



# **Archaeological Surveys in the West Greenland Inland, summer 2009, in Advance of Proposed Development of Hydroelectric Power.**

- Report prepared for ALCOA
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by

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**Nunatta Katersugaasivia Allagaateqaarfiallu**

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# **Report on archaeological surveys undertaken for ALCOA/Greenland Self-Government in Advance of Proposed Development of Hydroelectric Power in summer of 2009**

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*Front-page photo:* Stone marking a river crossing between Quantum Lake and Ujaraannaq. Site no. 66V2-III-192

## Preface

In the summer of 2009 the archaeological surveys conducted by the Greenland National Museum (NKA) were concentrated on the transmission lines from power stations at Kangerlussuatsiaq (7e) and Ujarassuit Paavat (6g) to the smelter site on Maniitsoq Island and construction areas for dams at both hydro-lakes e.g. Tasersiaq (North Lake) and Tarsartuup Tasersua (South Lakes). Along the transmission lines the most promising areas for finding cultural remains were surveyed by foot and the remaining line was surveyed from a helicopter.

This report on the 2009 archaeological reconnaissance does not give a thorough description on the culture historical background for the study areas, as the description in the report based on the 2007 surveys is considered applicable also to the new areas - except for the skerries at Maniitsoq and the island of Maniitsoq. The island of Maniitsoq and the archipelago east to it was and is mainly tied to the use of marine resources. The area outside the town is today mainly used for recreational purposes, as the survey team registered a number of cabins on the skerries.

The inland between Kangerlussuatsiaq and the southern hydro lakes (6g) has never been surveyed by archaeologists before. The northernmost area comprises Nunatarsuaq and the peninsula that forms the northern boundary of the famous Majoqqaq River – the river constitutes the route to the inland at the icecap where especially people from Maniitsoq sailed to the large caribou hunting grounds. Petersen (1970) wrote about the use of the river and the hunting in the area in the 1950-ies. The peninsula along the northern boundary of the Majoqqaq River is not mentioned as a hunting area in the interviews conducted by the NKA in Maniitsoq last winter. Due to lack of knowledge about the area it is considered abandoned before living memory. However the field survey made it clear, that it de facto is a former hunting area as documented by the many hunting structures found like cairns, caches, shooting blinds, shelters, and hunter's beds. The structures also indicate that summer hunting camps are likely to be found – and probably at the lakes in the interior of the peninsula.

In general the structures found at Nunatarsuaq and on the peninsula north of Majoqqaq are not considered to conflict with the planned transmission line. If some of the poles must be positioned on cultural sites or inside the 20 meter protection boundary, the situation must be negotiated.

Maps and prospects provided by ALCOA showing routes for the transmission lines contained some photos of and few positions for pole locations. Due to the nature of the map the lines indicating the route probably cover a band of 100+ meters. For these reasons the actual route of the field survey may at some places have missed the actual position of the poles.

Aerial surveys were chosen on part of the transmission lines because surveys on foot would demand too much time and energy compared to the possible outcome. During the aerial surveys the team did not discover new sites, which is not a surprise, as cultural remains built from materials available in the immediate surroundings of a site are not easily discerned from the landscape – especially from a helicopter.

As stated several times before in the communication with ALCOA the Norse site *Anavik* is situated in the area for the planned southern power station at the bottom of Ujarassuit Paavat. This is most likely in conflict with the construction plans.

Heights of sites were measured from sea level with GPS and are proxy data and not accurate.

The 2009 archaeological survey team was: Pauline Knudsen (archaeologist), Fredrik Larsen (museum-technician), Mikkel Myrup (curator), and Michael Nielsen (undergraduate student). Myrup took part in the survey from August 9<sup>th</sup> to 17<sup>th</sup> and replaced by Nielsen on the survey from August 18<sup>th</sup> to 26<sup>th</sup>.

On the survey in Maniitsoq area the head of Maniitsoq Museum Tea Dahl Christensen was part of the survey team. Emlen Meyers, archaeologist from ERM (Environmental Resources Management), joined the survey team August 28<sup>th</sup> - 29<sup>th</sup>.

### Summary of recorded features

Type of feature	numbers
<i>Thule culture</i>	
Tent house	7
Tent foundation	3
Tent ring	1
Rock shelter	11
Hunter's bed	8
Fireplace	3
Cache	9
Cairn system	2
Shooting blind	31
Cairn	4
Fox trap	2
<i>Paleo-Eskimo culture</i>	
Saqqaq culture	2
<i>Norse culture</i>	7
<i>Other</i>	1
<b>Total</b>	<b>91</b>

A new type of dwelling feature for this area was recorded during this season: the tent foundation. It is known from fjord and coastal sites, but was for the first time found in the survey areas for the aluminium project.

## Transmission Line at Nunatarsuaq

August 9<sup>th</sup>: distribution of food and equipment on the planned survey route and aerial survey on the proposed transmission line between Majoqqap Nuussua and Isortoq. The transmission line along the southernmost part of Kangerlussuatsiaq was also surveyed from the air.

Aerial surveys did not yield any results. As the transmission lines in these parts of the route mainly run through high latitudes the chances of finding cultural remains are not likely because activities in these areas normally would be tied to lower latitudes in the fjords.

August 10<sup>th</sup>: survey started at Nunatarsuaq a little south of the end of Kangerlussuatsiaq.

### Recordings

**65V2-0IV-007:** Hunter's bed build of more than head-sized stones as a semicircle against an angle shaped bedrock. The vegetation inside the structure is lush. Dim.: Width: 2,4 m, length: 1,8 m.

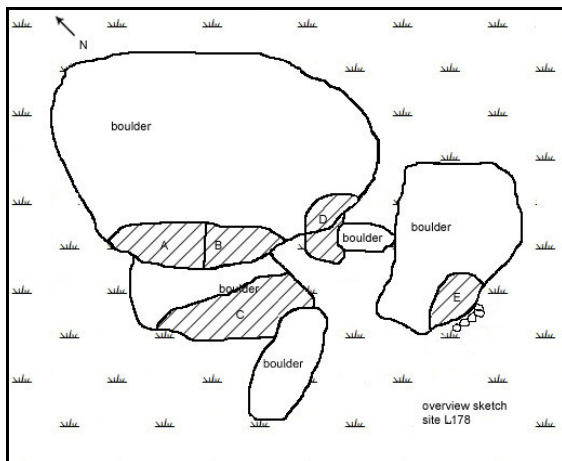
Position: N65° 52.472' / W051° 38.560' Approx. height: 525 m.

Photo: DSC 4114. Picture is taken from S.

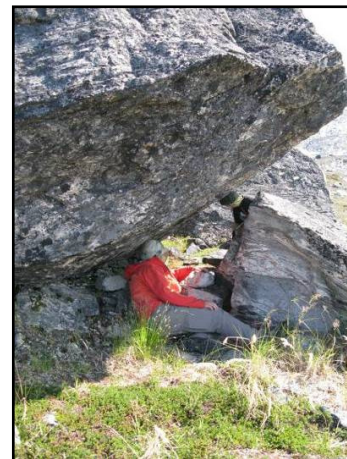
**65V2-0IV-008:** Complex of five rock shelters between and around a group of boulders. Shelters A and B are build in continuation of each other under the overhang on the SW-side of the biggest boulder and are separated by a row of big stones. Shelter A is paved with flagstones. Shelter C is under the overhang on the SW-side of the boulder constituting the SW wall of shelters A and B. Shelter D is partly under and outside the overhang on the S-side of the biggest boulder. Shelter E is partly under and outside the overhang on the S-side of the boulder to SE. Part of the shelter outside the overhang is outlined by a row of head-sized and bigger stones. Dim.: A: 2 x 1.2 m; B: 2.5 x 2 m; C: 1.6 x 1.5 m; D: 3 x 0.9 m and E: 1.5 x 2 m.

Location: N65°52.147' / W051°38.092'. Approximately height: 485 m.

Photos: ALCOA 2009/8: Shelter E from SE, ALCOA 2009/ 9 Shelter A and B from W and ALCOA 2009/10: Shelter A and B from W.



**Fig. 1:** Group of five rock shelters between and around a cluster of five fallen rocks. Site no. 65V2-0IV-008



**Fig. 2:** Shelter A.  
Site no: 65V2-0IV-008



**65V2-0IV-009:** Settlement with 3 tent foundations, 2 tent rings, 3 caches, 3 shooting blinds and a walled outlook or cache. The settlement is located on the southern part of a wide valley oriented E to W. In the central part of the valley, north of the settlement, runs an area filled with boulders, widening just NW to the settlement.

The structures at the settlement probably indicates three phases, where D and F are the youngest and probably not more than 100 years old; E is intermediate and probably from the historic period, while B,C, H, I, J belong to the oldest phase and probably from the Thule culture.

The term “tent foundation” has not been used in previous records as this type has not been found before. The foundations are not just rings of stones as known from the ordinary tent rings and they do not have a wall like the ordinary tent houses, but are something in between. The area where the dwellings are situated is overgrown with low vegetation of lichens, heather and moss.

#### Structure

A: Cache built against the SE side of a big rock. Dim.: 1 x 2 m

B: Unclear structure; probably a tent ring; built against some boulders. Dia.: 2 m.

C: Unclear structure; probably a tent ring.

D: Tent foundation with sleeping platform, lowered floor in front of platform, benches on each side. The SE-bench is paved with flagstones. A cupboard box is built into the wall above the SE bench. Entrance in the center of the wall to the S. The foundation is built mainly of larger than head-sized stones - also the front edge of the sleeping platform. Two lead-bullets and two small pieces of metal inside the structure. At and a little away from the structure two corroded tin cans were found. Dim.: 3.7 x 3,9 m.

E: Circular tent foundation built against a large rock on the NE side of structure. Oblong (approx. 2 meters) depression in the middle of the structure from the rock. Opening in wall to SW. Dia.: 4 m.

F: Tent foundation with sleeping platform and bench to the SW side of the platform. Behind the bench a cupboard box of stones is built into the wall. The area in the SE corner is paved with flagstones. Entrance in the center of the S wall shielded by a niche with an opening to the W. A hearth is built inside the niche to the S wall. Dim.: Main room: 3 x 3.5 m; niche: 2,2 x 1.3 m.

G: Cache built onto the S side of a big rock. Dim.: 1 x 1.5 m.

H: Shooting blind built of stones on top of a rock.

I: Shooting blind built of two courses on a rock.

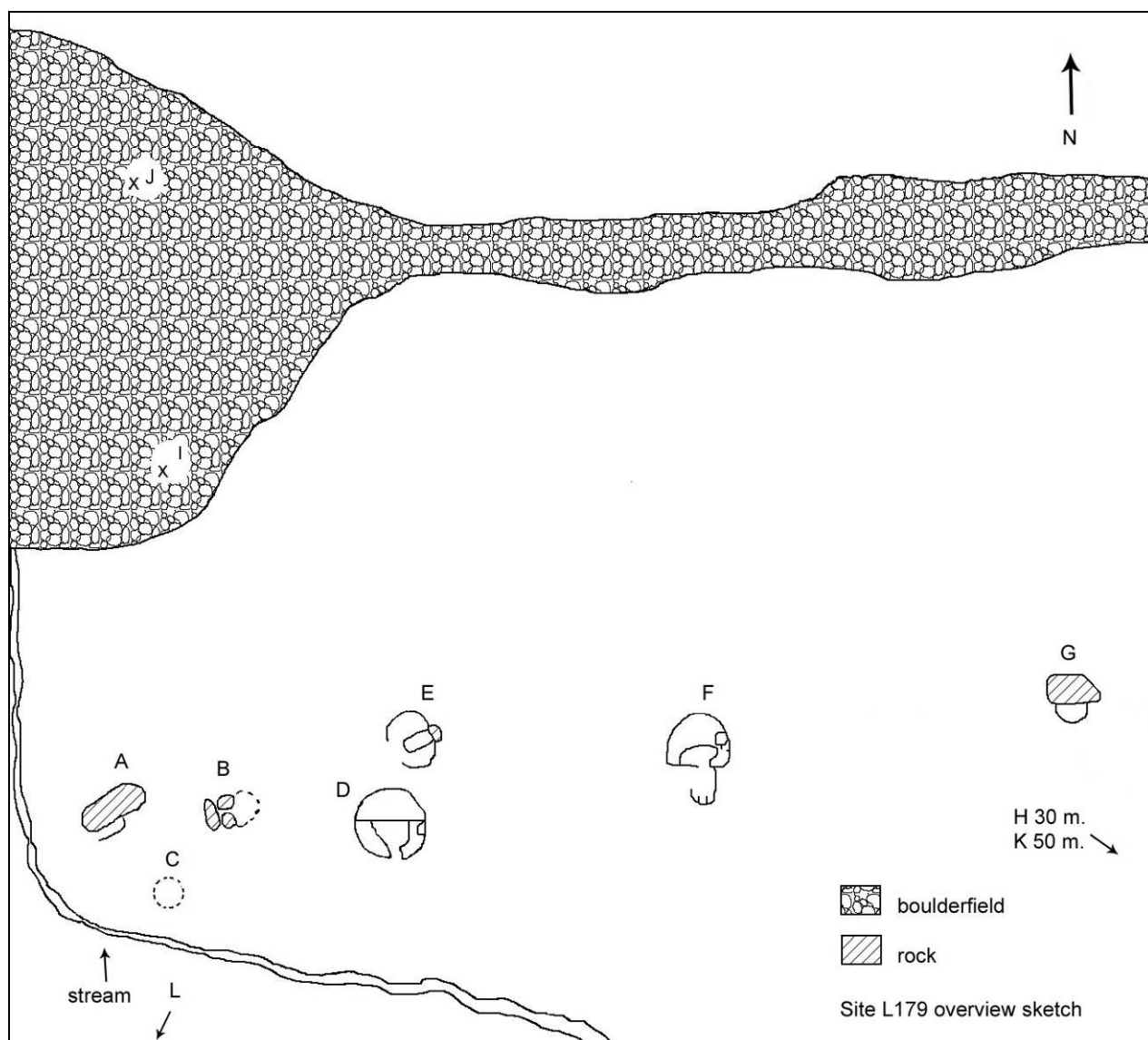
J: Shooting blind (2 meters long) built of stones in two courses at the edge of a depression in the boulder field.

K: Cache or outlook against the rock-wall to the SW of the settlement. A stonewall with several courses makes the wall to north east. A corroded can of tin was found inside the structure. Dim.: 2 x 2.5 m.

L: Shelter of courses of stones under an overhang in the rock wall. Dim.: 2.5 x 2m.

Position of settlement: N65° 49.229' / W051° 34.998'. Height approx.: 453 m.

Photos: DSC 4117: Feature D from SW, DSC 4121: F from W, DSC 4123: E from NW and DSC 4124: Dwelling area from SW.



**Fig. 3:** Settlement situated in the bottom of a valley. A, G and K: caches; B and C: possibly tent rings from the Thule Culture; D and F: recent tent foundations; E intermediate type of tent foundation; H, I and J: shooting blinds. L: outlook or cache built under overhang on the rock wall to the SW of the settlement. Site no. 65V2-0IV-008.

**65V2-0IV-010:** 2 shooting blinds of rows of stones on bedrock c. 7.5 m away from each other. Position: N65° 49.291' / W051° 34.706'. Approx. height: 461 m.

### Transmission Line Area north to Majoqqaq

August 11<sup>th</sup> to 14<sup>th</sup>: Survey on transmission line from east end of Ilulialik to Majoqqaq Nuussua. The weather was mostly sunny and warm. On August 11<sup>th</sup> the helicopter lifted the survey team across Lake Ilulialik.

#### Recordings

**65V2-0IV-011:** 3 shooting blinds in the western part of a small valley.  
A: Stones on each side of a rock make up an arched 2 meter long row.

B: Approximately 20 meter S of A three stones are put on top of a rock.

C: 50 m east of B at center of the valley a V-shaped blind made of 4 big and some smaller stones.

Position: N65°47.609' /W051° 34.266'. Height approx: 510 m.

**65V2-0IV-012:** Small shooting blind of 3 small stones on bedrock. Approx: 0.6 m.

Position: N65° 47.485'/W051°34.973'. Approx. height: 469 m.

**65V2-0IV-013:** Small shooting blind on a rock in small valley at the mountain slope.

The blind is made of two head-sized stones and five smaller ones. Shooting direction probably NE.

Position: N65°47.312' / W051°34.873'. Approx. height: 467 m.

**65V2-0IV-014:** Shelter or outlook on small ledge below some big fallen rocks on a south facing mountain slope. The structure is built between two fallen rocks and partly under the overhang from the easternmost rock. Two stonewalls bound the structure. A smaller wall in three courses between the rocks. A longer wall built in front of the eastern rock. The course at the bottom built of larger than head-sized stones in the several next courses; the stones are smaller and covered with a layer of turf on top. Excellent view from the structure over the big valley to the south. Inside dim.: 3 x 2 m.

Position: N65° 46.493'/W051° 40.387'. Approx. height: 421 m.

Photos: ALCOA 2009/26: Shelter from S, ALCOA/30: From above and ALCOA/31: From W.

**65V2-0IV-015:** Two shooting blinds.

A: 6 head-sized stones in a semicircle on a rock. Length of blind: approx: 1 m.

B: 4 big and 5 small stones in a straight line on top of protruding bedrock.

A is on the E-side of a depression on the northern mountain slope. B 50 m south of A on top of the mountain.

Position: N65° 46.349'/W051° 40.908'. Approx. height: 474 m.

**65V2-0IV-016:** Hunter's bed and a cairn.

The hunter's bed is built as a rectangle with head-sized stones in two courses. Two slabs inside at the NW corner. Dim.: 1.5 x 2.5 m. The cairn is situated by a small lake a while NW of the structure.

Position: 65° 45.981'/W 051° 41.893'. Approx. height: 463 m.

**65V2-0IV-017:** Two shooting blinds.

A: A head-sized and a small stone put on a rock situated on a hill side. Length: 0.5 m

B: Approximately 0.75 long blind built of stones on a rock situated 25 m. S of A.

Position: N65° 45.920' / W 051° 42.245'. Approx. height: 457 m.

**65V2-0IV-018:** Shooting blind built of three head-sized and two smaller stones on a rock. The straight blind has a length of 1.3 m.

Position: N65° 45.837'/W 051° 42.458'. Approx. height: 454 m.

**65V2-0IV-019:** Shooting blind

N65° 45.754'/ W51° 43.413'. Approx. height: 478 m.

**65V2-0IV-020: Semicircular** shooting blind built around a rock by putting stones on each side situated in SE part of a small valley filled with scree.

Position: N65° 45.551'/W051° 44.392' Approx. height: 445m.



**65VI-00I-018:** Seven shooting blinds on NE side of the top of the mountain on the part of a plateau covered with scattered boulders.

A: Seven head sized stones in a semicircle on top of a rock. Length approx: 2 m.

B: Five smaller stone on line on top of a rock. Length approx.: 1 m.

C: Stones in a semicircle on a rock. Length approx.: 1.5 m.

D: A stone on edge at a rock. Several stones have fallen from the rock.

E: Six stones at a rock. Length approx: 1.1 m

F: Big stone at a rock. In the gap between the rock and another smaller rock are several rocks.

G: One head sized stone and 6 smaller on a rock situated 150 m NE of blind F.

Position: N65° 454.528'/W 051° 45.557'. Approx. height: 506 m.

**65VI-00I-019:** Hunters bed /outlook. An angular wall of stones in 3 courses between two rocks makes up a room with the dimensions of: 2.6 x 3 m.

Position: N65° 45.420' / W51° 45.766'. Approx. height: 486 m

**65VI-00I-020:** Shooting blind.

Position: N65° 45.120' and W51° 46.311'. Approx. height: 460 m.

**65VI-00I-021:** Hunter's bed built against a S-facing mountain slope. Built from head-sized stones in a semicircle. Dia.: 2 m

Position: N65° 45.016' / W51° 46.564'. Approx. height: 472 m.

Photos: ALCOA 2009/43: Hunter's bed from above.

**65VI-00I-022:** Hunting-drive on an isthmus between two lakes marked by 4 cairns of stones.

A: Three smaller stones on top of a rock.

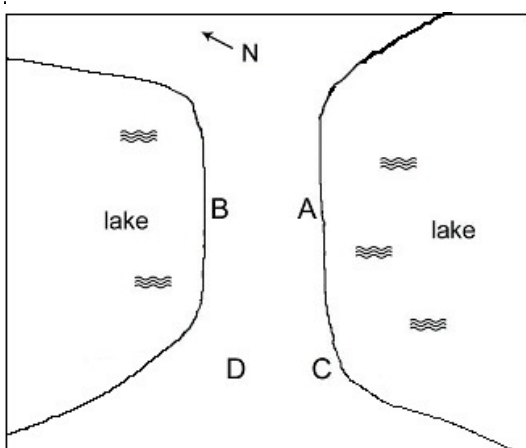
B: Upright slab supported by a head sized stone. The cairn is situated 50 m north to cairn A.

C: Head sized stone on a rock situated approximately 50 m to the vest of B.

D: Probably a naturally positioned rock included in the drive system.

Position: N65° 44.314'/W51° 48.581'. Approx. height: 474 m.

Photos: ALCOA 2009/ 45 + 46: Drive hunting area on isthmus from W.



**Figure 4:** Hunting drive between two lakes. Cairns A-D.  
Site no: 65VI-00I-022

August 13<sup>th</sup>: sunny with clear sky. Survey continued down the valley /gorge to Majoqqap Nuussua, where the team had the last camp in the area.

**65VI-00I-023:** Two or more rock shelters under and between clefts in an outcrop. The shelters are situated on the S side of the outcrop protruding from the north slope of a valley.

Position: N65° 42.514' / W51° 53.573'. Approx. height: 505 m.

Photos: ALCOA 2009/55: Shelter from S and ALCOA 2009/57: Outcrop with shelters from SW.



**Fig. 5:** Outcrop containing at least two shelters. Site no. 65VI-00I-023

**65VI-00I-024:** Hunter's bed, shelter and a hearth.

A: Shelter between two fallen rocks. The smaller rock to the north is leaning against the bigger one making the space between them a perfect shelter. The shelter is delimited by head-sized and smaller stones. Dim.: 2.5 x 2.5 m.

B: Circular hunter's bed approx. 25 m to the S of A; built of head-sized stones. Interior of bed is overgrown with grasses, heather and moss. Dia.: 2 m.

C: Hearth on the S side of a boulder 3 m. N of A.

Position: N65° 41.044' / W51° 56.429'. Approx. height: 394 m

August 14<sup>th</sup>: fog in Nuuk delayed the helicopter. Team picked up at early noon. Did an aerial survey from Isortoq on the transmission line and landed on the last mountain before Saqqap Sermia.

### **Transmission Line Between Isortoq and Saqqap Sermia**

The aerial survey did not produce new recordings in spite of the excellent flying performed by our pilot following the route and at very low altitude at areas which looked promising. The many place names from Isortoq to Qoorupiluk indicate that the area had been used in former times.

**65V2-III-009:** Shooting blind.

Built of big and head-sized stones in 2-3 courses.

Position: N65° 10.434' / W50° 48.491'. Approx. height: 444 m.

## Transmission Line South to Saqqap Sermia

August 15<sup>th</sup>: almost clear sky in Nuuk; the helicopter picked up the team around 10 am and took them across the gorge. Fog and rain came at late noon, but the team reached the chosen overnight camp, before the fog closed visibility down.

**65V2-0II-054:** Hunter's bed built against the bedrock on a W-facing slope.

The bed is rectangular with S, W and N-sides built from head-sized stones. Stones lay deep in the ground. The interior is overgrown with grasses and moss. Dimensions: 3 x 1 m.

Position: N65° 05.324' / W50° 35.415'. Approx. height: 679 m.

August 16<sup>th</sup>: overcast but as the cliffs were still wet and slippery we waited some hours before we continued surveying.

**65V2-0II-055:** Rock shelter under a big rock with openings to S and N. Stones placed at both openings delimit the shelter.

Position: N65° 03.948' / W50° 33.027'. Approx. height: 639 m.

**65V2-0II-056:** Hunter's bed under an overhang in the mountain slope facing S.

The quadrangular bed is built from big slabs. Dimensions: 1.5 x 1.5 m.

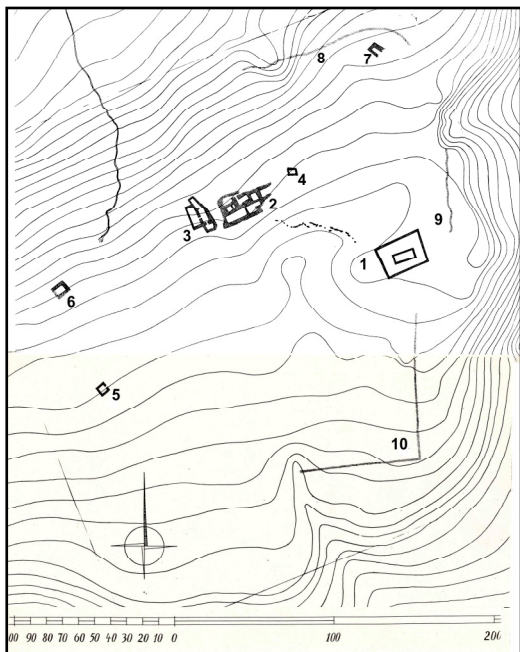
Position: N65° 02.058' / W50° 30.863'. Approx. height: 560 m.

August 17<sup>th</sup>: clear sky but we had to wait for the helicopter until noon when fog in Nuuk lifted. The survey team conducted an aerial survey from the overnight camp along the transmission line to the southern hydropower station. The team flew to Nuuk.

## Recordings

**64V2-0IV-515:** Norse farm *Anavik* with at least 7 buildings and 3 fences; most built with turf and stones. The church is surrounded by the graveyard. The Norse lived in the area c. 1000 – 1350 AD.

Position: 64° 49.427' / W50° 08.645'



**Fig. 6:** The Norse farm *Anavik* is situated on the north side of Ujarassuit Paavat.

Feature 1 is a ruin of a church surrounded by a fenced graveyard; feature 2 is the farm-house; 5 is a store house built of stone; features 8 – 10 are fences; the rest are economy buildings.

The church and the farm-house partly excavated.

From interviews conducted by NKA last summer and other sources it is known that the area south of Saqqap Sermia and Kangersuneq was caribou hunting grounds until the 1970ies. Even though no cultural structures were visible from the air, except the Norse farm *Anavik*, it is most likely that archaeological sites are to be found.

August 18<sup>th</sup> – 20<sup>th</sup>: replacement of one crew member in Nuuk. The crew was not able to leave Nuuk before after noon due to fog. The helicopter brought the crew to the site where the zodiac was deposited at the planned northern dam at the southern reservoir (6g). On the 19<sup>th</sup> the team surveyed the planned dam area. On the 20<sup>th</sup> the team stayed at the campsite due to the rain.

### **Dam area Tarsartuup Tasersua North**

**64V2-0IV-045:** A shooting blind (D3), a tent ring (E) and a cairn (F) were added to the structures recorded last summer. The tent ring, approx. 10 m. NW of the shooting blinds, is built by smaller than head-sized stones placed with approx. 30 cm between them. Dim. of ring: 4 x 4 m.

Inside the vegetated ring two lead bullets and a corroded tin cap with the imprint *Nescafe* and “*EFTER BRUGEN*” were found. On the beach near the tent ring a white plimsoll was found. The cairn is 30–50 m N of the site.

Photos: P1010040: Shooting blind from N, P1010054 Cartridge and lid for tin can and P 1010055: tent ring from E.



**Fig. 6:** Natural rocks used as shooting blind by adding stones. Site no. 64V2-0IV-045.



**Fig 7:** Square tent ring on site no. 64V2-0IV-045

### **Tasersiaq**

August 21<sup>st</sup> crew and equipment was transferred to the site in the northern reservoir area, Tasersiaq, where 6 tent rings emerged last summer as the water in the lake sank. This season 2 more structures emerged as the water level was even lower. After photo documenting the new structures, probably tent rings, the crew went to site no. 66V2-0II-075 to check (in vain) for further signs of drive hunting in the upland. The crew sailed to the settlement Qoornoq Kangilleq (66V2-III-089) for camping. Next day both shores west of the settlement were surveyed. In the evening the camp was moved to the settlement Issormiut, site no. 66V2-III-093.

**66V2-0II-070** Two new tent rings from the Saqqaq culture were added to the structures recorded in 2008.

Position: N66°12.617' / W50°04.579'

Photos: ALCOA 2009/120: Tent ring G from N and ALCOA 2009/121: Tent ring H from W.

**66V2-III-180:** Fox trap.

Position: N66° 12.576' / W50° 45.766'. Approx. height: 697 m.

August 23<sup>rd</sup>: the southern shore of the dam-area at the west end of the lake was surveyed.

**66V2-III-181:** Shooting blind of two head-sized and three smaller stones on two rocks adjacent to each other. A caribou track runs approx. 7 meters to the west of the blind.

Position: N66° 18.213' / W51° 18.940'. Approx. height: 771 m.

Photo: P1010255: Shooting blind from above.

August 24<sup>th</sup>: the shore to the north of the dam-area was surveyed in excellent weather.

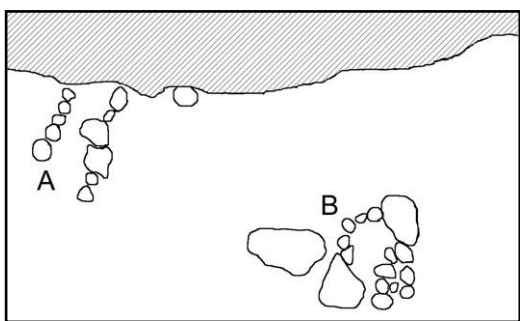
**66V2-III-182:** Two hearths

Hearth A: two rows of stones against a rock wall. Length approx 0.5 m.

Hearth B: approx. 2.5 m SW of A. Built between two larger than head-sized stones. A big slab lay immediately to the north of it.

This site will not be inundated if Tasersiaq is dammed.

Position: N66° 19.165' / W51° 21.373'. Approx. height: 697 m.



**Fig. no. 8:** Sketch of two hearths. Not to scale.  
Site no. 66V2-III-182.

**66V2-III-183:** Shooting blind built of two head-sized stones and one smaller on a rock. L: 0.75 m. This site will not be inundated if Tasersiaq is dammed.

Position: N66° 19.713' / W51° 21.776'. Approx height: 769 m.

**66V2-III-184:** Unknown type of structure. Semicircle of head-sized and smaller stones at the foot of a hill. Diameter is approx. 4 m.

This site will not be inundated if Tasersiaq is dammed.

Position: N66° 19.892' / W51° 22.142'. Approx. height: 769 m.

**66V2-III-185:** Tent house on the W-facing slope of the mountain. The outline of the ruin is a square divided into two rooms: entrance to the N and a living room to the E. Built of larger than head-sized stones. Dim.: Entrance 1 x 2.5 m and main room: 3.5 x 2.5 m

Photo: P1010272

This site will not be inundated if Tasersiaq is dammed.

Position: N66° 19.748' / W51° 21.794'. Approx. height: 774 m.

**66V2-III-186:** Site with two tent houses, a cache and a shooting blind in a small pass at the mountain slope.

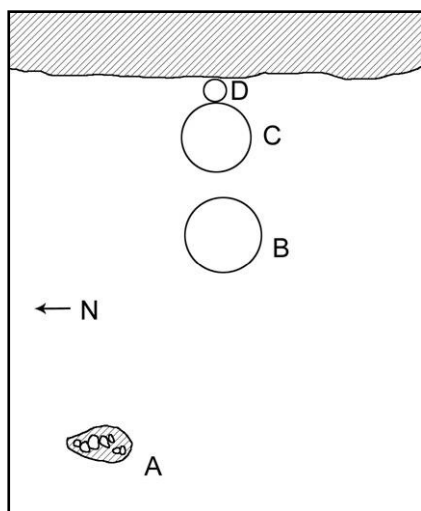
A: Shooting blind of stones put on a rock NW of the dwellings.

B and C: Two circular tent houses separated by 1 meter. Dia. approx.: 2 m.

D: Circular meat cache of stones between ruin C and outcrop making the eastern limit of the pass. This site will not be inundated after damming of Tasersiaq.

Position: N66° 19.176'/W51° 20.696'. Approx. height: 773 m.

Photos: P1010273 + P1010274: Features B, C and D from NW



**Fig. 9:** Small hunting camp site no. 66V2-III-186. This site will not be inundated if Tasersiaq is dammed. Sketch not to scale.

**66V2-III-187:** Two shooting blinds situated on the hill slope beneath site no. 66V2-III-186.

A: two stones on a rock and on the edge.

B: seven stones built over two rocks in a semicircle. 12 meters N of A. Length 1.5 m

This site will not be inundated if Tasersiaq is dammed.

Position: N66° 19.022' /W51° 20.293'. Approx. height: 757 m.

**66V2-III-188:** Fox trap and cache on a raised beach 10 to 15 m above lake. The structures are 1 meter apart and of considerable age.

A: The trap has fallen apart. Length: 0.75 m.

B: cache with some bones visible between the stones. Dia.: 1 m.

Position: N66° 16.126' /W51° 13.264'. Approx. height: 716 m.

August 25<sup>th</sup>: sunny day where the dam-area to the west of Quantum Lake was surveyed.

**66V2-III-189:** A shooting blind made of two stones on a rock. Length: 0.5 m.

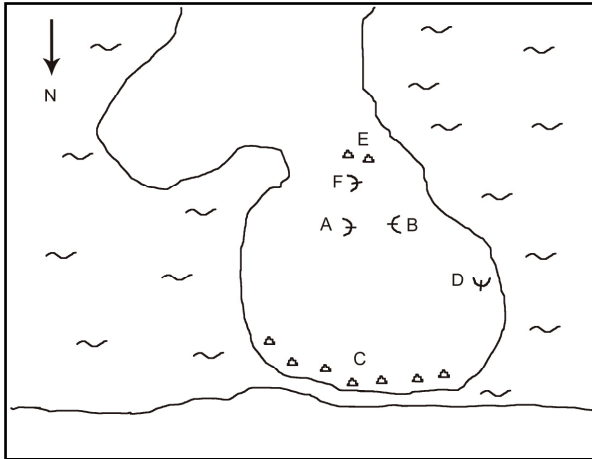
Position: N66° 13.926'/W51° 14.658'. Approx. height: 705 m.

**66V2-III-190:** Hunter's bed in a small pass. The bed is built against an angle of the outcrop facing south. The cliffs form the walls to the E and N. To the W a rock forms the wall. A 0.5 m long course of stones delimit the bed to the south.

Position: N66° 13.246' /W51° 17.719'. Approx. height: 705 m.

Photos: P1010282 + P1010283 from S





**Fig. 10:** Site no: 66V2-III-191, drive-hunting system on peninsula west of Quantum Lake. Sketch not to scale.

**66V2-III-191:** Drive-hunting system on peninsula on the southern shore of the lake. Structures A and B are shooting blinds facing each other. Structure F seems to be both a shooting blind and a hunter's bed. The drive includes cairns C + E.

Position: N66° 13.013'/W51° 16.857' and N66° 12.968'/W51° 16.536'. Approx. height: 708 m.

Photos: P1010289: Shooting blind A, P1010290: Shooting blind B, P1010291: One of the cairns in system C, P1010295 Shooting blind F and P1010300: Hunter's bed F.

**66V2-III-192:** Cairns marking a river crossing just after the outflow from the lake. One cairn is just at the river and the other on an outcrop above the river; photo on front page of this report.

Position: N66° 13.094'/ W51° 17.574'. Approx. height: 704 m.

Photos: ALCOA 2009/156: Cairn by river and ALCOA 2009/157 Cairn on outcrop.

## Transmission Line and road routing by and on Maniitsoq

August 26<sup>th</sup>: the crew and all equipment relocated to Maniitsoq.

August 27<sup>th</sup>: an attempt to survey the transmission line from Isortoq to Maniitsoq failed as the outboard engine did not work properly due to water in the fuel. After cleaning it functioned again.

August 28<sup>th</sup>: on a sunny day the archipelago from Isortoq to Maniitsoq was surveyed. No cultural remains were found on the planned transmission line. On some of the small islands, where poles for electric cables will be erected, hunters' cabins and smaller houses for leisure use have been built. No buildings are situated close to the line.

August 29<sup>th</sup>: the planned survey on the road from the smelter site to Maniitsoq was cancelled. It was pointless as planning of the route was still going on. Instead the team surveyed the road from the new part of the town to Maniitsoq.

**66V1-0II-061:** Three caches in a boulder field in front of a steep cliff. One is built against the cliff the others are in the boulder field.

Position: N65° 25.708'/W52° 53.266'. Approx. height: 18 m.

Photos: ALCOA 2009/163, 165 and 166.

## Road in Ujaraannaq

August 30<sup>th</sup>: a helicopter was available and some of the team surveyed part of the road from Tasersiaq, Lake 7e, to the power station area at the fjord of Kangerlussuatsiaq.

**66V2-III-193:** Tent house and hunter's bed. Both structures built against the S-wall of an outcrop. Both structures overgrown with grasses inside.

A: Tent house of larger than head-sized stones. The S-wall of the outcrop makes the N-wall of the house. The stonewall making the outline of the house is angular with an opening on the western part of the southern wall. An addition made to the W-wall is probably a cache. Dim. of house: 2 x 2 m.

B: Hunter's bed built c. 30 m E of structure A against the southern wall of the outcrop. Built of larger than head-sized angular stones. Bed is oriented W to E. Dimensions: 3 x 1.5 m.

Position: N66°12.566' / W51° 23.296'. Approx. height: 761 m.

Photos: ALCOA 2009/173: Tent house from S, ALCOA 2009/174 tent house from above, ALCOA 2009/175 + 176: Hunters bed from SE

**66V2-III-194:** Hunter's bed and cache. Both structures situated on a N-facing gentle slope.

A: Hunter's bed near a small outcrop. The stones forming the semicircle are head-sized. Dia.: 2 m.

B: Cache a little to the NE of structure A; against a rock. A slab is put on the edge of a rock and supported by a stone under the other edge. Dim. of cache: 0.75 x 0.75 x 0.5 m

Position: N66° 12.611' / W51° 22.778'. Approx. height: 777 m.

Photos: ALCOA 2009/177: Hunters bed from N, ALCOA 2009/178: Cache from W and ALCOA 2009/179 Cache and hunter's bed from N

## Conclusion

The main result of the 2009 archaeological field survey is that 81 new structures were recorded. Besides these the 7 well-known features from the Norse site at *Anavik* are included in this report. Five of the new structures were found on sites recorded in previous years.

**Transmission lines:** in general NKA don't expect conflicts between protected prehistoric structures and planned constructions on the transmission lines. If planned positions for poles should coincide with cultural remains it is considered possible in general to relocate the poles.

**Recommendation:** inform NKA about all pole-positions before building-activities. Bring an archaeologist to the planned positions before erecting of poles begin in the area between Søndre Isortoq and Qoorupiluk as this part of the transmission line has only been surveyed from the air and the wealth of place names in the area indicates that cultural remains are likely to be found.

*Anavik* in Ujarassuit Paavat: NKA has seen plans for a road and a hydropower station close to the site. The complex including the area around it is a unique Norse area.

**Recommendation:** Disturbing the area at and around the Norse site of *Anavik* is not acceptable. The site is a very important site, and if the area will be disturbed in any way, the archaeological documentation of the site will be very comprehensive and expensive.

**Tasersiaq:** Some new sites were recorded and they add to the wealth of information in this area. A few structures are of special interest like the new tent rings from the Saqqaq culture, which have been added to the previous recordings from site no. 66V2-0II-070. The site has been AMS dated to 2000 -1800 calBC. Another site of special interest is the drive hunting system (66V2-III-191) on the peninsula at the lake between Quantum Lake and Ujaraannaq. The system is a combination of cairns, shooting blinds and hunter's beds.

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By this report the Greenland National Museum has finished the surveys mapping cultural interests and features automatically protected by law in areas known in 2007 as the project-areas that will be affected by the Aluminium Project planned by ALCOA/the Greenland Self-Government

## Summary of structures mapped in August 2009

### Sites mapped on transmission line from hydroelectric power stations to smelter site

Sites mapped on transmission line from hydroelectric power stations to smelter site

Type of feature	Site no. 65V2-0IV																65V1-00I								65V2 III	65V2-0II			sum
	7	8	9	10	11	12	13	14	15	16	17	18	19	20	18	19	20	21	22	23	24	9	54	55	56				
tent foundation			3																								3		
rock shelter		5				1		1												2	1			1			11		
hunter's bed	1																	1			1			1		1	5		
fireplace																					1						1		
cache			3																								3		
cairn system																			1								1		
shooting bl.			3	2	1		2		2	1	1	1	1	1	7	1	1					1					25		
cairn								1																			1		
total	1	5	9	2	1	1	2	2	2	1	1	1	1	1	7	1	1	1	1	2	3	1	1	1	1		50		

### Tasersiaq; Lake 7e

Type of feature	Site no. 66V2-III																66V2-0II		sum
	180	181	182*	183*	184*	185*	186*	187*	188	189	190	191	192	193*	194*	070			
tent house						1	2							1					4
hunter's bed											1			1	1				3
fireplace			2																2
cache							1		1						1				3
cairn system												1							1
shooting bl.		1		1			1	1		1									5
fox trap	1								1										2
single cairn													2						2
Saqqaq culture																	2		2
other					1														1
total	1	1	2	1	1	1	4	1	2	1	1	1	2	2	2	2	2		<b>25</b>

\* Site that will not be inundated by damming Tasersiaq

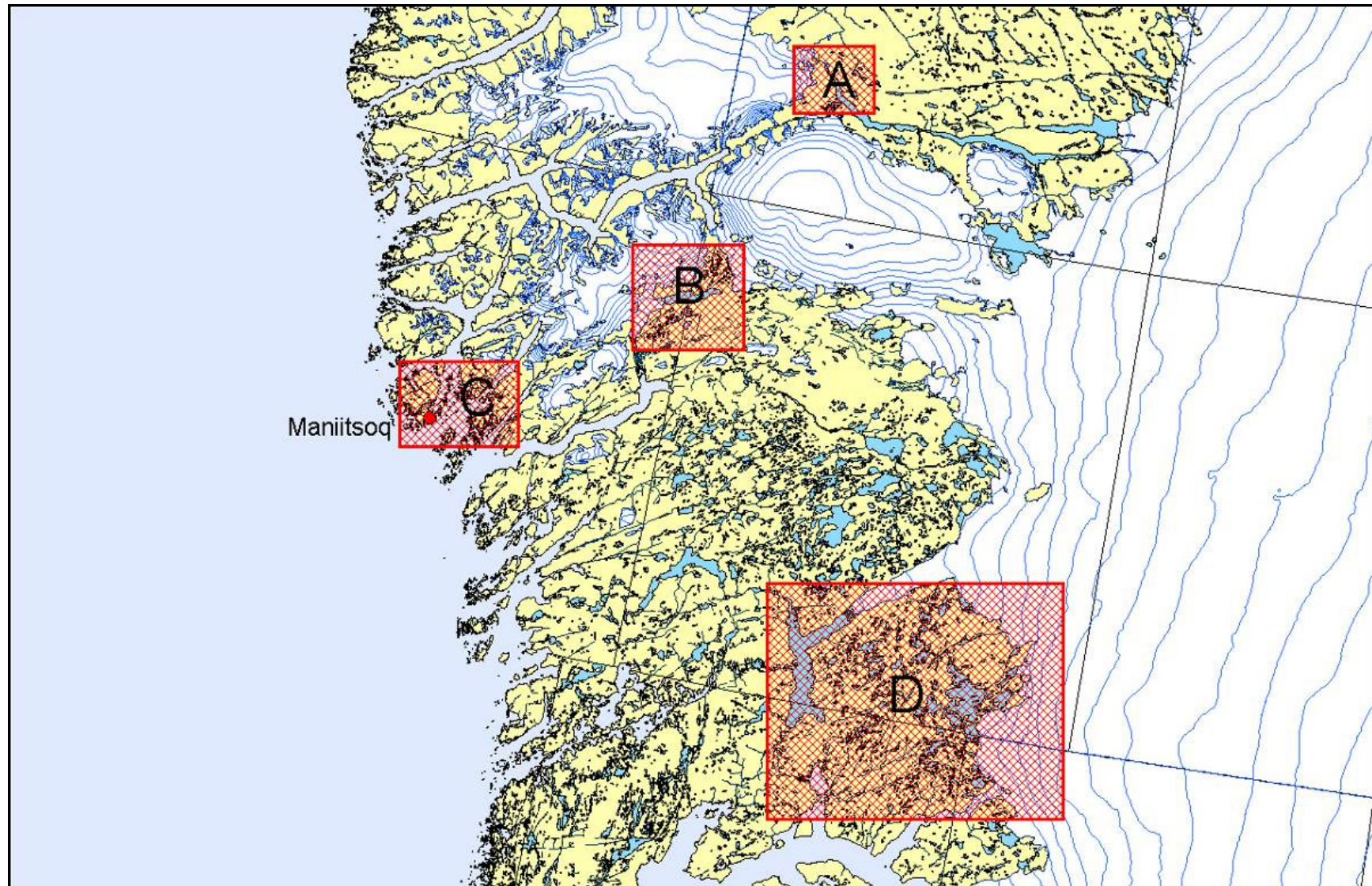
### Tarsartuup Tasersua; Area 6g

Type of feature	Site no. 65V2-0II-056	Sum
tent ring	1	1
cairn	1	1
shooting blind	1	1
total	3	<b>3</b>

**Maniitsoq Area:** 3 meat caches on site no. 65V1-0II-061

**Ujarassuit Paavat:** Norse farm (*Anavik*) with farmhouse, church & graveyard, store houses, and fences.

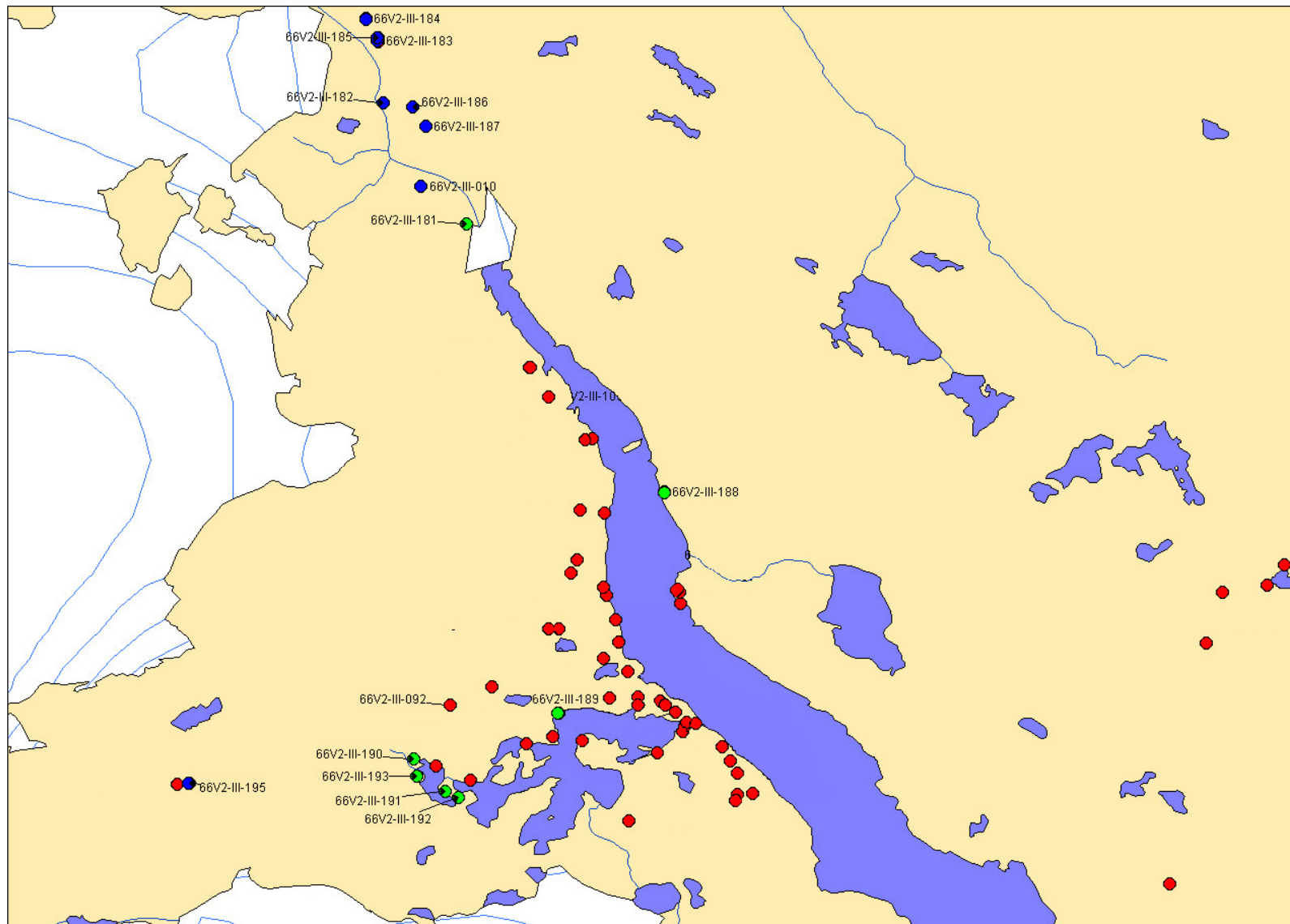
## Maps



Map 1: Overview of survey area showing detailed maps

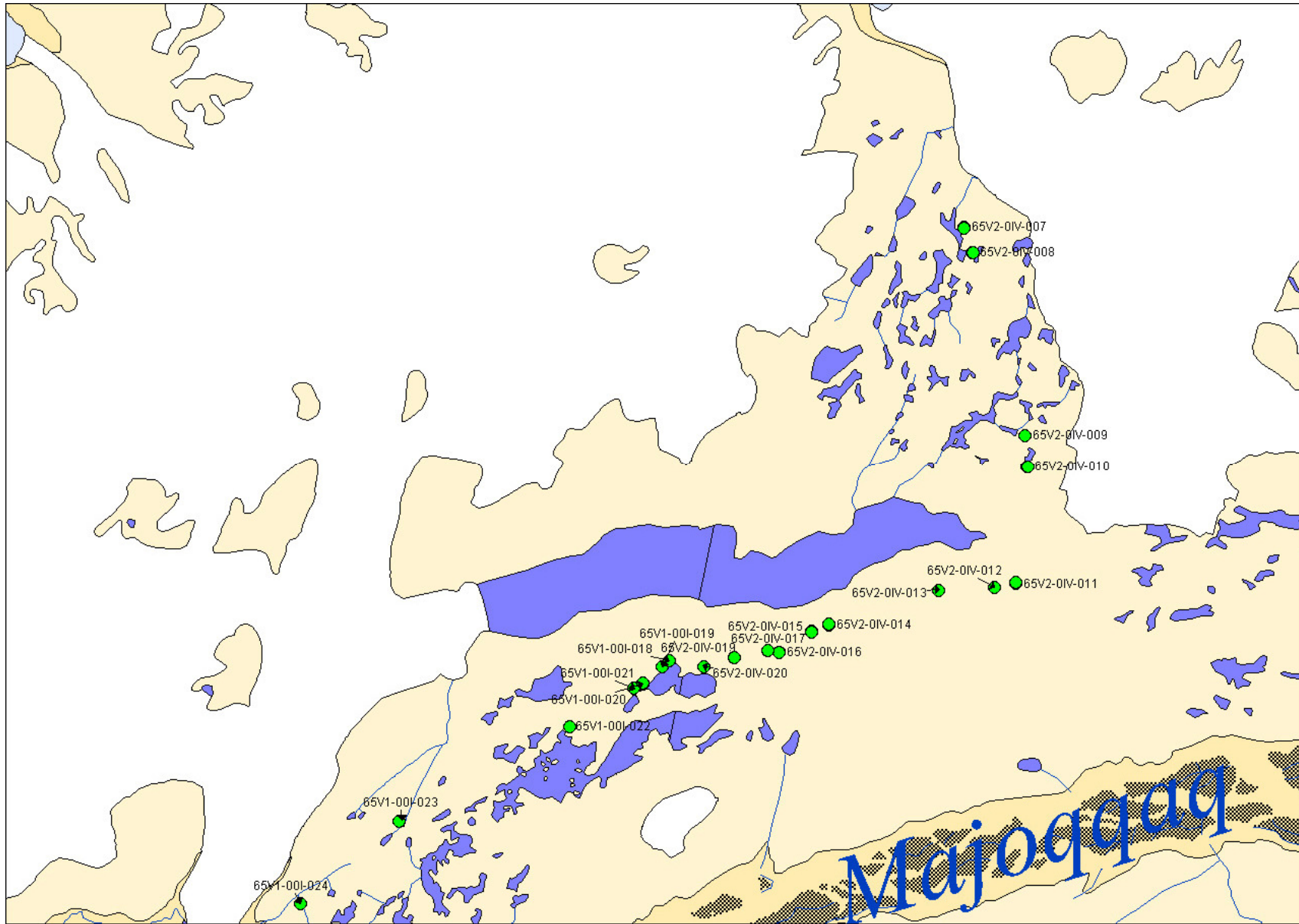


Maps A, B, C and D: ● new site, not to be inundated; ● new site; ● site recorded in previous years; ● Norse site

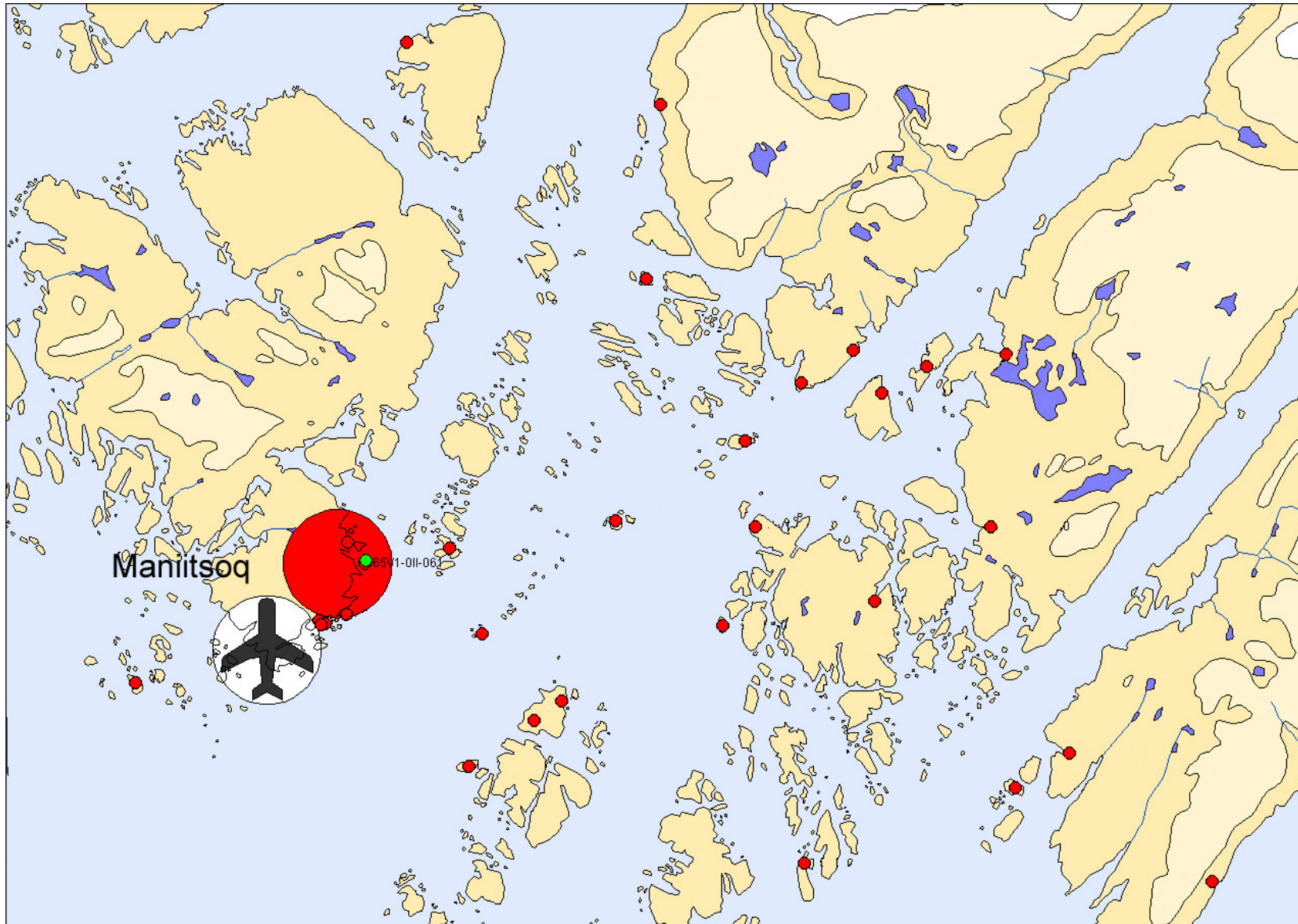


Map A: Tasersiaq west

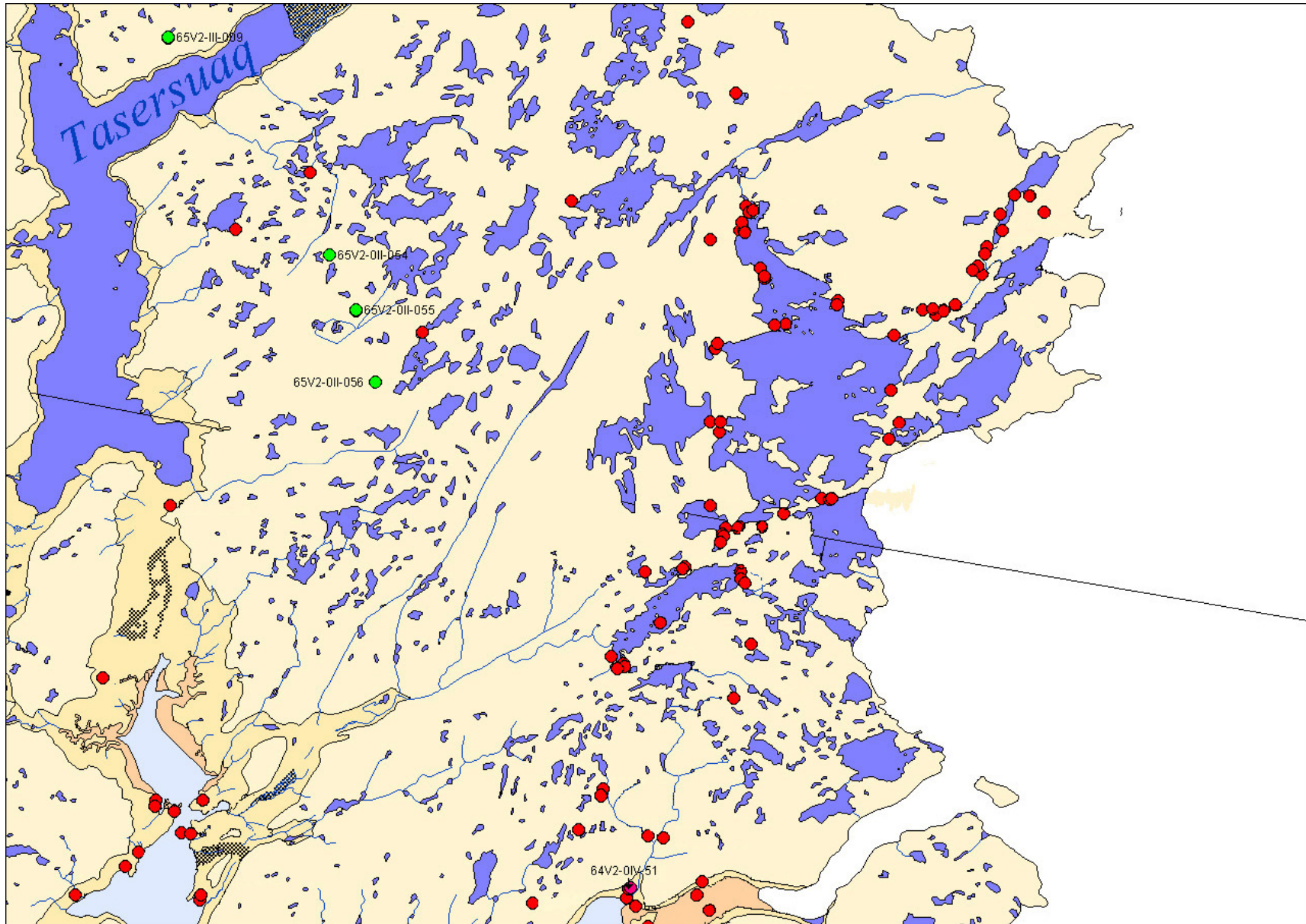




Map B: Nunatarsuaq and area north of Majoqqaq

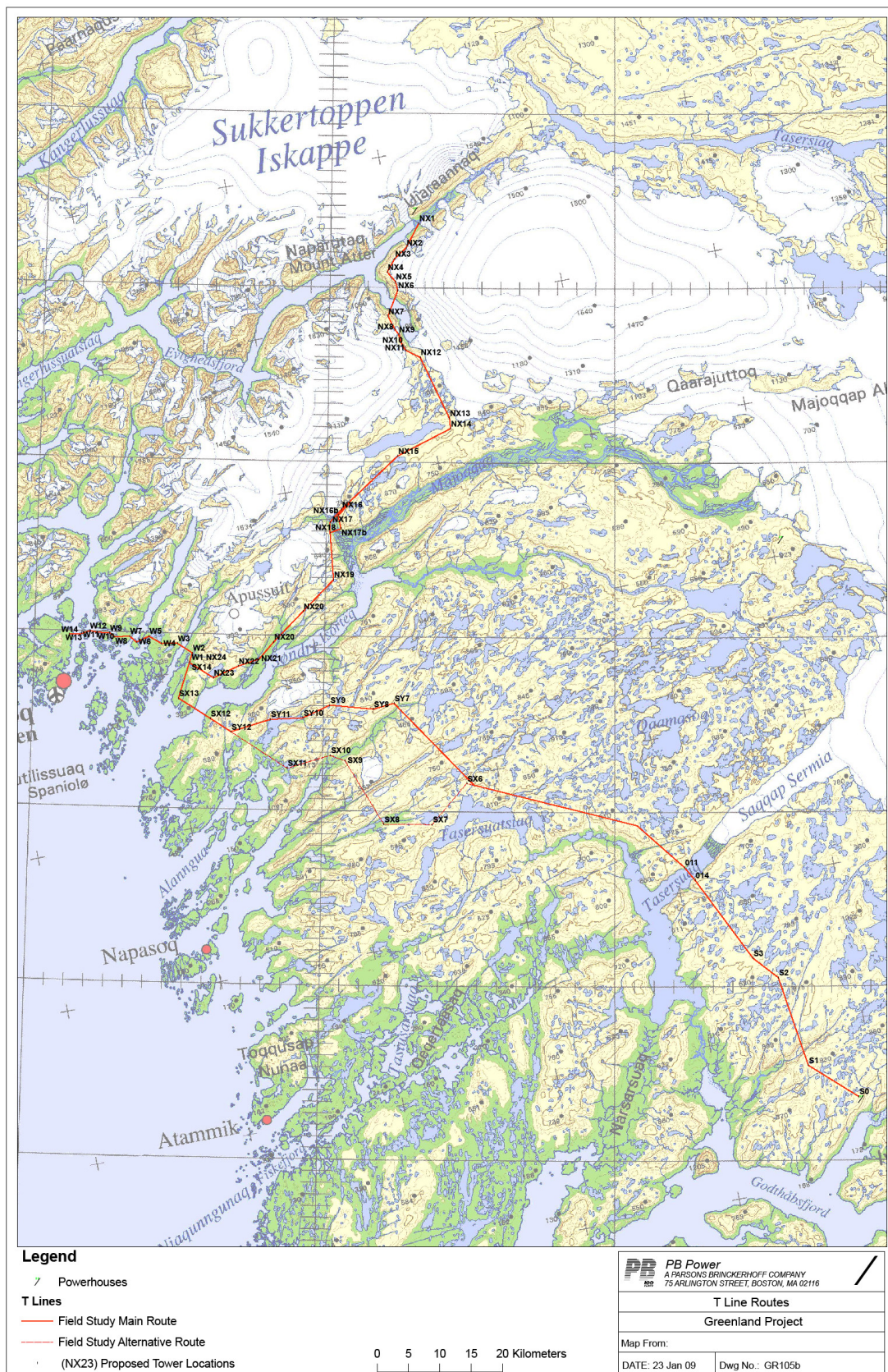


Map C: Maniitsoq and archipelago to the east



Map D: Area west and south of Tarsartuup Tasersua. The Norse site no. 64V2-0IV-515 (*Anavik*) is at the bottom of the map.





**Map 2:** The red line indicates the transmission lines from power stations at 7e and 6g to the smelter site.

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