored in the residential house. When you arrive back from the field you must therefore remove the cartridges and check that no bullets are in the chamber. Then you pull the trigger up in the air outside.

Never bring a loaded weapon inside a buildings.

18.6 GPS

There are a lot of different GPS models, and you need to spend some time to become familiar with your GPS. You need to know how to mark a waypoint, find the waypoint again and track to a waypoint. You also need to know how to find your current position on your GPS. When you arrive at Station Nord you need to mark the station as a waypoint in your GPS to know where to go if you get lost in bad weather. To use your GPS for positioning yourself on a map you need to make sure that the datum used by the GPS is the same as the datum on the map. The default datum on most GPS's is WGS-84 and that works reasonably well with current commercial maps of North and Northeast Greenland. However, do make sure that the datum on your GPS is set correct before using it together with a map.

18.7 VHF

Local communication at Station Nord is by VHF radio on channel 2 as a call up channel. It is possible to use VHF at the station to communicate with people working in a radius of maximum about 15 km from the station. The logistic team will show you how to use the radio during the introduction of the station. The station staff at Villum Research Station will always be listening on the VHF-radio, so if you experience something unexpected, do call them for advice.

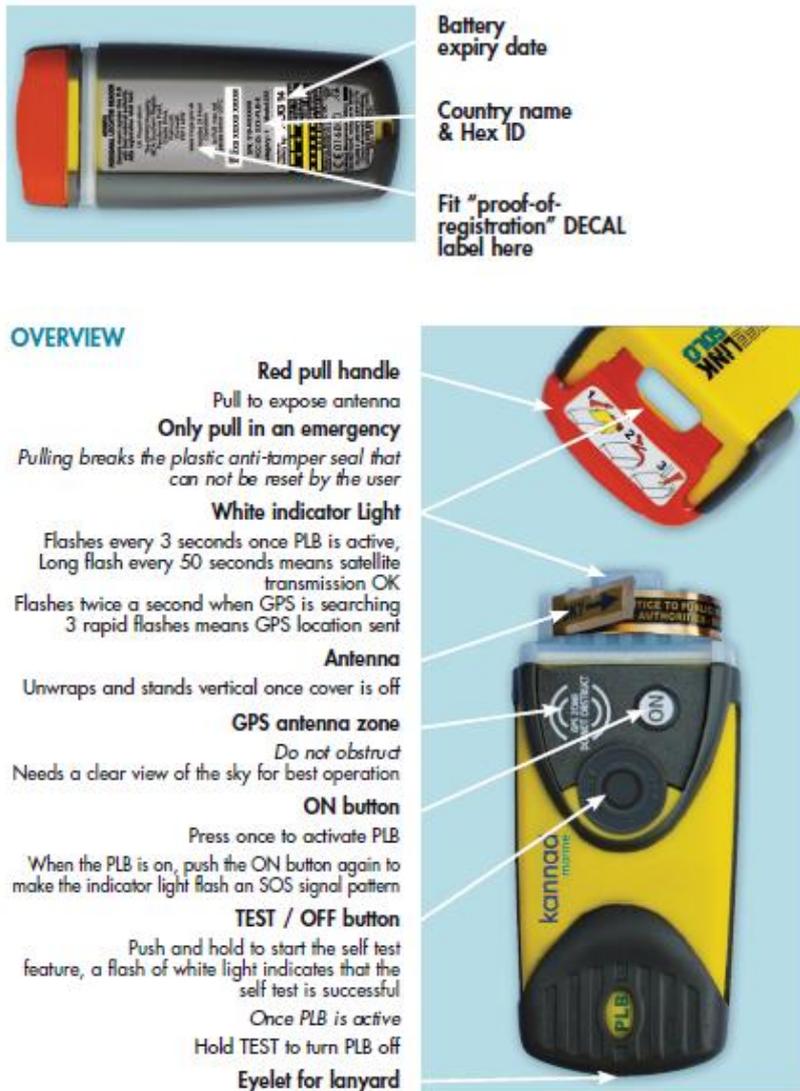
18.8 Iridium - portable

When you are going in the field you need to bring a portable iridium telephone. The logistics team will show you how to use the radio during the introduction of the station.

18.9 PLB

A personal locator beacon (PLB) is a device that once activated automatically will tell your exact position to the Search and Rescue authorities. Once you activate a PLB, the Search and Rescue authorities will start searching for you with the purpose of rescuing you. They will presume that you are in some kind of serious troubles, and they will spend a lot of money on trying to find you and rescue you. Therefore, only use the PLB (in case of an emergency). The alarm will go to an international emergency call center and activate a search and rescue alarm.

Before use, you need to check the PLB for the expiry date of the battery and press the test button to check that it works.



18.10 First aid and medical assistance

Every person arriving in Station Nord must have attended a first aid course. First aid kits are available at the station and further medical assistance can be provided by the military personal. To obtain a SAR insurance, you must confirm to the insurance company that you are in good health. You are allowed the use of personal prescribed medication, which you must bring yourself, and still access the station. You will have to fill out Appendix A on:

18.11 <http://www.asp-net.org/content/2015-station-nord-logistics> Wildlife at Station Nord

At the Station Nord station, and in the surrounding area, you may encounter wildlife. Typically, it is only polar bears you need to be cautious of. However, keep a distance to any wildlife, and notice that also muskoxen and polar foxes also can be dangerous. Security distance to muskoxen and polar fox should be more than 100 meter. If you encounter a polar bear walk slowly and calm away no matter what the distance is.

You are forbidden to shoot any wildlife in N.E. Greenland with the exception of self-defense. Please refer to the books 'Encounter with wildlife in Greenland'

(<http://zackenberg.dk/fileadmin/Resources/DMU/GEM/Zackenberg/pdf/encounters-with-wildlife.pdf>) and

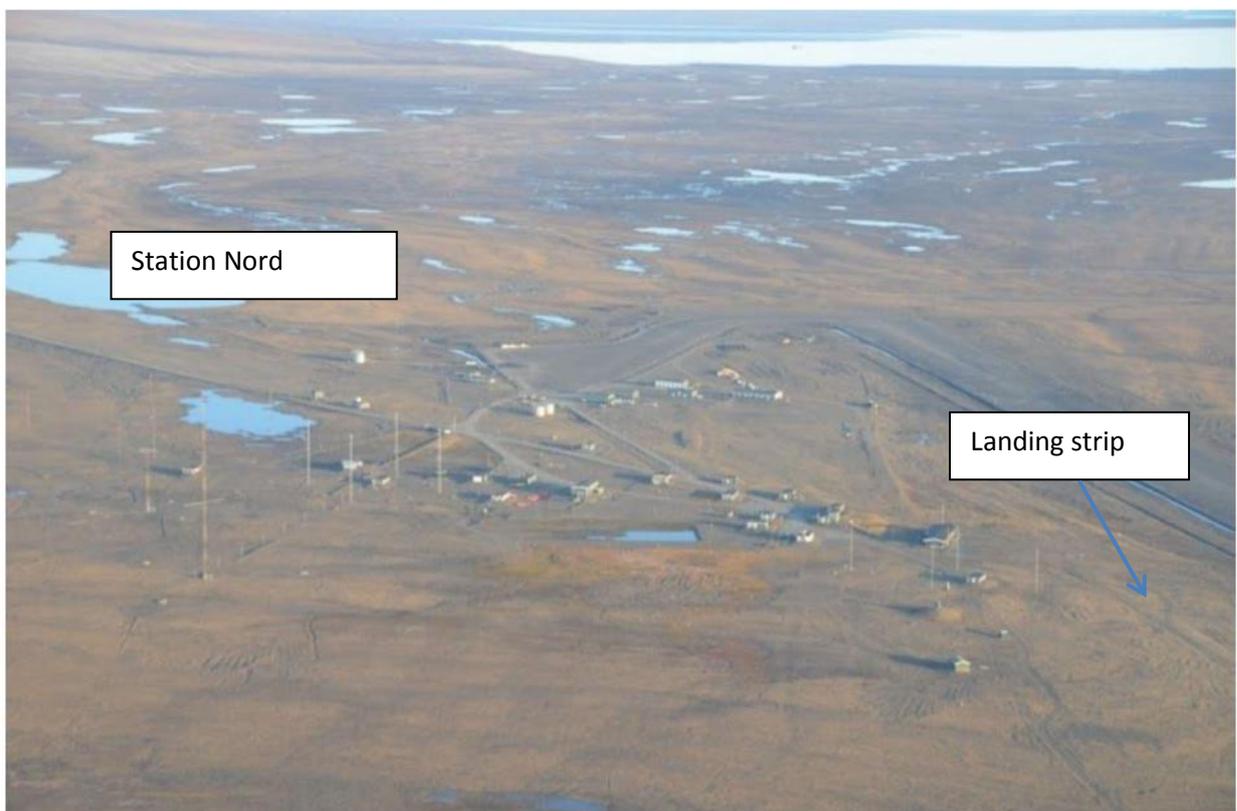
'The handbook. Prevention and control of wildlife damage. Polar bear'

(http://zackenberg.dk/fileadmin/Resources/DMU/GEM/Zackenberg/pdf/polar_bears.pdf) on animals and their behavior, especially the polar bear, the muskoxen and the polar fox.

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19 Station Nord – Military area - guidelines

When you arrive in Station Nord you are entering a military zone and there are rules you need to follow. The military staff is the local authority.



19.1 Local guidelines for stays at Station Nord

- All activities conducted on the station premises must comply with the rules and regulations set by the Station Nord leader (LD)
- Activities outside the station premises require permission from the Station Nord Personal
- When driving on the station premises, vigilance must be exerted at all times toward people and animals. The speed limit is 30 km/h
- Entry to buildings marked "Forsvaret" (Defense) is prohibited

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- Littering is prohibited
- The use of tents throughout the station premises must comply with the rules and regulations set by the LD
- Urinating and defecation are restricted to the toilet facilities
- Walking/driving on or across the runway is prohibited
- Walking/driving on the apron is only allowed when loading/offloading aircrafts
- Smoking is prohibited on the apron, as well as near fuel depots
- Smoking indoor is prohibited
- Cigarette butts shall be disposed in garbage bins
- The Danish defense personnel at Station Nord have police authority throughout the premises and can thus order inappropriate conduct or activities to cease immediately
- At any time, the LD maintains the right to impose additional restrictions on visitors' stay at Station Nord

20 Station Nord welcomes you

20.1 Accommodation in a Staton Nord building

- Please use as little water as possible (water must be transported to building by truck from a lake 2.5 kilometers away)
- At all toilets you will find both a urinal and either freeze or burning toilets. We ask all men to use the urinal, if they only have to urinate.
- There aren't any cleaning personnel at the Station, so everyone is responsible of cleaning and emptying the bags in the freeze toilet. When the toilet bag is full you close it with the brown tape around and an extra plastic bag around. Dispose it in the bucket located outside the building. When you are finished you'll put two new plastic bags in the freezing toilet. The freezing toilet must be emptied before you leave the area.
- Please leave outdoor footwear in the entrance hall before entering buildings.
- Please divide all garbage as burnable material ("brændbart"), non-burnable material, metal and glass. If disposing lager amount of garbage, as for example after cleaning up after an expedition, use large barrels. Sort and clean garbage for possible food items, as this could mess up the aircraft bringing the garbage out of Station Nord

20.2 Mealtimes

Weekdays	Weekdays	Saturday	Sunday
Breakfast	8:00 am	9:00 am	Self-service
Lunch	1:00 pm	1:30 pm	Self-service
Dinner	6:30 pm	7:00 pm	6:00 pm

Sunday breakfast and lunch is self-service. The cook has prepared some dishes which are in the refrigerator in the kitchen.

Everyone must show up on time for the meals – if you are unable to be at the meal in due time, you must inform the cook well in advance.

Please notice that wearing a tie is mandatory for the Sunday dinner at Station Nord (old tradition –taken serious)

20.3 Smoking

Smoking is not allowed inside any building at Station Nord.

Outdoor, the cigarette butts must be disposed in the barrels marking the roads. It is illegal to dispose cigarette butts on the ground. Dogs might eat anything they find on the ground and they will get very sick by eating cigarette butts. In general, if you find garbage on the ground please pick it up and bring it to the appropriate garbage containers.

20.4 Travel and whereabouts

- You are not allowed to enter the building at the Military Part of Station Nord without permission, except the canteen building and the bar building.
- ‘Building 3’ is the home of the station personnel – please respect their privacy!
- If you wish to move outside the perimeter of Station Nord, please contact the base commander for permission.

20.5 Vehicles

If you need a vehicle, please contact the military station personnel. All vehicles and machinery is to be returned cleaned and re-fueled. Please park the vehicle – with the key staying in the car – outside the workshop. Remember to turn off the radio and the main switch. Please drive carefully. Injuries and accidents – regardless how minor - is to be reported to the base commander. Driving on the runway is prohibited.

20.6 Work and injuries

While working at Station Nord please use common sense. Nearest hospital is far away and safety is always first priority. In case you need pharmaceuticals or other medical assistance, contact the military station personnel or the personnel at Villum Research Station.

20.7 Recreation

In building 35 – the bar – there is an opportunity to relax, watch a movie, play pool, cards, dart, ibary etc. The bar is open at all times and operated on a self-service basis. Beer, wine, sparkling water and licor (2cl) cost 3 US dollar each. Ccoffee and tea is for free. Please record your expenses in the bar notebook and you will be billed by the end of your stay

20.8 E-mail

It is generally not possible to send e-mails from the military premises when staying at Station Nord. The military e-mail systems are only for operational purposes. As scientist you can send e-mails from the scientific station – see the section about iridium.

20.9 Phone

There is an iridium satellite phone available at the military station. Please contact the station personnel if you wish to make a phone call. The rate pr. minute is 3 US dollar. Villum Research Station also provides iridium phones. The price per minute for use of the Villum Research Station telephone is 20 DKK per minute.

20.10 Gift shop

If you wish to purchase Station Nord merchandise from the gift shop, please contact one from the military station personnel

20.11 Departure

Please remove the sheets and place them folded on top end of the bed. Empty your trash and close doors and window. Tidy up and clean your room before leaving.

20.12 Questions

If you have any kind of questions please contact the station personnel.

21 Villum Research Station (VRS) guidelines

Beside the guidelines for the Military part of Station Nord there are some additional guidelines for the VRS.

22 Practical information

22.1 General information

- Don't leave anything outside. There are a few dogs who might eat everything being left outside, and things can easily blow away very sudden. We do not want things to blow around at the station area or blow away.
- No outdoor footwear is allowed inside the residential house – bring indoor footwear for working in labs.
- Smoking is not allowed inside any building at the station. You can smoke outside, but then you must place the butts in the bins for this purpose.
- Be aware of polar bears. Look around when you leave a building to ensure that there are not polar bear around – well it does not happen that often. If you see a polar bear - at the station area or in the field – you must immediately warn everyone by VHF radio. Observe the polar bear until it leaves the area.
- Musk ox is not so common in the Station Nord area, but if you meet one, you must keep distance of at least 100 meters.
- Be aware that you are not allowed to bring anything out of the National Park of North and Northeast Greenland without permission. If you bring something out without permission your items might be confiscated and you will receive a note.

22.2 The Kitchen

You are free to use the kitchen for social or private use. You just have to clean the kitchen after use and run the dishwasher

22.3 Washing machine and tumble drier

In the bath room there is a washing machine and a tumble drier. You are free to use it, but please be aware of the use of power and water.

When you leave the station you must remove the linens from your bed and leave it in front of the washing machine. Then the next visitors at the station have to wash it. Normally, the logistics team will do the washing.

22.4 Garbage

All garbage must be divided into metal, glass, non-burnable and burnable garbage (concerning chemical and biological waste – see separate section). When the bin inside the house is full, you must empty it into the ones outside the house. During the introduction to the station at your arrival, you will be informed more specifically.

22.5 Cleaning

You must participate in the work to keep the house nice and clean so everyone can feel comfortable. You need to vacuum the floors every second day and keep the kitchen, bathroom and toilets clean every day.

When leaving the house you must:

- Vacuum clean and wash all floors
- Wipe with a damp cloth on all surfaces
- Refrigerator must be emptied and cleaned
- Micro wave oven must be cleaned
- Oven in the kitchen must be cleaned
- Bedding and linen must be placed in the laundry basket in front of the washing machine
- Run the dishwasher and empty it
- All bins shall be emptied
- Clean toilet and bathrooms.

22.6 Water

The military staff at Station Nord provides the VRS station with water, which means that the same rules are used as for the Military station, i.e. **use as little water as possible**.

22.7 Electrical power

Electrical power is very expensive at Station Nord (all fuel for the generator is airlifted into Station Nord). Therefore be aware of your consumption of electrical power. Turn off the light when you leave a room. Keep the temperature in rooms not in use at a minimum. Do not leave any machinery run without being in use.

22.8 Heating

Since heating is relatively expensive, we kindly ask you to keep windows and doors closed, except for during short ventilation.

22.9 Fuel

The ASP-projects have their own fuel for the airboat. All others use of fuel is from the VRS station. Ask the logistic team what to do.

22.10 Accommodation

All accommodation on the VRS station will be in double rooms. As far as possible we will accommodate only people knowing each other in the same room. As far as possible we will make sure that only people of the same sex will be accommodated together.

No outdoor footwear is allowed inside the residential house – bring indoor footwear for working in labs.

The toilets at the VRS station is - More to come...



23 Electrical power

The power supply at the station is 230V, 50Hz AC power. The plugs are Danish standard plugs



With ground



or without ground



24 Communication to/from VRS

It is not possible to use your normal mobile phone at Station Nord. But, it is possible to reach the world outside by iridium telephone. VRS have portable iridium telephones to carry in the field for safety and an Open Port iridium system allowing for voice communication and sending and receiving e-mails. You are not able to check your normal home e-mail at the station, but the e-mail address vrs@onsatmail.com is the one to use for all communication to/from VRS. It is very expensive (and slow) to send and receive e-mails on an iridium telephone, and as a result there is a limit on the mail size on 1MB. Mails above this size will be rejected.

The price for sending and receiving mails will be 2DKK/mail – up to one page and 10DKK/KB attachment (you are only allowed to send attached file by agreement from the scientific or logistic leader). The price for using the iridium to call home will be 2 US\$/minute.

The VRS logistics staff at the VRS station will show you how the telephone and mailing system works, and there will be a list to note when you have used the iridium system – see appendix 4.

The iridium numbers to VRS and contact information to other stations along the east coast of Greenland and other relevant contacts will also be included in appendix 4

Iridium

For communication to the World outside the station area we have an iridium system. For safety reasons, we always bring portable iridium in the field. There are five portable iridium telephones at the station and an open port iridium system at the VRS station.

24.1 E-mail

It is possible to send and receive text emails on the open port iridium system at the scientific station. Look into the section above.

25 The Villum Research station

Villum Research station has essentially three buildings – a main building, a garage and a house for atmospheric chemistry observations (situated two kilometers outside Station Nord) . Beside these building, the military station consists of several buildings of which at least the accommodation buildings also might be used by scientists visiting Station Nord.

26 Garage

The garage is approximately 150 square meters and contains storage shelves and a workshop for general use. Always bring back the tools you borrow and keep the place clean and in order. There will be a list where you can notice by your name, if you have borrowed some equipment.

The garage is also used for winter storage of equipment belonging to the station, ATV's, snow mobiles etc.



The garage as seen from the outside



Inside the garage



There is a small storage room inside the garage



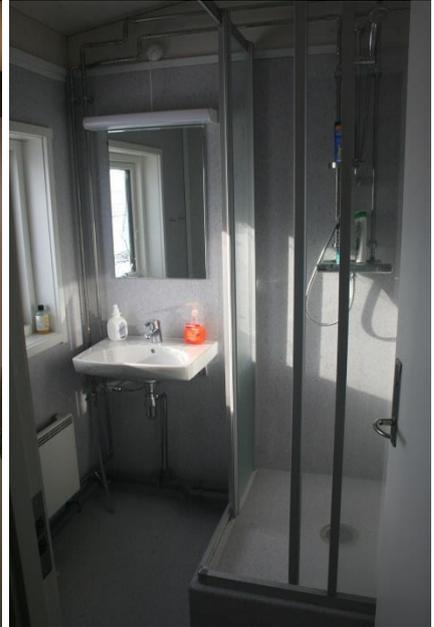
The workshop in the garage

27 Residential house – main building

In the main building, there are four laboratories, a storage room for household items, seven double bedrooms, bathrooms, toilet and a combined living room and kitchen. Further, there is a small apartment for the logistic personnel and a station office.

Beside of this there are technical rooms, only to be entered by station staff. See the drawing below – labels are in Danish!





While staying at VRS you are expected to take turns in doing the dish washing, cleaning and other practical things.

28 Laboratory facilities

There are four laboratories at the station – a “Dirty” lab, a chemistry lab, a biology lab and a clean lab.

“Dirty” lab:

In the “dirty” lab you can work with samples such as seal, fish and other larger biological specimens, soil, sediment and rock samples. The room is equipped with a heating oven for drying samples and a freezer (-20°C) for storing samples under dark and temperature controlled conditions. The laboratory has a large sink with tap water and access to ion exchanged water. Entrance to the laboratory is through a large door to the outside, which permits samples to be carried directly into the laboratory



Equipment in the “dirty lab”:

- Freezer (-18°C), approx. 125 liter
- Heating oven
- Laboratory dish washer



Chemistry lab:

The second laboratory is a chemistry lab where e.g. samples can be extracted and equipment prepared for use.

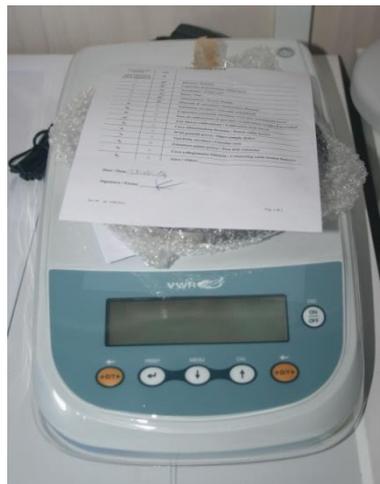




- Balance



220 g, 4 digits



Max 4200 g, 2 digits

- Milli-Q water
- Pump for filtration



- Fume hood

Biology lab:

The biology lab will be dedicated to studies sensitive to contamination.



- Ultrasonic bath
- Sterilizer
- LAF-bench
- Refrigerator
- Well-equipped with normal lab equipment



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Version 2015

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Clean lab:

There will be limited access to the clean lab. The entrance will be through an air lock. This laboratory will be dedicated to “clean” biological and microbiological experimental work.



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28.1 Other Equipment

- Battery charger 230V -> 12V (Exide 12/7) – For batteries on 1-150AH (VRS – 5)
- Batteries, Gel, 110 AH (Exide ES1200) (VRS – 10)
- Bandsaw, Stainless Steel (VRS - 1)

BandSaw	SE 165
Blade	1650 mm
Cutting Capacity	240mmx190mm
HP	1,5
Electrical	400V



29 Field equipment

There is some standard field equipment at the station. **Field equipment on the VRS station 2015:**

- Romerloth, 80 mm cores (GCRC – 1)
- Niskin water sampler, 5 liters (VRS - 5)
- Kovac icecore system (10 cm) (VRS – 1 + GCRC -1)
- Kovac icecore system (6 cm) (GCRC - 2)
- Auger (2,5 cm), manual (GCRC – 1)
- Auger (25 cm), engine (VRC - 2)
- Tripod (VRS – 1 + GCRC - 1)
- Generator 2000 W Honda (VRS - 3) 12V and 230V output
- Arctic tent (CEOS - 1)
- Kajak core sampler 55mm cores (VRS – 1)

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- Triangular dredge 55x55x55 cm (VRS - 1)
- Wp2 Plankton net 42µm, 57cm in diameter (VRS - 2)
- Wp2 Plankton net 200µm, 57 cm in diameter (VRS - 2)
- Van Veen Grap 250 cm², (VRS - 1)



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30 Local transportation – ATV, Airboat and Skidoo

30.1 Transport at the station



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ATV (VRS - 3)



Skidoo (VRS - 5)



Airboat (ASP - 1)

Zodiac boat (VRS – 2)

Section 4

Cargo

31 Equipment to Station Nord

You can only send cargo to Station Nord by air.

31.1 Equipement send to Station Nord by air

There is no fixed deadline on sending cargo by air to Station Nord. However, due to inflexibility of cargo on the planes to Station Nord, your cargo must be in DK no later than 31 January 2015. If you are going to Station Nord on an ASP project you must send it to:

Aarhus University
Arctic Research Center (ARC)
Dept. of Bioscience
Vejlshøvej 25
DK-8600 Silkeborg
Denmark
Att: Egon Frandsen

If you are going to Station Nord on another project than an ASP project you must contact the Villum Research Station secretary to get information on where to send your cargo.

Procedure – ASP projects

Contact Emmelia Wiley on e-mail Emmelia.Wiley@umanitoba.ca (if you are from CEOS, Winnipeg) or Egon Frandsen on email erf@bios.au.dk (if you are from Nuuk or DK). You must send a list of of the cargo items you want to send using the “List of cargo for Station Nord” in Appendix 1.

Appendix 1 must be send by mail to Emmelia Wiley Emmelia.Wiley@umanitoba.ca or Egon Frandsen erf@bios.au.dk prior to sending cargo to Station Nord:

- Page 1-2 in Appendix 1 must be filled out prior to sending cargo to Station Nord
 - Do not pack any boxes in fiberboard (will not withstand the transport to Greenland)
 - Dangerous goods are often packed in fiberboard boxes. They are UN-boxes and able to withstand rain for several hours. But it would still be a good idea to have plastic/wood/metal boxes and then labeled with “Overpack” according to the IATA rules
 -

Save Appendix 1 on your computer and send the list to Emmelia Wiley

Emmelia.Wiley@umanitoba.ca or Egon Frandsen erf@bios.au.dk. It is very important that the weights and volumes indicated are correct because these values are used for loading the aircraft with the possible weight with respect to payload and space.

- You will receive labels to your boxes listed in Appendix 1, with a unique number (so we are able to track every single box to Station Nord).
- Attach the labels to each boxes
- Return any transport document for the transportation to Emmelia Wiley Emmelia.Wiley@umanitoba.ca or Egon Frandsen erf@bios.au.dk with AWB number or tracking number from the shipping company

- Page 3 in Appendix 1 is the Pro forma invoice for your cargo – will fill out almost automatically when you fill in page 1-2 in the appendix 1.

Deadlines for delivery of cargo going by air to Station Nord in 2015 are given in the table below

Deadline on cargo by Danish military:

Leg	Start date on leg	Deadline sending from DK	
1 - STN	11 April	21 January	
2 - STN	2 May	24 February	
3 – STN	3 August	24 February	Maybe later – more info later

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Deadline on cargo by ship to Svalbard and by air to STN:

Leg	Start date on leg	Deadline sending from DK	Deadline sending from Canada
1 - STN	11 April, 6 th	24 February	1 February – Expected, contact Emmelia
2 - STN	2 May	17 March	24 February – Expected, contact Emmelia
3 – STN	1 August	15 June	1 June – Expected, contact Emmelia

Deadline on cargo by air to Svalbard and by air to STN:

Leg	Start date on leg	Deadline sending from DK	Deadline sending from Canada
1 - STN	11 April	10 March	1 March – Expected, contact Emmelia
2 - STN	2 May	30 March	20 March – Expected, contact Emmelia
3 – STN	1 August	1 July	15 June – Expected, contact Emmelia

31.2 Dangerous goods

If any of the cargo to Station Nord is classified as dangerous goods, you have to fill out dangerous goods shipping papers and pack according to the IATA 56th edition (2015) guidelines for the dangerous goods you have. This must be done by someone with the authority to do so. Please contact Egon (DK) or Emmelia (CA) for more information.

31.3 Lithium Batteries

Lithium batteries are dangerous goods. Please contact Egon or Emmelia if you want to send Lithium batteries. Be aware that lithium batteries marked with CAO (Cargo Aircraft Only) cannot be transported to Station Nord, because there are no flights with cargo only. Very often your lithium batteries can be packed

different so they are allowed on passenger flights. From 2015, All Lithium **metal** batteries are prohibited on passenger flights.

31.4 Biological resources

You are not allowed to transport any rocks, water, ice or biological samples out of Greenland without permission. Fortunately, it is easy to get the permission. You need to fill in the application in appendix 3A (Example in Appendix 3B and licence in Appendix 3C) and send it to Camilla Bruun Djarnis cabd@nanog.gl in the Greenland Government with cc to erf@bios.au.dk. You must include this permission when transporting your samples. Otherwise, you run the risk that your samples will be confiscated when you leave Greenland, and that you will be fined. Consult Egon (ASP Projects) or the Villum Research Station Secretariat (other projects) if more information is needed.

31.5 Packing and labeling

You must:

- Pack you equipment in boxes (not Fibreboard boxes)
- Dangerous goods must be packed according to the IATA rules. If you have any cargo that needs the CAO label (Cargo Aircraft Only), you must contact Egon (ASP projects) because the space on cargo flights is limited, so we have to coordinate carefully.
- Attach the label you have got from Egon/Emmelia (ASP-projects)
- Finish the pro forma invoice in Appendix 1, and handle it to the shipping company and to Egon/Emmelia (ASP-Projects)



32 Shipping cargo back to DK/Nuuk/Canada

Please download appendix 2 to your computer before you go to Station Nord – you will not be able to download it at the Station Nord.

32.1 Shipping by air

Cargo must be labeled with the return address and mode of transportation in appendix 2 (whether it is meant for shipment by air or a combination of air and ship transport). You must:

- pack you equipment in boxes (each box weighing below 50 kg)
- label the box with the label in Appendix 2 (where to send the equipment)
- finish the pro forma invoice in Appendix 2 for your cargo

When Appendix 2 is filled out you must send it to Egon (erf@bios.au.dk). All cargo will go to DK from Station Nord. From DK it will be distributed to the different receivers.

Section 5 - Appendix

33 Appendix 1 - Cargo list

Package number	Type of Packing	Description of content	Weight (kg)	Volume (m ³)	Value (CAD/DKK)	UN – make DG document	Keep Frozen		Keep refrigerated		DO NOT FREEZE	Latest arrival at field site	Others - Specify
							Yes	No	Yes	No			
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
Total Packages:			Total (kg):	Total (m³):	Total Value:								

34 Appendix 2 – Cargo label

	<h1 style="text-align: center;">34.1 Cargo label for Station Nord</h1>	
Consignee:	Shipper:	
In transit:	Contact: Phone: Email:	
	Date:	
	Signature, and name of shipper:	
Custom Broker:	Package Number:	Weight (kg):
Field Site: <h1 style="font-size: 48px; margin: 0;">STN</h1>	Latest Arrival: <h1 style="font-size: 48px; margin: 0;">April 6</h1>	
Dangerous Goods: Yes <input type="checkbox"/> No <input type="checkbox"/> UN Number:	Additional handling Information: <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>Keep Frozen</p>  </div> <div style="text-align: center;"> <p>Keep refrigerated</p>  </div> <div style="text-align: center;"> <p>DO NOT FREEZE</p>  </div> </div>	